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AN EXPLORATORY STUDY ON STRATEGY DIRECTION AND STRATEGY MAGNITUDE IN ORGANIZATIONS: THE STRATEGY VECTOR MODEL

by

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LIST OF SYMBOLS

ϕ	Phi – Angle between two vectors
λ	Lambda – A scalar constant
X	Horizontal component of 2D coordinate system
Y	Vertical component of 2D coordinate system

LIST OF ABBREVIATIONS

Dif	Difference
Dir	Direction
KMO	Kaiser-Meyer-Olken
Mag	Magnitude
Pow	Power
Str	Strategy
SVM	Strategy Vector Model

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ABSTRACT

This study proposes a new conceptual model for the evaluation of organizational strategies and for the diagnosis of strategy problems in organizations. The proposed model -Strategy Vectorial Model (SVM)- introduces a holistic approach for the strategic management of all kinds of organizations.

SVM interprets organizational strategy as a vector in a 2D circular coordinate system where azimuth refers to *strategy direction* and radius refers to *strategy magnitude*. SVM is proposed as a tool for the measurement of actual organizational strategy which may also be used for the evaluation of strategic performance and for the determination of strategy related problems.

Four cardinal *strategy direction*s (Innovative, Conservative, Adaptive, and Erratic) and five levels of *strategy magnitude* are employed in the model for expressing both individual and organizational *strategy vector*s. The *strategy vector*s of individuals will be measured by a carefully-designed questionnaire composed of four dedicated instruments for four parameters. Measured individual vectors are summed with a specifically designed software program and thereby the resultant organizational vector is calculated. Besides determining exact organizational strategy status in terms of *strategy direction* and *magnitude*, the model is also expected to be useful for the diagnosis of *strategy problems* such as *strategy anomalies, strategy deviation* and *strategy deficiency*. *Strategy anomalies* represent situations where the organizational vectorial structure or in other words the distribution of individual strategy vectors in the organizational structure, does not have a semblance of a healthy organization. *Strategy deviation* refers to the directional deviation from the intended direction and *strategy deficiency* refers to the difference between the intended and measured *strategy magnitude*s. SVM is proposed as a new tool to help decision makers to see the gap between where they are and where they want to be. The difference between the *aimed* and *measured organizational strategy vectors* is addressed as *strategy gap* and calculated with the proposed model.

Keywords: Strategic management, Strategy vector, Strategy problems, Strategic Performance Evaluation

ÖZET

Bu çalışma örgüt stratejilerinin değerlendirilmesinde ve örgütlerdeki stratejik problemlerin teşhisinde kullanılabilecek kavramsal bir model önermektedir. Önerilen ve Strateji Vektör Modeli (SVM – Strategy Vector Model) olarak adlandırılan model örgütlerde stratejik yönetimle ilgili bütünsel bir yaklaşım sunmaktadır.

SVM, iki boyutlu dairesel koordinat sisteminde örgüt stratejisini görsel olarak ifade etmektedir. Bu gösterimde açı "*strateji yönüne*" yarıçap da "*strateji genliğine*" karşılık gelmektedir. SVM, gerçek örgüt stratejilerinin ölçülmesinde, stratejik performansın değerlendirilmesinde ve strateji ile ilgili problemlerin belirlenmesinde kullanılabilecek bir araç olarak önerilmektedir.

Bireysel ve örgütsel stratejileri görselleştirmek üzere SVM'de; "*strateji yönler*" dört ana yönle (Innovative-Yenilikçi, Conservative-Tutucu, Adaptive-Uyumlu, and Erratic-İstikrarsız) ve "*strateji genlikler*" ise beş farklı seviye ile ifade edilmektedir. Bireylerin "*strateji vektörleri*" dört farklı parametreye yönelik dört farklı enstrümandan oluşan ve dikkatle hazırlanmış anketlerle ölçülmektedir.

Ölçülen bireysel vektörler özel geliştirilmiş bir yazılım programı yardımıyla toplanmakta ve bu sayede bileşke örgüt vektörü hesaplanmaktadır.

Model; örgütsel stratejik durumun (*örgütsel stratejik vektörün*) belirlenmesinin yanısıra *strateji anomalileri*, *strateji sapması* ve *strateji bozulması* gibi *strateji problemlerininde* de verimli bir şekilde yararlı olabilecektir. *Strateji anomalileri* örgütün vektörel yapısının veya diğer bir deyişle bireysel vektörlerin örgüt yapısındaki dağılımının, sağlıklı bir örgütü andırmadığı durumları ifade eder. *Strateji sapması* hedeflenen strateji yönündeki sapmayı *strateji bozulması* ise hedeflenen ve gerçeklenen *strateji genlikleri* arasındaki farkı ifade etmektedir. SVM; karar vericilerin, olmak istedikleri yerle oldukları yer arasındaki farkı görmelerini sağlayan bir araç olarak önerilmektedir. Hedeflenen ve gerçeklenen *örgütsel stratejiler* arasındaki fark *strateji aralığı* olarak adlandırılmaktadır ve önerilen model yardımıyla ölçülebilmektedir.

Anahtar Kelimeler: Stratejik yönetim, Strateji vektörü, Strateji problemleri, Stratejik performans değerlendirme

1 INTRODUCTION

1.1 Background

According to the common belief, strategy is selected by the top management and eventually accepted by the remaining members of the organization (Booker, 1988, Zuboff, 1988, Zaleznik, 1977, Spender and Grant, 1996, Spender and Grant, 1996, Levy et al., 2001). Resistance is considered; however varieties in the strategies of individuals and the overall effect of those individual strategies on the organizational strategy are ignored.

Existing strategy studies examine strategy as distinctive options for the organizations (Ansoff, 1957, Ansoff and Stewart, 1967, Argyris, 1973, Miles and Snow, 1978, Porter, 1980, Friga, Bettis, and Sullivan, 2003). Although they do not see the strategy and business as polarities like black and white, they do not pay special attention to define the area in between.

In the existing literature, the magnitude of the organizational strategy is not covered. Binary approach which is based on choices of "present" or "absent" seeks whether organizations have a strategy or not but ignores their strength.

This research is intended to provide solutions for the above mentioned problems. For the successful completion of this research, a detailed examination of management, research, design and data questions is needed as a starting point.

Management question of this research is concentrated on the emphasis of gaps in the fields of strategy and management and summarizes the possible solutions that might be provided by the proposed study.

The intention of the present study is to provide a formulation for strategic problems and propose appropriate and unique solutions. It is hoped that the proposed study will provide a nice and clear picture of the strategic status of the organization so it will restrain researchers and/or managers from errors in analyzing and addressing strategic problems.

Strategy is not only confined to the business world but also to public sector and non-profit organizations (Levy, Alvesson and Willmott, 2001). So is the proposed model. This project aims to develop a model which is useful, and valid for all types of organizations.

Strategy is commonly accepted as a complex phenomenon (Miles et al., 1978; Ansoff and McDonnell, 1990; Mintzberg and Quinn, 1991; Stacey, 1996; Bakir, 2001) and extremely difficult to formulate (MacCrimmon, 1993). Cohen, March, and Olsen even claimed that strategy emerges from organized anarchy (1972). According to their study, strategy evolves out of incidental or opportunistic connections (cited in Bakir, 2001) which definitely supports the assertion about the complexity of strategy. Main intention is to develop a simplistic - but adequate - holistic vectorial model which will make the strategy phenomenon easily understandable.

Mintzberg (1983) defines organizations as political entities with powerful individuals and interest groups exerting influence on their strategies. He stresses that either powerful or not, all individuals (managers and employees) have influence on organizational strategy at certain level. The argument that the level of influence is proportional to the power of the individual does not necessarily mean that the powerless (actually low-power) individuals do not have any influence on organizational strategy at all. The influence level of low-power employees might not be significant but it is not negligible either. The proposed study is intended to provide a vectorial model for the strategic assessment of all individuals either powerful or not.

1.2 Description of the Research

The proposed research will provide a set of evaluation tools for answering the following questions.

1. What is the *strategic direction* and *strategic magnitude* of the organization? Or in other words, what is the organizational *strategic vector*?
2. How are the *strategic direction* and *strategic magnitude* of the organization measured? Or in other words, how is the organizational *strategic vector* measured?
3. What are the existing *strategic problems* in terms of s*trategic deviation, strategic deficiency* and *structural anomalies*?
4. What are the *strategic vectors of individuals, groups, divisions, etc.* and what is their contribution to the organizational vector?

1.2.1 Purpose of the Research

The purpose of this study is to develop an empirical strategy model to cover multiple areas of interest in strategy field and fulfill various kinds of requirements related to strategic management.

One of the objectives of this study is to provide a set of tools for measuring and displaying organizational strategic status. The purpose of the research is not only to measure and expose the overall strategic status of the organization but also the strategic aspects of individuals.

The study also is hoped to provide a strategic performance evaluation tool where the measured and pre-determined (or aimed) strategic statuses of the organization are compared for the determination of strategic deficiency and strategic deviation.

Finally, the study is also intended to provide a rational model for formulating strategic problems. Model is supposed to include user friendly graphics to display the strategic status of an organization. Graphical displays will not only demonstrate the strategic status but also make it easier for the managers and/or researchers to diagnose strategic problems accurately.

1.2.2 Scope of the Study

In this study, the research will be focused both on the theoretical and implementation aspects of SVM.

Theoretical aspect of SVM aims to serve to the strategy scholars, because, it proposes a new, empirical and holistic approach for understanding organizational strategies and attempts to illuminate the dusty atmosphere of strategic problems in organizations. The model also establishes a measurement tool for the evaluation of strategic performance.

Application aspect of SVM aims to serve top managers and strategy makers of organizations because it proposes a set of tools for strategic performance evaluation, for strategic status determination, and for the diagnosis of strategic problems. This study deems to provide necessary information for managers or strategy makers to do their tasks successfully.

1.2.3 Structure of the Thesis

Literature Review including comprehensive analysis of existing approaches will be discussed in Chapter 2. Proposed model – The Strategy Vector Model (SVM) – will be introduced in Chapter 3. Research methodologies, questionnaires developed for the measurement of individual vectors and power distance parameters, and the results of the pilot SVM study will be evaluated and examined in Chapter 4. Chapter 5 includes the empirical study of the proposed model and analyses the results. Contributions of the research, possible application fields in the future and research outcomes will be discussed in Chapter 6.

1.2.4 Definitions

Individual

In this research the individual refers to any member of an organization.

Strategy

Strategy is set of long term plans of action designed to achieve organizational goals.

Strategic management

Strategic management is the process of specifying an organization's objectives, developing policies and plans to achieve these objectives, and allocating resources so as to implement the plans. It is the highest level of managerial activity, usually performed by the company's top management.

Strategic problems

Strategic problems refer to unresolved or undesired situations, conditions, issues, or statuses that are directly related to the organizational strategies.

Leader

In this research leader is accepted as the person who is at the top of an organization and expected to own the following characteristics: *exerting influence*, *motivating and inspiring*, *helping others realize their potential*, *leading by example*, *selflessness* and *making a difference*.

Lowest level employee

This term is often used to refer to entry-level and/or first-line employees who do not have employees reporting to them.

Hierarchy

A hierarchy is a system of ranking and organizing things or people, where each element of the system (except for the top element) is subordinate to a single other element.

Power

Sociologists usually define power as the ability to impose one's will on others, even if those others resist in some way.

"By power is meant that opportunity existing within a social [relationship] which permits one to carry out one's own will even against resistance and regardless of the basis on which this opportunity rests." (Weber, 1962, p.92)

Power is the ability to get someone to do something they may or may not want to do. Through the use of or the application of coercion, persuasion, manipulation and negotiation, power is used to influence the system.

Politics

Politics is a process by which collective decisions are made within groups. Politics may also be defined as the way of using power in organizations.

Authority

Authority is the right to enforce laws, to exact obedience, to command, to determine, or to judge.

1.3 Methodology

As stated above, the aim of the SVM is to determine the resultant organizational vector or in other words overall *strategic direction* and *strategic magnitude* of the organization. The process is based on an inductive approach and suggest to measure the vectors of individuals first and than calculate the resultant vector by adding all measured individual vectors.

For the measurement of the individual vectors a carefully designed questionnaire of 72 questions is used to measure *strategy direction*, *strategy magnitude,* and *power difference* parameters.

Resultant vectors are calculated by summing all obtained individual vectors. For further analysis or better understanding the resultant vectors of organizational departments and divisions are be calculated.

For the validity check of the proposed model three organizations are selected for the pilot study. SVM is applied to the selected organizations and results are used not only for the calculation of the resultant vectors of the organization but also for the evaluation of the validity and reliability of the proposed vectorial approach by comparing the obtained results with the expectations of the researcher and observations of the members of the selected organizations.

Strategic deviation and *strategic deficiency* are calculated by comparing aimed and measured *strategic directions* and *strategic magnitudes* respectively.

As a general rule in social research, different research problems require different research approaches (Singleton and Straits,1999). The present research design is based both on a exploratory and conclusive research. Exploratory, because the research aims to provide significant insight into the blurry atmosphere of strategic management. Conclusive, because it is meant to provide information that is useful in reaching conclusions.

Although most researchers do either quantitative or qualitative research work, some researchers have suggested combining one or more research methods in one study (called triangulation) (Gable,1994, Kaplan and Duchon,1988, Lee,1991, Mingers,2001, Ragin,1987, Myers,1997). Triangular approach – combination of qualitative and quantitative methods - is used in this research for the collection of data. Besides the questionnaire, different forms of data collection - such as interviews, analysis of formal and informal procedures, and observation for obtaining necessary information for the determination of organizational vector - will also be conducted in the study.

Quantitative approach is considered to be the best way to measure individual vectors and calculate the resultant vector because quantitative multivariate methods allow researchers to measure and control variables (Edwards, 1998).

Kaplan and Maxwell (1994) argue that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data are quantified. Using only quantitative approach faces a risk of failing to take account of the unique characteristics of individual cases (Edwards, 1998). Qualitative approach might be used not as a substitute but as a complementary for eliminating this risk..

The motivation for using qualitative approach comes from the fact that qualitative research methods are designed to help researchers understand people and the social and cultural contexts within which they live (Myers,1997). Hammersley (1990) suggests that qualitative research is essential for the discovery of the social world. It is also suggested that the researcher, guided by exploratory orientation, directly observes and participates in the natural setting (Bakir, 2001). Similarly, Blumer (1982) states that the best way to properly understand a phenomenon is to investigate it in the setting in which it occurs. This entails an in-depth examination of the practices, behaviors and beliefs of individuals or groups as they normally function in real life (Bakir, 2001). Gopinath and Hoffman (1995) stress the importance of incorporating practitioners' perspectives and input in implementing a field research. In brief, theory building requires observation (Montgomery, Wernerfelt, and Balarkrishnan, 1989). So does any strategy research and shall be validated in organizational settings (Seth and Zinkhan, 1991).

2 LITERATURE REVIEW

2.1 Introduction

Three decades ago Mintzberg (1972) emphasized the lack of empirical studies on strategy. He claimed that most of strategy theories were not based on research. Some scholars (Gupta and Lonial, 1998, Barney, 2002) emphasized similar concerns which proves that most of Mintzberg`s criticisms are still valid.

Mahoney (1993), introduced the premature agreement and the uniformity in the study of strategy as the main problem which eliminates the healthy tension essential for creativity and this same problem is likely to stunt rather than enhance empirical content (Cited in Michel and Chen, 2004). The author believes that a comprehensive literature review is essential to establish a healthy foundation for the empirical studies. Therefore, a comprehensive review of the existing literature on strategy is undertaken in this section to explicate the foundations for this study.

2.2 Organizational Strategy

The famous ancient fable of "the blind men and the elephant" might be used to describe the existing studies on strategy:

"*An elephant was brought to a group of blind men who had never encountered such an animal before. As each touched the animal with his hands, he announced his discoveries. The first blind man put out his hand and touched the side of the elephant. 'How smooth! An elephant is like a wall.' The second blind man put out his hand and touched the trunk of the elephant. 'How round! An elephant is like a snake.' The third blind man put out his hand and touched the tusk of the elephant. 'How sharp! An elephant is like a spear.' The fourth blind man put out his hand and touched the leg of the elephant. 'How tall! An elephant is like a tree.' The fifth blind man reached out his hand and touched the ear of the elephant. 'How wide! An elephant is like a fan.' The sixth blind man put out his hand and touched the tail of the elephant. 'How thin! An elephant is like a rope*.'" (Quigley, 1959, p.2-6)

None of the discoveries that the blind men made about the nature of the elephant were absolute truths, nor were they false. Mintzberg, Ahlstrand, and Lampel (2000) define all strategy researchers as blind men and the strategy process as our elephant.

Mintzberg (1972) stresses that although strategy is defined in various ways there is always a common thread. In game theory, for example, strategy is a set of rules that governs all moves, and to management theorists strategy is often defined as a conscious plan to achieve specific ends. According to Mintzberg (1979), all such definitions treat strategy as an explicit set of guidelines developed in advance of the taking of specific decisions. He himself defines strategy as "*a pattern in a stream of significant decisions*" .

Ansoff defines strategy as a set of decision-making rules to guide organizational behavior. He sees "objectives" as representing the end that the firm is seeking to attain and "strategy" as the means to this end (cited in Bakir, 2001). Strategy is also defined as the "*determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals* (Chandler, 1962, p.13)

Strategy involves the matching or the art of reconciling the various components of the strategy mix (Andrews, 1971). According to this view, strategy could be defined as the pattern of matching the different elements – some within the organizational boundaries (competences and resources) and others dealing with the environment (opportunities and threats) (Venkatraman and Camillus, 1984).

Miles and Snow (1984, 1994) stress two main tasks for managers. First is to develop and utilize a strategy that aligns the organization's capabilities with the opportunities and constraints present in its environment. Second is to arrange resources internally to support the alignment. Both require clear understanding of organizational status in terms of strategy.

According to Porter, strategy is the creation of a unique and valuable position, involving a different set of activities (1996).

Levy et al. (2001) define strategy as an organizational process which has significant political ramifications within organizations and the broader society. They introduce strategy as a set of practices and discourses which promotes instrumental rationality, reproduces hierarchical

relations of power and systematically privileges the interests and viewpoints of particular groups.

Friga et al. (2003) introduce the development of a vision of the end result - or setting specific goals for a particular institution - as the first element of the strategy. They try to highlight the changes in the strategy phenomenon in graduate management education and new business schools.

Some scientists believe that to be able to understand what a science – in our case it is strategy – is, you should look first to what practitioners do (Geertz, 1973, Whittington, 2003). According to them, the more we study what strategists do the better we understand what strategy is.

Mintzberg categorizes strategy definitions in five groups (1987), which are also called as "Five P's for strategy". These are (As cited in Luke, 2004):

1. **Strategy as a plan:** a guide or course of action into the future.
2. **Strategy as a pattern:** consistency in behavior over time.
3. **Strategy as a position:** determination of particular products in particular markets.
4. **Strategy as a perspective:** an organization's way of doing things.
5. **Strategy as a ploy:** a specific maneuver intended to outwit an opponent or competitor.

Some of the strategy definitions are summarized in the following table (based on Luke, 2004).

Table 1 Strategy Definitions

	Strategy Definition
Chandler (1962)	Determinator of the basic long-run goals.
Ansoff (1965)	Rule for making decisions determined by product/market scope.
Gluck (1976)	Unified, comprehensive, and integrated plan.
Ohmae (1983)	What business strategy is all about is, in a word, competitive advantage.
Mintzberg (1987)	Plan...ploy...pattern...position...perspective.
Porter (1980ab)	Positioning a business to maximize the value of capabilities to distinguish it from its competitors.
Hax (1990)	Pattern of decisions an organization makes.

2.2.1 Main Contributions

Strategic management - and strategy - as a discipline, originated in the 1950s and 60s. Neumann and Morgenstern were the first scholars to develop the concept of business strategy. They applied the tools of game theory to model interactions among small numbers of firms (cited in Levy, Alvesson and Willmott, 2001).

Although there were numerous early contributors to the literature, the most influential pioneers were Alfred Chandler, Philip Selznick, Igor Ansoff, and Peter Drucker. Chandler (1962) emphasized the importance of long term perspective in organizations. According to him strategy was necessary to give a company structure, direction, and focus.

Selznick (1957) introduced a new idea which shaped the foundations of what we now call SWOT analysis (developed by Learned, Andrews and others at the Harvard Business General Management School). The idea was based on matching the organization's internal factors with external environmental circumstances.

Ansoff (1962) built on Chandler's work by adding a range of strategic concepts and inventing a whole new vocabulary. He developed a strategy grid that compared market penetration

strategies, market development strategies and horizontal and vertical integration and diversification strategies. Ansoff introduced the concept of "gap analysis" which was based first on the identification of the gap between where we currently are and where we would like to be. And then developed what he called "gap reducing actions".

Ansoff (1962) also tried to provide coherence to strategy as a field of scholarly study. He viewed strategy as the necessary extension of managerial control from the internal to the external environment (Levy, Alvesson and Willmott, 2001)

Peter Drucker has many contributions to strategy field. Firstly, he stressed the importance of objectives and developed his famous theory of **management by objectives** (MBO). His second seminal contribution was in predicting the importance of intellectual capital. In his classic work, *The Age of Discontinuity,* Drucker (1968) coined the phrases "knowledge society" and "knowledge worker" to explain the concept of intellectual capital.

By 70s, the main elements of strategic management theory was listed as follows (Chaffee, 1985):

1. Strategic management involves adapting the organization to its business environment.
2. Strategic management is fluid and complex.
3. Strategic management affects the entire organization by providing direction.
4. Strategic management involves both strategy formation (Chaffee called it content) and also strategy implementation (Chaffee called it process).
5. Strategic management is partially planned and partially unplanned.
6. Strategic management is done at several levels: overall corporate strategy, and individual business strategies.
7. Strategic management involves both conceptual and analytical thought processes.

Authors comment: Individual business strategies do not indicate the strategies of low level employees but individuals of top management.

Pascale and Athos (1981) introduced seven aspects of Japanese management techniques to explain their success: Strategy, Structure, Systems, Skills, Staff, Style, and Subordinate goals. American companies were excelled in the first three factors (hard factors) but the remaining

four factors were called soft factors and were not well understood (Wickens, 1995). Soft factors of Japanese management resemble the SVM approach which takes into consideration the contribution of individuals on organizational strategy and performance.

Hamel and Prahalad (1989) lay stress upon the *strategic direction* which implies a particular point of view about the long-term market for competitive position that a firm hopes to build over the coming decade or so. They emphasized the involvement of low level organizational teams in strategy development and building a common, broad-based model of the future. They claimed that small groups are isolated, and lose touch with reality (Hamel and Prahalad, 1994).

Hamel and Prahalad (1989) also declared that strategy needs to be more active and interactive. Dave Packard and Bill Hewlett devised an active management style that they called **Management by Walking Around** (MBWA) which was later popularized in a book by Peters and Austin (1985). According to MBWA, managers are supposed to spend most of their days visiting employees, customers, and suppliers. MBWA does not recognize individuals as strategy actors but stress the importance of communicating with individuals. Although not formalized, this direct contact with key people will provide information about strategic vectors of those visited individuals.

As being one of the most influential strategist of the decade, Porter introduced many new concepts including; 5-forces analysis (Porter, 1979), generic strategies (Porter,1980b, 1987, 1996, Porter and Millar, 2001), the value chain (Porter, 1985), strategic groups (Porter, 1998), and clusters (Porter, 1998).

In 5-forces analysis he identifies the forces that shape a firm's strategic environment. Porter's generic strategies detail the interaction between **cost minimalization strategies**, **product differentiation strategies**, and **market focus strategies**. His model was criticized for lacking specificity, lacking flexibility, and being limited (Downes, 1997, Foss 1996; Hill and Deeds 1996; Sharp and Dawes 1994; Miller and Dess 1993; Bowman 1992). In particular, Millar (1992) questions the notion of being "caught in the middle". He claims that there is a viable middle ground between strategies.

Porter (1979, 1980ab, and 1985) also challenged managers to see their industry in terms of a value chain. According to Porter, every operation should be examined in terms of what value it adds in the eyes of the final customer.

2.2.2 Strategy Typologies

Strategic typologies which might be called as theories of different strategy types (Smith, Guthrie, and Chen, 1986), has emerged as an important research area in strategic management (Mintzberg, 1973; Miles and Snow, 1978; Porter, 1980a; Conant, Mokwa and Varadarajan, 1990)

Miles and Snow (1978) established a research on the strategies that organizations employ in solving their entrepreneurial, engineering, and administrative problems (Miles et al., 1978). Although similar typologies of various aspects of organizational behavior (Anderson and Frank, 1975, Ansoff, 1962, Rogers, 1971, Segal, 1974) were already available in the literature, they developed their own famous **strategic typology** and introduced four strategic types of organizations: Defenders, Analyzers, Prospector, and Reactors (Miles and Snow, 1978).

According to their study (Miles et al., 1978, p.20-23):

The defender *deliberately enacts and maintains an environment for which a stable form of organization is appropriate. Stability is chiefly achieved by the Defender's definition of, and solution to, its entrepreneurial problem.*

In many ways, ***Prospectors*** *respond to their environment in a manner that is almost the opposite of the defender. The prospector enacts an environment that is more dynamic than those of other types of organizations within the same industry.*

The Analyzer *is a unique combination of the prospector and defender types and represents a viable alternative to these other alternatives. A true analyzer is an organization that attempts to minimize risk while maximizing the opportunity for profit. Analyzer combines the strengths of both the Prospector and the defender.*

The Reactor *exhibits a pattern of adjustment to its environment that is both inconsistent and unstable; this type lacks a set of response mechanisms which it can consistently put into effect when faced with a changing environment.*

Miles and Snow (1978) strategy types where arrayed along a continuum, with defender at one end and prospector at the other (Cited in Golden, 1997). In contrast, Fox's (1992) measure was based on four 7-points scales that indicated the extent to which each of the banks exhibit characteristics of each of the Miles and Snow (1978) four strategy types (Cited in Golden, 1997).

Miles et al. (1978) claimed that three of the strategic types of organizations are essential: defenders, analyzers, and prospectors. The fourth type of organization encountered in their study which is called as reactor, is basically considered as a form of strategic "failure" in that inconsistencies exist among its strategy, technology, structure, and process (Miles et al., 1978). This classification is demonstrated in the Figure.

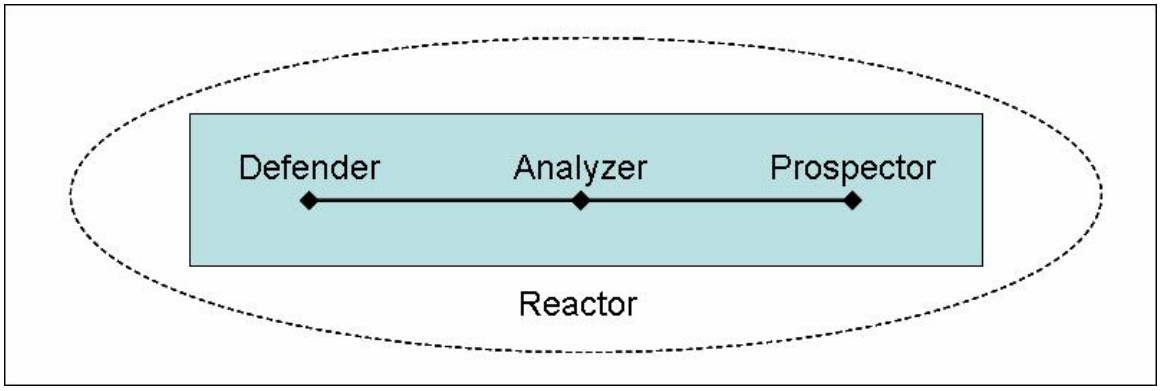


Figure 1 Miles and Snow's Strategy Typology (Derived from Miles and Snow, 1978 and Miles et al., 1978)

Another strategy typology that is popular in the literature is known as "Porter's model". According to Porter's framework, a business can maximize performance either by striving to be the low cost producer in an industry or by differentiating its line of products or services from those of other businesses; either of these two approaches can be accompanied by a focus

of organizational efforts on a given segment of the market (Parnell, 2002). Porter's strategy typology is demonstrated in Figure 2.

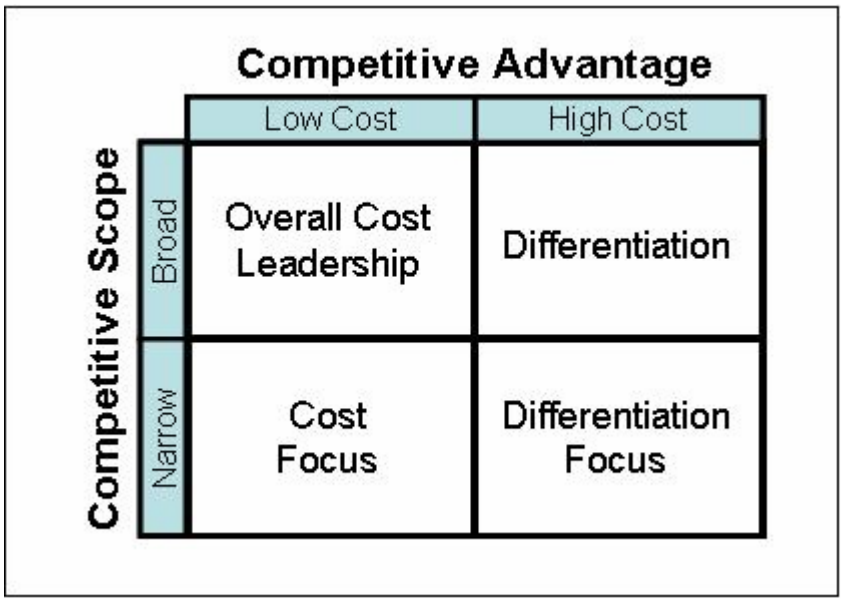


Figure 2 Porter's Strategy Typology (Adopted from Porter 1980ab)

Robinson, McDougall and Herron (1988) also develop their own strategy typology (which actually resembles the strategy typology of Porter, 1980) and they claimed that venture strategies can be divided along two basic strategic dimensions: growth orientation and product/market focus. They also suggest a simple, basic framework that provides a way to integrate and organize past and future new venture strategy research which is demonstrated in Figure 3.

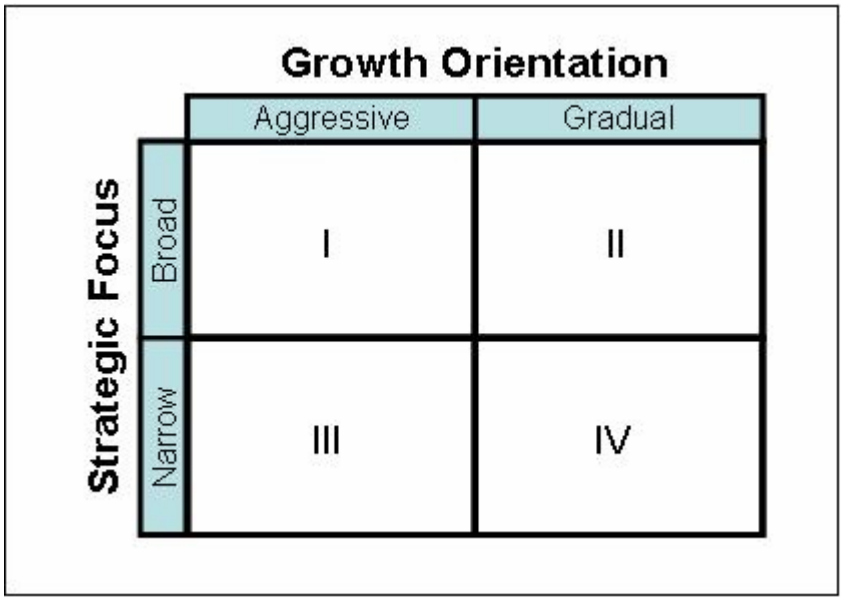


Figure 3 New Venture Generic Strategy Framework (Adopted from Robinson, McDougall, and Herron, 1988)

Miles and Snow (1978) classification of defenders, reactors, analyzers, and prospectors appears to be a classification of firms, while Porter's (1980) differentiation, focus and cost leadership may be seen as a classification of strategies (Pecotich, Purdie, and Hattie, 2003).

2.2.3 Strategy Actors

There is broad belief that (corporate and competitive) strategy is formulated by top management (Bakir, 2001, Zuboff, 1988, Zaleznik, 1977) and is a type of "game" managers play (Stacey, 1996). Some other researchers believed that functional or operational strategy might be formulated with the help of middle line managers (Drucker, 1954). Heinen and Jacobson (1976) proposed to build specific task groups, not for strategy formulation but for strategy implementation. Mintzberg (1994), contrary with the common belief, claims that the most important strategies in organizations emerge without the intention or sometimes even the awareness of top managers.

Employees as being part of internal company resources are widely accepted as key factors in strategy (Hammer and Champy, 1993, Barney, 1991). Cloete (1996) claims that strategy

implementation will almost certainly fail if it lacks the support of employees. But non of these approaches sees employees as strategy manufacturers.

Some scholars (Levy, Alvesson and Willmott, 2001, Deetz, 1992, Alvesson and Deetz, 1996, Fairclough, 1992, Habermas, 1984) define management as a set of practices and discourses closely related to the asymmetrical power relations in an organization. They emphasize that asymmetrical power relations might and will privilege the interests and viewpoints of some groups while silencing others. What they call "asymmetric power" is actually the vectors of individuals which are in the scope of this research.

Based on past research, Henderson and Venkatraman (1990, 1992) classify strategies into three broad categories (cited in Jouirou and Kalika, 2004):

1. **Corporate strategy:** Concern interrelationship among businesses.
2. **Business strategy:** Focusing on deploying a strategy at a unit or product level that maximizes the organization unit or product's comparative advantage to best compete in the marketplace.
3. **Functional strategy**: Reflecting efficient allocation of resources allocated to the particular firms.

Mitchell also (2005) introduces three hierarchical levels of strategy:

1. **Corporate Strategy:** Roughly, what business(es) should we be in and how shall we fundamentally connect those business segments.
2. **Competitive (or Business) Strategy:** How the company or its strategic business units (SBU's) will compete successfully within each business segment.
3. **Functional or Operational Strategy:** How the company and its units will carry out their functional activities to maximize resource productivity (be efficient) and to develop distinctive competencies.

Parsons (1960) introduced three distinct levels of organizational structure. At the bottom is the technical level, where the actual product is manufactured and which is composed of low level employees such as workers in factories, teachers in classrooms, scientists in labs, etc.. Above this is the managerial level, who mediate between the organization and the task environment

and administer the internal affairs. At the top is the institutional level, whose function is to relate the organization to the larger society.

Various experiments and other empirical studies have suggested that increased worker participation in decision making increases organizational effectiveness, while positively affecting satisfaction, trust, involvement, and other work related attitudes (cited in Hrebiniak, 1974).

2.2.4 Strategy Schools

It should be recognized that strategy schools are not mutually exclusive and each of them has had a contribution on the foundations of strategy field.

Mintzberg, Ahlstrand, and Lampel (1998) introduced ten schools of thought in strategy field. These schools might be consolidated in three main categories:

"The first three schools are prescriptive in nature - more concerned with how strategies should be formulated than with how they necessarily do form. ... The six schools that follow consider specific aspects of the process of strategy formation, and have been concerned less with prescribing ideal strategic behavior than with describing how strategies do, in fact, get made. ... Final group contains but one school. ... People in this school, in seeking to be integrative, cluster the various elements of ... the strategy-making process." (p.5-6)

This classification of strategy schools is summarized in Table 2.

Table 2 Strategy Schools of Thought (Adopted from Mintzberg, 1990)

Strategy School	View of the Strategy Process	Central Actors	Best situation
Prescriptive Schools			
Design	Conceptual	"Architect" (usually CEO)	Simple, stable, predictable, integrated
Planning	Formal	Planners	Simple, stable, predictable, ideally controllable
Positioning	Analytical	Analysts	Simple, stable, predictable and controllable, mature and structured
Descriptive Schools			
Entrepreneurial	Visionary	Leader	Dynamic but simple
Cognitive	Mental	Brain	Individual
Learning	Emergent	Whoever can learn	Complex, dynamic, unpredictable, ideally novel
Political	Power	Whoever has power	Divisive, malevolent (micro), controllable (macro)
Cultural	Ideological	Collectivity	Passive
Environmental	Passive	Environment	When environment has strong effects
Integrative Schools			
Configurational	Episodic	Everyone	Any

2.2.4.1 The Design School

This school sees strategic management as a process of accomplishing a match between the internal capabilities (strengths and weaknesses) and external possibilities (threats and opportunities) of an organization. Common approach among the members of this school is that strategy formation is a conceptual and conscious process of thought where the responsibility for that consciousness must rest with the chief executive officer (Prigogine,1984). Senior management is supposed to formulate clear and simple strategies (Prigogine,1984, Kemp and Ashish, 2005) and communicate them to the staff so that everyone can understand and implement (Mintzberg, Ahlstrand, and Lampel, 1998).

According to the design school, the strategy systems shall be regarded as a true design process, which is complete when strategies appear fully formulated and only after these unique, full blown, explicit, and simple strategies are fully formulated can they be implemented (Kemp and Ashish, 2005).

2.2.4.2 The Planning School

This school reflects most of the design school's assumptions except that the strategic management is not only cerebral but also formal.

The planning school suggests that the strategy process shall be decomposable into distinct steps, delineated by checklists, and supported by some functional techniques related to objectives, budgets, programs, and operating plans. This caused or enabled staff planners to replace senior managers who were supposed to be the key players in the process (Mintzberg, Ahlstrand, and Lampel, 1998).

The planning school argues that strategies emerge from the process full-blown, to be explicated so that they can then be implemented through detailed attention to objectives, budgets, programs, and operating plans of various kinds (Prigogine,1984).

2.2.4.3 The Positioning School

This school sees strategy as generic positions selected through formalized analysis of industry situations (Mintzberg, Ahlstrand, and Lampel, 1998). The positioning school, heavily

influenced by the ideas of Michael Porter, which stresses that strategy depends on the positioning of the firm in the market and within its industry (Porter, 1979, 1980ab, 1985, 1987, 1991, 1998, 2001).

The positioning school argues that the strategy formation process is an analytical selection based upon calculation. Analysts play a major role in strategy process, feeding the results of their calculations to managers, who officially control the choices. Strategies thus emerge from the process full blown and are then articulated and implemented; thus market structure dictates positional strategies that dictate other strategies that dictate organizational structures (including systems and plans) that determine performance (Prigogine,1984).

2.2.4.4 The Entrepreneurial School

This school emphasizes the central role played by the leader and describes strategy systems as processes existing mainly in the mind of the leader (Kemp and Ashish, 2005). The approaches of the entrepreneurial school, shifted the strategies from precise designs, plans, or positions to vague visions, or perspectives (Mintzberg, Ahlstrand, and Lampel, 1998).

Strategies are believed to be specifically about a sense of long-term direction, a vision of the enterprise future. The processes of the strategy system are thereby semiconscious at best, firmly rooted in the experience and intuition of the leader, whether he or she actually conceives the strategy or adopt it from others and internalize it in his or her own behavior. Entrepreneurial strategy systems are both deliberate and emergent, in the sense that the overall vision and direction is of deliberate nature, whereas it is emergent on how the details of the vision unfold (Kemp and Ashish, 2005).

The enterprise is likewise typically a simple structure responsive to the leaders directives, generally found among start-ups, companies owned and managed by a single individual, or turnarounds in large established enterprises. Many of the procedures and power relationships are suspended to allow the visionary leader considerable latitude for maneuvering (Kemp and Ashish, 2005).

2.2.4.5 The Cognitive School

This school looks inwards into the minds of strategists (Mintzberg, Ahlstrand, and Lampel, 1998). According to the cognitive school, with its main roots in psychology, strategy systems are described to be cognitive processes that take place in the mind of the strategist. Strategies thus emerge as perspectives - in the form of concepts, maps, schemas, and frames - that shape how people deal with inputs from the environment.

As concepts, strategies are difficult to attain in the first place, considerably less than optimal when actually attained, and subsequently difficult to change when no longer viable. In this regard various forms of cognition have an influence on how strategy systems are said to function, such cognition as confusion, cognition as information processing, cognition as mapping, and cognition as concept attainment (Kemp and Ashish, 2005).

2.2.4.6 The Learning School

This school sees strategy as an emergent process (Mintzberg, Ahlstrand, and Lampel, 1998). According to the learning school, also with its main roots in psychology, strategy systems are described to be processes of learning over time, in which formulation and implementation activities are intertwined and indistinguishable in nature. This is due mainly to the complex and unpredictable nature of enterprises and their environments.

Through the diffusion processes of knowledge bases, which are necessary for strategy systems, deliberate control is excluded. Whereas the leader must learn too, and sometimes can be the main learner, more commonly it is the collective system of the enterprise that learns. This implies that there are many potential strategies in most enterprises, at any point in time.

The learning is a process proceeding in emergent fashion, through behavior that stimulates thinking retrospectively, so that sense can be made of action. Thereby, the role of leadership becomes not to preconceive deliberate strategies, but to manage the process of strategic learning, from which novel strategies can emerge. Accordingly, strategies appear first as patterns out of the past, only later, perhaps, as plans for the future, and ultimately, as perspectives to guide overall behavior (Kemp and Ashish, 2005).

2.2.4.7 The Power School

This school views strategy as a phenomenon emerging out of power games within the organization and outside it. This school is focused on strategy making rooted in power, in two senses. Micro power sees the development of strategies within the organization as essentially political, a process involving bargaining, persuasion, and confrontation among inside actors. Macro power takes the organization as an entity that uses its power over others and among its partners in alliances, joint ventures, and other network relationships to negotiate "collective" strategies in its interests (Mintzberg, Ahlstrand, and Lampel, 1998).

According to the power school, with its roots in politicology, strategy systems are described to be mainly shaped by power and politics, whether as a process inside the enterprise itself or as the behavior of the enterprise as a whole within its external environment. Strategies that may result from such processes tend to be emergent in nature, and take the forms of positions and ploys more than perspectives.

On the one hand, parts of the power school (micro power) see strategy making as the interplay, through persuasion, bargaining, and sometimes through direct confrontation, in the form of political games, among parochial interests and shifting coalitions, with none dominant for any significant period of time. On the other hand, other parts of power school (macro power) see the enterprise as promoting its own welfare by controlling or cooperating with other enterprise, through the use of strategic maneuvering as well as collective strategies in various kinds of networks and alliances (Kemp and Ashish, 2005).

2.2.4.8 The Cultural School

According to this school, strategy formation is a process rooted in the social force of culture. As opposite to the power school, this school focuses on self-interest and fragmentation, the cultural school focuses on common interest and integration. Strategy formation is viewed as a social process rooted in culture. The theory concentrates on the influence of culture in discouraging significant strategic change (Mintzberg, Ahlstrand, and Lampel, 1998).

According to the cultural school, with its roots in anthropology, strategy systems are described to be processes of social interaction, based on the beliefs and understandings shared by the

members of an enterprise. An individual acquires these beliefs through a process of acculturation, or socialization, which is largely tacit and nonverbal, although sometimes reinforced by a more informal indoctrination. The members of an enterprise can, therefore, only partially describe the beliefs that underpin their culture, while the origins and explanations may remain obscure. As a result, strategy takes the form of perspective above all, more than positions, rooted in the collective intentions (not necessarily explicated) and reflected in the patterns by which the deeply embedded resources, or capabilities, of the enterprise are protected and used for competitive advantage. Strategy is therefore best described as deliberate (even if not fully conscious).

Culture and especially ideology do not encourage strategic change so much as the perpetuation of existing strategy. At best, they tend to promote shifts in position within the enterprise' overall strategic perspective (Kemp and Ashish, 2005).

2.2.4.9 The Environmental School

This school believes that a firm's strategy depends on events in the environment and the company's reaction to them (Mintzberg, Ahlstrand, and Lampel, 1998). Perhaps not strictly strategic management, if one takes that term as concerned with how organizations use their degrees of freedom to create strategy, the environmental school nevertheless deserves attention for the light it throws on the demands of the environment. Among its most noticeable theories is the "contingency theory", that considers what responses are expected of organizations that face particular environmental conditions, and "population ecology", writings that claim severe limits to strategic choice.

According to the environmental school with its roots in biology, strategy systems are described to be mainly about responding in a natural manner with the corporate external environment. The external context, presents itself to the enterprise as a set of general forces, and is thereby the central factor in the strategy making processes. The enterprise must respond to these external forces, because otherwise it would be selected out. Leadership, in this regard, becomes a passive element for the purposes of reading the environment and ensuring proper adaptation by the enterprise. In the long run, enterprises end up clustering together in distinct

ecological-type niches, positions where they remain until resources become scarce or conditions too hostile.(Kemp and Ashish, 2005).

2.2.4.10 The Configuration School

This school views strategy as a process of transforming the organization. One side of this school, more academic and descriptive, sees organization as configuration - coherent clusters of characteristics and behaviors - and so serves as one way to integrate the claims of the other schools: each configuration, in effect, in its own place, planning for example, in machine-type organizations under conditions of relative stability, entrepreneurship under more dynamic configurations of start-up and turnaround.

But if organizations can be described by such states, then change must be described as rather dramatic transformation - the leap from one state to another. And so, a literature and practice of transformation - more prescriptive and practitioner oriented (and consultant promoted) – developed as the other side of the coin. These two very different sets of literature and practice nevertheless complement one another and so belong to the same school (Mintzberg, Ahlstrand, and Lampel, 1998).

Elfring and Volberda (2001) stress that Mintzberg`s classification of strategy schools points to a lack of a coherent body of knowledge in the field of strategy theory:

"*each of the nine schools represents a specific angle or approach to strategy ... Mintzberg (however), shows that each school of thought is concerned with a certain aspect of the total picture, ignoring the other aspects along the way. If the contributions, shortcomings, assumptions and context of the diverse schools of thought are made more explicit, the fragmentation within strategic management is made painfully obvious*." (p.8)

Another approach in classifying strategy research is based on the focus and claims that two school of thoughts exist: strategy content school and strategy process school (Jemison, 1981; Rajagopalan and Spreitzer, 1997).

2.2.5 Strategy Fit

To be able to understand the meaning of "strategic fit" it might be convenient to focus on the term "fit" first. Venkatraman (1989) defines fit from six different perspectives (as cited in Kefi and Kalika, 2005):

1. **Fit as matching**: This is a theoretically defined match between two related variables (Venkatraman, 1989). Similarly, Van de Ven's and Drazin consider fit as the result of managerial choice to achieve congruence to organizational context (1985). Using this perspective, Chan et al. stressed that strategic alignment contributes to achieve higher levels of performance in organizations (1997).

2. **Fit as moderation (or interaction)**: Refers to conformance to a linear relationship of context and design (Van de Ven and Drazin, 1985). Here, the impact of a predictor variable (design variable) on a dependent variable (performance) is moderated by a third variable which might be called as context variable (Kefi and Kalika, 2005). Alignment or fit might be considered as the interaction between the moderator and the predictor (Shin, 2003).

3. **Fit as mediation:** Considers the perspective of the intervention between an antecedent variable and a consequent variable (Kefi and Kalika, 2005). The mediation perspective has been adopted in multiple empirical studies that assess the strategic alignment implications on organizational performance (Bergeron and Raymond, 1995; Teo and King, 1996).

4. **Fit as gestalt:** Is related to a systems perspective, in which fit is understood as an internal congruence of many contingencies and performance criteria (Kefi and Kalika, 2005). In this approach fit is represented in an interpretive rather than a functional approach (Shin, 2003). In cross-sectional empirical studies fit is not commonly used as gestalt (Kefi and Kalika, 2005).

5. **Fit as co-variation:** Represents internal consistency among related variables (Kefi and Kalika, 2005). Co-variation indicates the alignment among several considered independent variables (Venkatraman, 1989). Croteau et al. who used this approach

found that higher level of alignment implies higher level of organizational performance (2001).

6. **Fit as profile deviation**: Assumes the viability of profile specification for variable associated to a criterion variable (Kefi and Kalika, 2005). Fit represents the degree of adherence to a specified profile and the level of fit is expected to affect organizational performance (Shin, 2003). Sabherwal and Chan have used this approach and have figured out that alignment affects perceived business strategies, but only in certain organizations (2001).

Venkatraman and Prescott argue that the concept of the fit between the organization and its environment to improve organizational performance is used implicitly in early (especially contingency) studies and phrases such as congruent with, matched with, or contingent upon where used instead to express the organization–environment relationship (1990). Aldrich was the first scholar who explicitly states and popularizes this concept. He proposed that organizational forms must either fit their environmental niches or fail (1979).

By combining the approaches of various scholars (Henderson and Venkatraman, 1993; Luftman, 1996; Kefi and Kalika, 2005), strategy fit may be defined as the external relationship concerned with the harmonization of organizational strategies and other variables that are related to the performance of the organization. Venkatraman and Camillus describe three different types of strategic fit (1984):

1. Between strategy and environment.
2. Between strategy and structure.
3. Among the entire configuration of environment-strategy-structural variables.

Organizations that aim sustainable development and survival tend to establish strategic fit with dynamically changing business related parameters (internal and external environment). One way of doing this is the alignment of strategy which will be discussed in detail in the following section.

2.2.6 Alignment of Strategy

The term “alignment” is not new in management. Although there is no consensus on its definition between researchers (Kefi and Kalika, 2005), it has widely been used by some scholars (Parker et al., 1989, Keen, 1991, Henderson and Venkatraman, 1992, Venkatraman et al., 1993, Brown and Magill, 1994, Lee et al., 1995) for various reasons (Priem, 1992). For example, Burns and Stalker (1961) emphasize the importance of structural alignment; Duncan (1972) explains the alignment according to the external environment; and Porter (1980b) introduces business level strategy alignment.

Some scholars have emphasized the effect of environmental (both internal and external) factors on the organizational strategies (Tan and Tan, 2003; Gibbons and Ghearailt, 2003; Schulte, 2005) and the performance of the strategy (Li, Atuahene-Gima and Zhang, 2000). Whenever one of these parameters changes (significantly), the organization must align its strategy accordingly to be able to survive.

Our concern in this study is the alignment of strategy. Some may argue that “*strategic alignment*” has the same meaning with the term “*alignment of strategy*” but the author believes that these two expressions lay stress on different meanings.

Alignment of strategy is mainly about the alignment of organizational strategy according to the new organizational goals and/or (internal/external) environmental factors. In this case, the strategy of the organization changes (or is aligned) at certain level. Structure, organizational goals, HRM and marketing policies, etc. might also change according to the aligned strategy.

Strategic alignment on the other hand is mainly about the alignment of strategic organizational applications but not necessarily about the alignment of the organizational strategy. Organizations may align themselves to match their strategies. Certain types of alignments - which might be considered as strategic- may be necessary to ensure the validity of the existing organizational strategy without changing the actual organizational strategy.

It will be convenient to explain this discussion with an example. Imagine a company X operating in computer hardware industry and assume that the strategy of the company is “to be the leader of the market”. If a new and pretentious company enters the market and threatens the leadership of Company X than Company X has two alternatives:

- Company X might decide to keep its original strategy (to be market leader) and align its organizational parameters (structure, resource allocation, etc.) to handle the affects of new status. This action might be addressed as strategic alignments since alignments have strategic value although the organizational overall strategy stays as is.
- Another option for Company X is to revise its organizational strategy. For example Company X might observe that it has low chance to compete with the new entrant and it is much more beneficial (or less detrimental) to be a follower. Since this is a change (or alignment) in the organizational strategy it will be appropriate to call it alignment of the strategy (or *strategy alignment* but not *strategic alignment*).

Strategy content literature typically offers prescriptions when relationships are found between tangible organization outcomes and firm performance. Little attention is given to the link between intentions and outcomes (Priem, 1992).

The term "strategic alignment" is widely used to describe the concept of business strategy and IT strategy alignment (Henderson and Venkatraman, 1993; Luftman, 1996; Chan and Huff, 1993; Papp, 1995; Jouirou and Kalika, 2004). According to Papp, the strategic alignment is the appropriate use of IT in the integration and development of business strategies and corporate goals (1995). Some scholar used the "linkage" (Reich and Benbasat, 1996), "harmony" (Woolfe, 1993), "balance" (Henderson and Venkatraman, 1993), "coordination" (Lederer and Mendelow, 1986), and "fit" (Venkatraman, 1989) to describe the alignment between business and IT strategies.

Chan and Huff stress that organizations typically achieve "strategic alignment" by passing through three sequential levels (1993):

1. **The awareness level**: This level indicates that the firm has reached a level of awareness in recognising (and acting) upon the importance of having Information System (IS) more closely connected with the business and business strategies.
2. **Transition level** (Coined by the author)**:** This level includes the integration of operational business and IS plans and activities.

3. **Strategic alignment level:** This level concerns about the integration of IS with the organization's fundamental strategies and core competencies.

Alignment of strategy shall be implemented at all hierarchical levels of the organization. All levels of an organization have roles to play when manufacturing strategy changes. Leadership at the top has to challenge, cajole, or simply allow the rest of the organization to find new ways of deploying manufacturing. Top functional and staff managers have the power to get things moving in a new direction and are responsible for managing the change and the new strategy. Operating and support people-from order-entry to shipping- are the experts who make the new strategy work every day (Bennigson, 1996).

2.2.7 Strategic Alignment Maturity Levels

Miles and Snow (1984) emphasized that organizations must align (adjust) their strategies in response to environmental changes. However, the level of this alignment might not be the same in all organizations depending on their abilities and willingness. Similarly, the levels of ability and willingness to align organizational strategy in single organization might also change as time passes. The concept of strategic alignment maturity level is pointed out by Luftman (2000) who provides a comparable scale in terms of strategic alignment.

Luftman (2000) introduced five levels of strategic alignment designed for assessing the maturity level of strategic alignment related to IT. It may easily be applied to all kinds of strategic alignments.

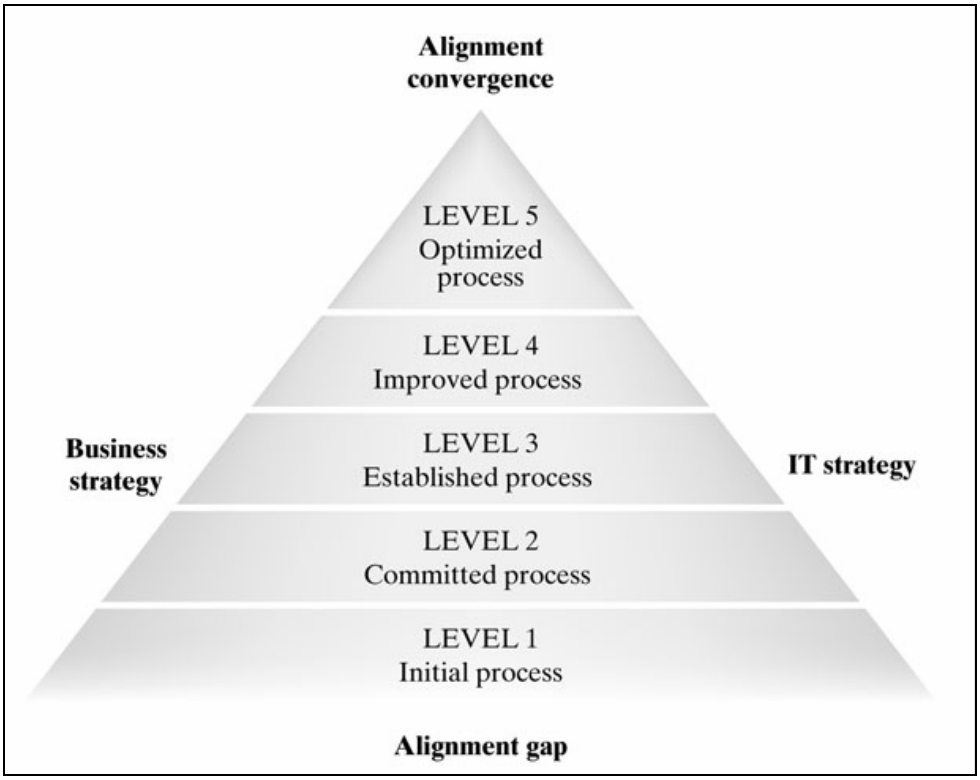


Figure 4 Levels of Strategic Alignment (Adopted from Luftman, 2000)

Lowest level of strategic alignment maturity is the **Initial Process Level**. In this level understanding of IT by business is low and investment in IT is underleveraged (Luftman, 2000).

In the second level, which is called as **Committed Process Level,** the organization is committed to begin process for Strategic Alignment Maturity and view IT as an asset to the organization. At this level strategic alignment is directed at local situations or functional organizations (Luftman, 2000).

In the third level (referred to as **Established Focused Process Level**) the organization concentrates on governance, processes, and communications toward specific business objectives; focuses on business processes that generate long-lasting competitive advantage and effectively communicates its vision and get "buy-in" from employees and management (Luftman, 2000).

Forth level is coined as **Improved/Managed Process Level**. In this level, the organization leverages IT assets on an enterprise-wide basis; focuses on driving business process enhancements to gain competitive advantage and views IT as an innovative and imaginative strategic contributor (Luftman, 2000).

In the fifth and highest level, the maturity level of strategic alignment is at its maximum level and business and IT strategies are integrated. This level is also known as **Optimized Process Level** (Luftman, 2000).

Luftman uses 6 Criteria that characterize levels of Strategic Alignment Model (2000, 2003).

1. Communications
2. Competency/value measurements
3. Governance
4. Partnerships
5. Scope and Architecture
6. Skills

These 6 criteria also include some sub-parameters. A comprehensive summary of parameters related strategic alignment and their status at all five levels of strategic maturity alignment are shown in the Table 2.

Table 3 Strategic Alignment Maturity Criteria Communications (Compiled from Luftman, 1984, 2000, 2003, 2005)

Alignment Maturity	**Level 1 Initial Process**	**Level 2 Committed Pro.**	**Level 3 Established Pro.**	**Level 4 Improved Pro.**	**Level 5 Optimized Pro.**
Understanding of business by IT	Minimum	Limited IT awareness	Senior and mid-management	Pushed down through org.	Pervasive
Understanding of IT by business	Minimum	Limited business awareness	Emerging business awareness	Business aware of potential	Pervasive
Inter/intra-org. learning	Causal, ad-hoc	Informal	Regular, clear	Unified, bonded	Strong and structured
Protocol rigidity	Command and control	Limited, relaxed	Emerging relaxed	Relaxed, informal	Informal
Knowledge sharing	Ad-hoc	Semi-structure	Structured	Institutionalized	Extra-enterprise
Liaison(s) breadth / effectiveness	None or ad-hoc	Limited tactical tech. based	Formalized	Bonded, effective at all internal levels	Extra-enterprise

Table 4 Strategic Alignment Maturity Criteria Competency/Value Measurements (Compiled from Luftman, 1984, 2000, 2003, 2005)

Alignment Maturity	**Level 1 Initial Process**	**Level 2 Committed Pro.**	**Level 3 Established Pro.**	**Level 4 Improved Pro.**	**Level 5 Optimized Pro.**
IT metrics	Technical	Cost efficiency	Traditional financial	Cost effectiveness	Extended to external partners
Business metrics	Ad-hoc	At the functional. Organization	Traditional financial	Customer-based	Extended to external partners
Balanced metrics	Ad-hoc unlinked	Unlinked	Emerging	Linked	Bus., part. and IT metrics
Service level agreements	Sporadically present	Technical at the functional level	Emerging	Enterprise-wide	Extended to external partners
Benchmarking	Not generally practiced	Informal	Emerging	Routinely performed	Routinely perf.ed with partners
Formal assessments / reviews	None	Some, typically for problems	Emerging formality	Formally performed	Routinely perf
Continuous imp.	None	Minimum	Emerging	Frequently	Routinely perf

Table 5 Strategic Alignment Maturity Criteria Governance (Compiled from Luftman, 1984, 2000, 2003, 2005)

Alignment Maturity	**Level 1 Initial Process**	**Level 2 Committed Pro.**	**Level 3 Established Pro.**	**Level 4 Improved Pro.**	**Level 5 Optimized Pro.**
Business strategic planning	Ad-hoc	Basic planning at the func. level	Some inter-organizational plan.	Managed across the enterprise	Integrated across and outside the ent.
IT strategic planning	Ad-hoc	Functional tactical planning	Focused planning	Managed across the enterprise	Integrated across and outside the ent.
Reporting / org. structure	Central/decentral	Central / decentralized	Structure central / decentralized	Federated	Federated
Budgetary control	Cost center	Cost center	Cost center	Investment center	Investment center
IT investment man.	Cost based	Cost based	Traditional	Cost effectiveness	Business value
Steering committee(s)	Not formal /regular	Periodic organized communication	Regular clear communication	Formal, effective committees	Partnership
Prioritization process	Reactive	Occasional responsive	Mostly responsive	Value add, responsive	Value added partner

Table 6 Strategic Alignment Maturity Criteria for Partnerships (Compiled from Luftman, 1984, 2000, 2003, 2005)

Alignment Maturity	**Level 1 Initial Process**	**Level 2 Committed Pro.**	**Level 3 Established Pro.**	**Level 4 Improved Pro.**	**Level 5 Optimized Pro.**
Bus. perception of IT	Perceived as cost of bus.	IT emerging as an asset	IT seen as an asset	IT seen as a driver, enabler	IT co-adapts with the business
Role of IT in str. bus. pln.	No seat at the business table	Business process enabler	Business process enabler	Business strategy driver, enabler	Co-adaptive with the business
Shared goals, risks, rew./pen.	IT takes risk with little reward	IT takes most of the risk with little rew.	Risk tolerant	Risk acceptance and rewards shared	Risk and rewards shared
IT prog. Man.	Ad-hoc	Standards defined	Standards adhered	Standards evolve	Cont. improvement
Relation./trust style	Conflict/minimum	Prim. transactional	Emerging	Valued service provider	Valued partnership
Business sponsor / champion	None	Limited at the functional org.	At the functional org.	At the HQ level	At the CEO level

Table 7 Strategic Alignment Maturity Criteria for Scope and Architecture (Compiled from Luftman, 1984, 2000, 2003, 2005)

Alignment Maturity	**Level 1 Initial Process**	**Level 2 Committed Pro.**	**Level 3 Established Pro.**	**Level 4 Improved Pro.**	**Level 5 Optimized Pro.**
Traditional, enabler	Traditional	Transaction	Transaction	Redefined scope	External scope
Standards articul.	None or ad-hoc	Standards defined	Enterprise standards	Enterprise standards	Inter-enterprise standards
Arch. Integration	No formal integ.	Early attempts	Strongly encouraged	Integrated	Evolve with partners
Arch. Transparency, flexibility	None	Limited	Emerging across organization	Emerging across organization	Across the infrastructure

Table 8 Strategic Alignment Maturity Criteria for Skills (Compiled from Luftman, 1984, 2000, 2003, 2005)

Alignment Maturity	**Level 1 Initial Process**	**Level 2 Committed Pro.**	**Level 3 Established Pro.**	**Level 4 Improved Pro.**	**Level 5 Optimized Pro.**
Innovation, entrep.	Discouraged	Dependent on functional org.	Strongly encouraged	Enterprise, partners and IT managers	The norm
Locus of power	In the business	Functional org.	Across the organization	Across the organization	All executives
Management style	Command and cont.	Results consensus based	IT advises	Profit/value based	Relationship based
Change readiness	Resistant to change	Dependent on functional org.	Programs in place at func. Level	High focused	High, focused
Career crossover	None	Minimum	Regularly	Across the functional org.	Across the enterprise
Education	None	Minimum	Formal programs	At the func. org.	Across the enter.
Interpersonal / Environment	Minimum / Minimum	Prim. transactional environment	Trust and confidence starts	Achieved among IT and bus. / Valued serv. provider	Extended to customers and partners / Valued partnership
Attract and retain best talent	No program	Technology focused	Technology and business focus	Formal program for hiring and retaining	Effective program for hiring and retaining

Luftman provides a useful figure to summarize the strategic alignment maturity assessment (2005).

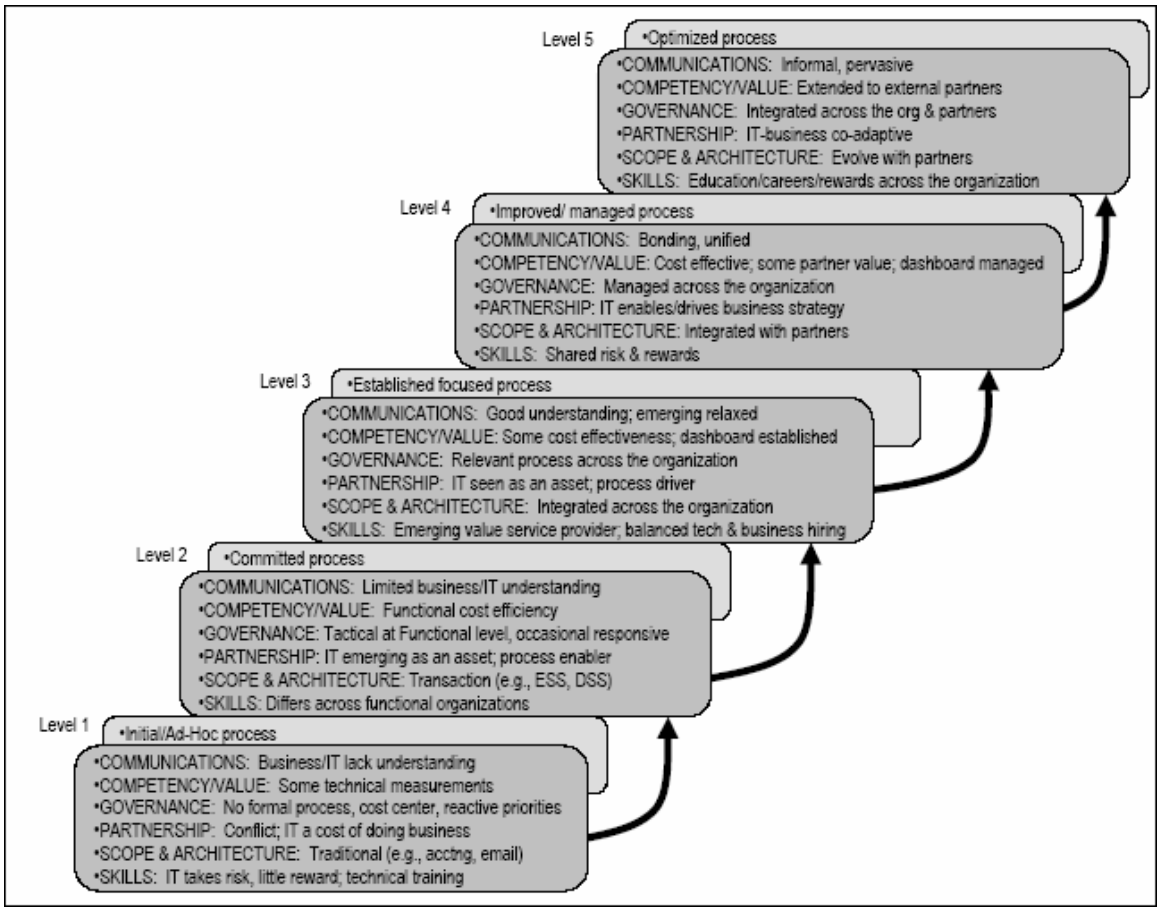


Figure 5 Strategic Alignment Maturity Assessment Summary (Luftman, 2005)

2.2.8 Strategy as Ideology

Collins and Porras (1994) introduced "Core ideology" as the key factor for sustainable organizational success and as a core set of organizational values which does not change like daily tactics. This approach have resemblance to SVM in two ways. First, both approach address a long-lasting organizational direction - although different terminology - which is not significantly affected by daily operations. Oner and Saritas (2005) claim that normative, strategic and operational levels of management are interrelated and have influence on the goal, the structure, and the behavior of the organization. But the main idea in the proposed model is that the overall *strategic direction* of an organization does not change in daily basis.

Second, both SVM and the approach of "Core ideology" emphasize the existence (and importance) of employee contribution in the ideology or *strategic direction* of the organizations.

Another scholar who expressed similar ideas is Arie de Geus (1997). One of the four traits for successful organizations he discovered in his study was "cohesion and identity" – the ability to build a community with personality, vision, and purpose. From the perspective of SVM this approach implies the adjustment of individual vectors in an organization to have same directions.

"Shared vision" which is identified as one the five components of learning organization by Senge (1990) is addressing the adjustment of individual vectors as well. Shared vision stands for shared *strategic direction*.

2.2.9 Informal Organization

The existence of the informal organization has been recognized as early as the Hawthorne Studies (Roethlisberger and Dickson, 1943). Unlike the formal organization, which appears in organization charts and reflects prescribed patterns for officially sanctioned messages, the informal organization consists of spontaneous, emergent patterns that result from individuals' discretionary choices (Stohl, 1995: 65). This informal network, also called the grapevine (e.g., Baird, 1977; Daniels, Spiker, and Papa, 1997), has received considerable attention in the years since its discovery (e.g., Davis, 1953; Katz and Kahn, 1978; Krackhardt and Hanson, 1993; Podolny and Baron, 1997; Nancy and Hope, 2000).

The strategies of organizations are not only influenced by formal organization but also informal organization. Thus any effort to measure organizational strategy (as well as strategic problems in the organization) has to consider both formal and informal characteristics of the organization.

2.3 Strategic Problems

Strategy studies that predate the current literature have been criticized for not fulfilling the requirements of managers or for not fitting with the circumstances of real business world

(Prahalad and Hamel, 1994, Feurer and Chaharbaghi, 1995, Hendry, 1995, Schendel and Hofer, 1979).

First reason is that strategy used to be accepted as a non-rational process (Braybrooke and Lindblom, 1963; Cyert and March, 1963; Cohen, March and Olsen, 1972). Main intention of this study is to provide a set of rational tools that are also applicable in organizations.

Second reason is about the scope of the strategy studies. Strategic management is introduced as an application field whose principal purpose is to describe, predict and change organizational situation (Gopinath and Hoffman, 1995; Summer et al., 1990). Some of the scholars are either focused on describing (Chandler, 1962, Grinyer et al., 1980, Luffman, 1984, Levy, Alvesson and Willmott, 2001) or changing organizational situation (Brush, 1996, Kotter and Schlesinger, 1979). Some others developed prediction tools for strategic management (King et al., 2003, Zahra and Chaples, 1993, Oliver, 1991, Gales and Victor, 1985). But the need for a holistic approach to cover all issues related to organizational strategy is usually ignored. The proposed study is focused on developing a model to fulfill this gap.

Finally the third reason for the distinction between theoretical strategy studies and field applications is related to the recognition of the strategic problems. Although most of the organizations experience various types of strategic problems (Lyles, 1987), the importance of studying how strategic problems are formulated has not been emphasized adequately (Heslin and Moldoveanu, 2002, Ramaprasad, Mitroff, 1984, Lyles, 1981, Lyles and Mitroff, 1980).

Ramaprasad and Mitroff (1984) claimed that the recognition of the issue has been prompted by a number of insights into the nature of strategic problems. First is the insight that a strategic problem does not have a unique, universal formulation. Second, formulating a strategic problem in different ways can result in different solutions to the same problem. Third, an error in formulating a strategic problem can result in solving the wrong problem (Mitroff and Featheringham, 1974). Fourth, and last, an error in formulating a strategic problem can compound the problem (Watzlawick, Weakland, and Fisch, 1974). In short, these insights include the recognition that a strategic problem is plastic, that it does not have a well defined intrinsic structure, that it can be molded into different shapes, and that managers can formulate it in different ways (Ramaprasad, Mitroff, 1984).

On the contrary to the first two insights, the intention of the present study is to provide a universal formulation for strategic problems and propose appropriate and unique solutions. Concerns of the last two insights are shared by the author and special attention will be paid to avoid diagnostic errors. It is hoped that the proposed study will provide a nice and clear picture of the strategic status of the organization so it will restrain researchers and/or managers from errors in analyzing and addressing strategic problems.

2.4 Mintzberg's Organizational Structures

As introduces in the previous paragraphs, one (middle) column of IMM table is dedicated to the assessment of organizational structures. Another study which aims to explain organizational structures is conducted by Mintzberg (1979).

2.4.1 Organizational parts

According to Mintzberg (1979), a generic organization is composed of five parts:

1. Operating Core
2. Strategic Apex
3. Middle Line
4. Technostructure
5. Support Staff

Localization of five organizational parts is demonstrated in Figure 6.

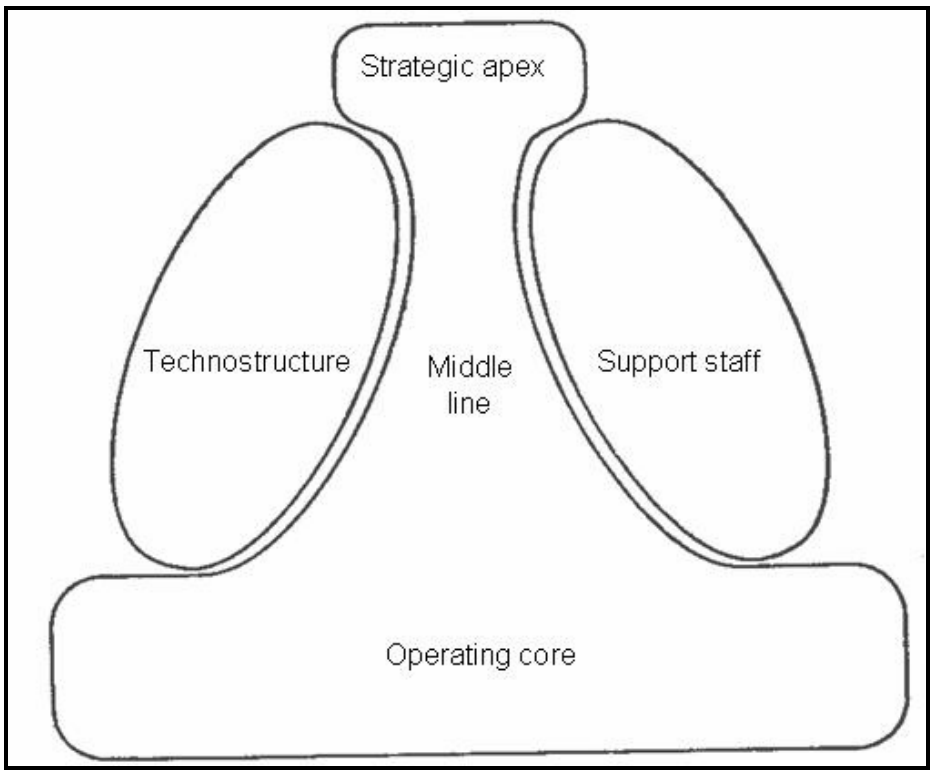


Figure 6 Organizational Parts (Adopted from Mintzberg, 1979)

Operating core encompasses those members – the operators – who perform the basic work related directly to the production of products and services (Mintzberg, 1979).

Strategic apex is charged with ensuring that the organization serve its mission in an effective way, and also that it serve the needs of those people who control or otherwise have power over the organization (Mintzberg, 1979).

The strategic apex is joined to the operating core by the chain of middle-line managers with formal authority (Mintzberg, 1979).

In the technostructure, we find the analysts who serve the organization by affecting the work of others. They may design it, plan it, change it or train the people who do it; but they do not do it themselves (Mintzberg, 1979).

Support staff is composed of specialized units that exist to provide support to the organization outside the operating work flow (Mintzberg, 1979).

Mintzberg (1979) also assumes that the members of the organization (individuals) are distributed among these five parts as demonstrated in Figure 7.

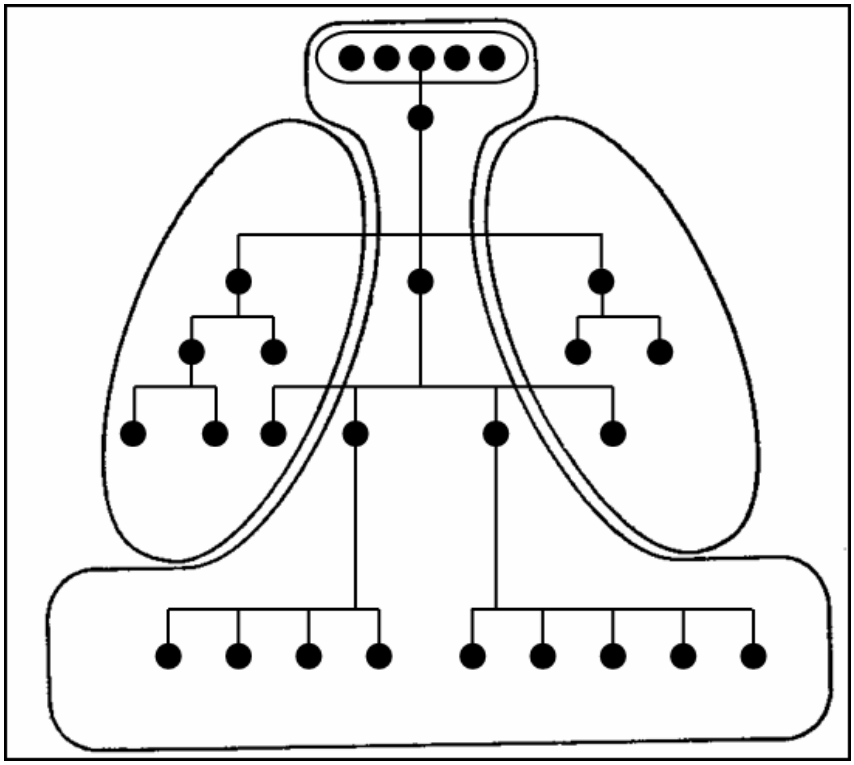


Figure 7 Distribution of Individuals on an Organizational Chart (Adopted from Mintzberg, 1979)

Depending on the characteristics -which is demonstrated with size and shapes in graphical displays- of these parts, Mintzberg (1979) categorizes organizational structures in five groups.

1. Simple structure
2. Machine bureaucracy
3. Professional bureaucracy
4. Divisionalized form
5. Adhocracy

2.4.2 Simple structure

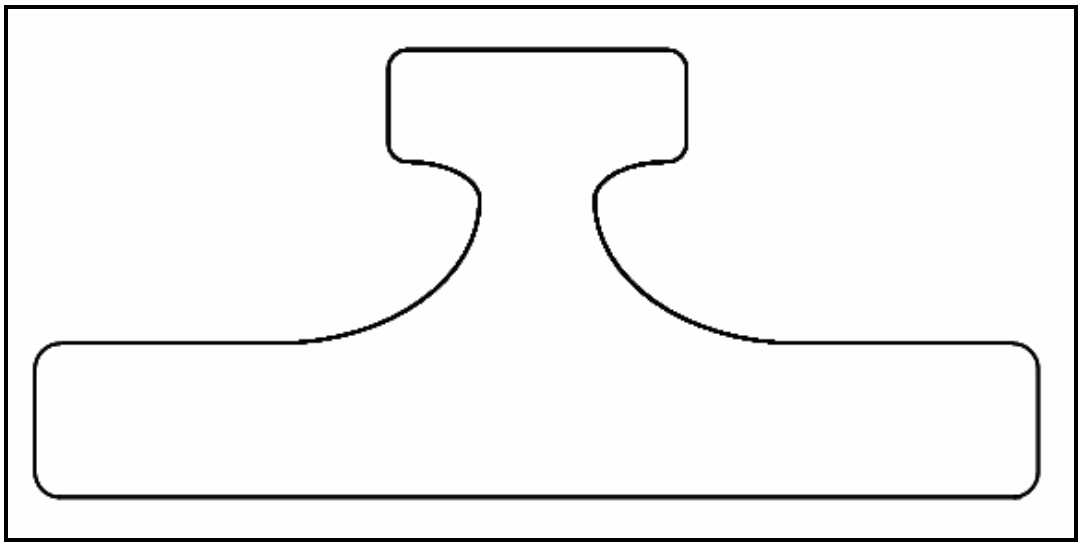


Figure 8 Simple Type Organizational Structure (Adopted from Mintzberg, 1979)

According to Mintzberg (1983b), the simple structure, typically, has little or no technostructure, few support staffers, a loose division of labor, minimal differentiation among its units, and a small managerial hierarchy. The behavior of simple structure is not formalized and planning, training, and liaison devices are minimally used in such structures (Mintzberg 1979, 1983b).

Coordination in the simple structure is controlled largely by direct supervision. All important decisions tend to be centralized in the hands of the chief executive officer. Thus, the strategic apex emerges as the key part of the structure. Indeed, the structure often consists of little more than a one-person strategic apex and an organic operating core (Mintzberg, 1983b).

Most organizations pass through the simple structure in their formative years (Mintzberg, 1983b). The environments of the simple structures are usually simple and dynamic. A simple environment can be comprehended by a single individual, and so enables decision making to be controlled by that individual. A dynamic environment requires an organic structure; its future state cannot be predicted, the organization cannot effect coordination by standardization (Mintzberg, 1979; Mintzberg, 1983b; Mintzberg and Quinn, 1991).

2.4.3 Machine bureaucracy

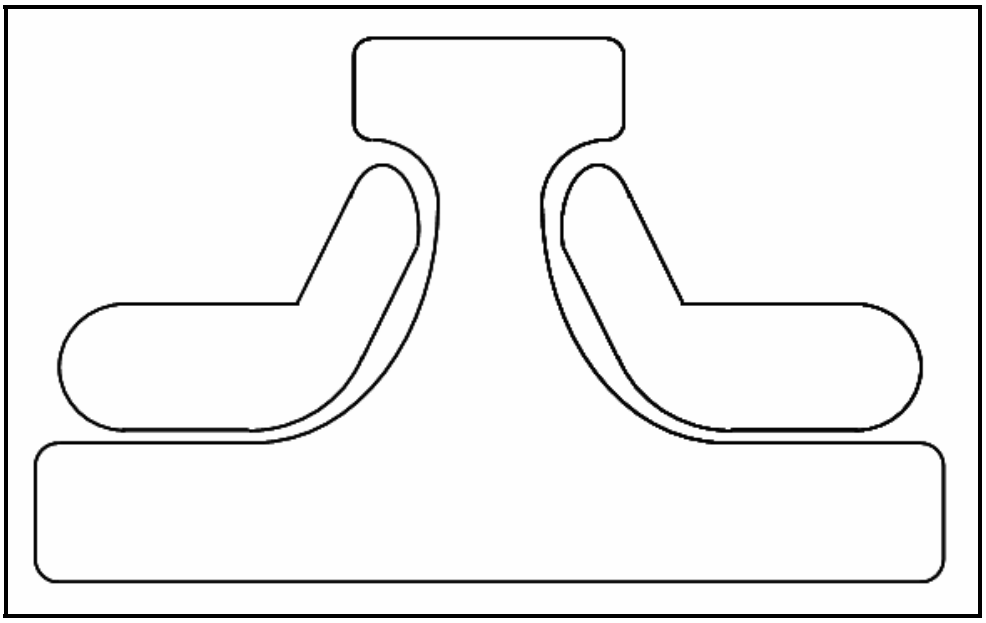


Figure 9 Machine Bureaucracy Type Organizational Structure (Adopted from Mintzberg, 1979)

A clear configuration of the design parameters of the machine bureaucracy can be listed as follows: highly specialized, routine operating tasks; very formalized procedures in the operating core; a proliferation of rules, regulations, and formalized communication throughout the organization; large-sized units at the operating level; reliance on the functional basis for grouping tasks; relatively centralized power for decision making; and an elaborate administrative structure with sharp distinctions between line and staff (Mintzberg, 1979).

Because the machine bureaucracy depends primarily on the standardization of its operating work processes for coordination, the technostructure emerges as the key part of the structure (Mintzberg, 1979).

Machine bureaucratic structure is found in environments that are simple and stable. Machine bureaucracy is not common in complex and dynamic environments because the work of complex environments can not be rationalized into simple tasks and the processes of dynamic

environments can not be predicted, made repetitive, and standardized (Mintzberg, 1979; Mintzberg, 1983b; Mintzberg and Quinn, 1991).

The machine bureaucracies are typically found in the mature organizations, large enough to have the volume of operating work needed for repetition and standardization, and old enough to have been able to settle on the standards they wish to use (Mintzberg, 1979; Mintzberg and Quinn, 1991).

The managers at the strategic apex of these organizations are mainly concerned with the fine-tuning of their bureaucratic machines (Mintzberg, 1979). Machine bureaucracy type structures are "performance organizations" not "problem solving" ones (Mintzberg, 1983b).

2.4.4 Professional bureaucracy

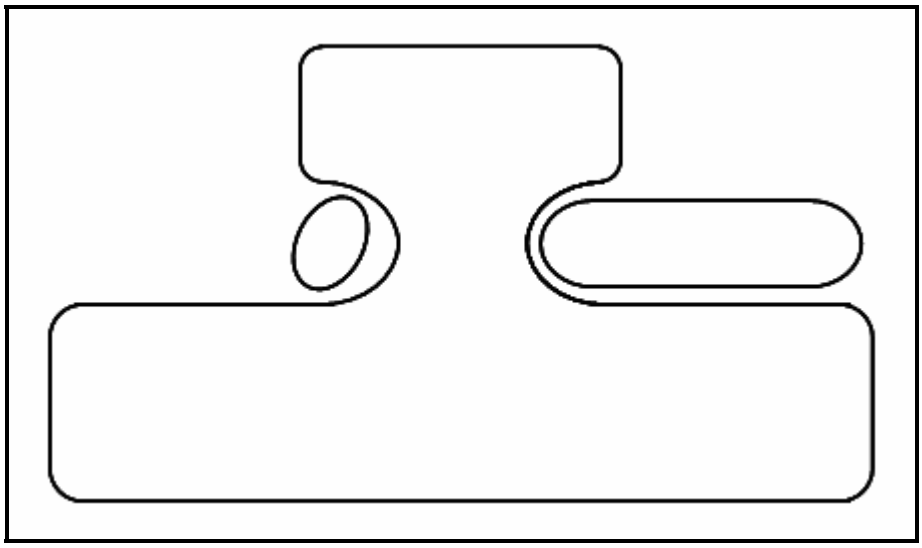


Figure 10 Professional Bureaucracy Type Organizational Structure (Adopted from Mintzberg, 1979)

The professional bureaucracy relies for coordination on the standardization of skills and its associated parameters such as design, training and indoctrination. In professional bureaucracy type structures duly trained and indoctrinated specialists -professionals- are hired for the operating core, and then considerable control over their work is given to them. Most of the necessary coordination between the operating professionals is handled by the standardization

of skills and knowledge – especially by what they have learned to expect from their colleagues (Mintzberg and Quinn, 1991).

Whereas the machine bureaucracy generates its own standards, the standards of the professional bureaucracy originate largely outside its own structure. The professional bureaucracy emphasizes authority of a professional nature or, in other words, “the power of expertise” (Mintzberg and Quinn, 1991).

The strategies of the professional bureaucracy are mainly developed by the individual professionals within the organization (Mintzberg and Quinn, 1991).

2.4.5 Divisionalized form

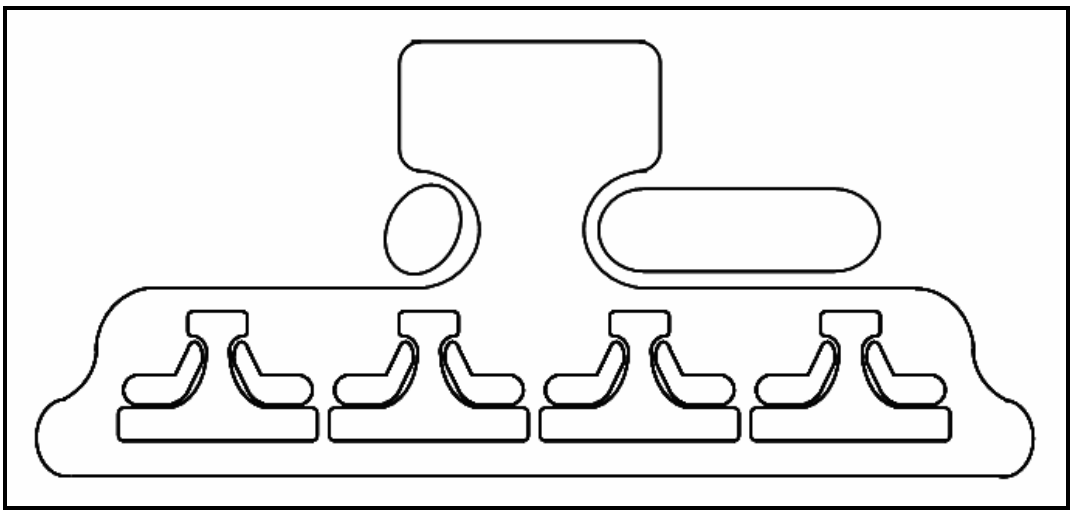


Figure 11 Divisionalized Form Type Organizational Structure (Adopted from Mintzberg, 1979)

Divisionalized form type organizations are composed of semi-autonomous units - the divisions. The divisionalized form is probably a structural derivative of a Machine Bureaucracy - an operational solution to co-ordinate and control a large conglomerate delivering (Mintzberg, 1991); (a) horizontally diversified products or services; (b) in a straight-forward stable environment; and (c) where large economies of scale need not apply.

If a large economy of scale is possible, the costs and benefits of divisionalisation would need careful examination. The modern, large holding company or conglomerate typically has this form (Mintzberg, 1991).

Like the professional bureaucracy, the divisional form is not so much an integrated organization as a set of quasi-autonomous entities coupled together by a central administrative structure. Whereas those "loosely coupled" entities in the professional bureaucracy are individuals —professionals in the operating core, in the divisionalized form they are units in the middle. These units are generally called *divisions*, and the central administration, the *headquarters* (Mintzberg and Quinn, 1991).

The divisionalized form differs from the other four structural configurations in one important respect. It is not a complete structure from the strategic apex to the operating core, but rather a structure superimposed on others. That is, each division has its own structure (Mintzberg and Quinn, 1991).

Most important, the divisionalized form relies on the market for grouping units at the top of the middle line. Divisions are created according to markets served and they are then given control over the operating functions required to serve these markets (Mintzberg and Quinn, 1991).

2.4.6 Adhocracy

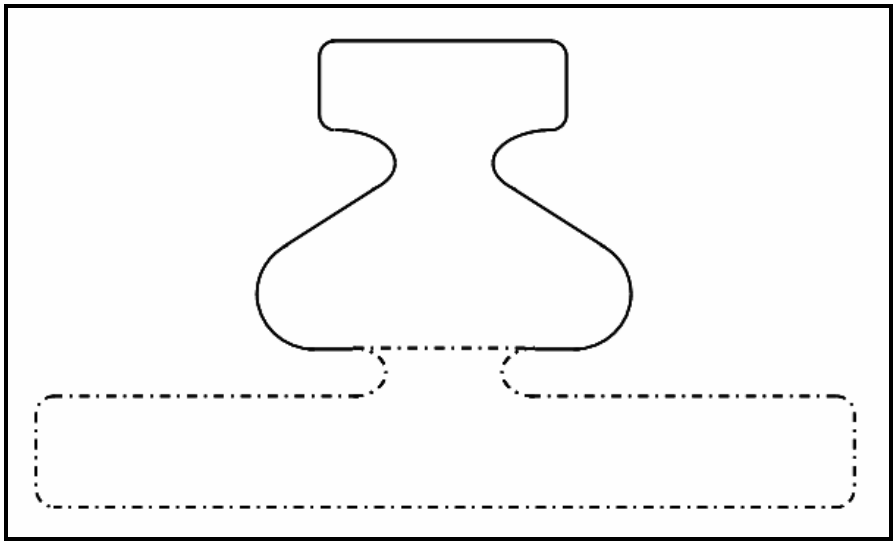


Figure 12 Adhocracy Type Organizational Structure (Adopted from Mintzberg, 1979)

Adhocracy includes a highly organic structure, with little formalization of behavior; job specialization based on formal training; a tendency to group the specialists in functional units for housekeeping purposes but to deploy them in small, market-based project teams to do their work; a reliance on liaison devices to encourage mutual adjustment, the key coordinating mechanism, within and between these teams (Mintzberg, 1979).

The innovative organization cannot rely on any form of standardization for coordination (Mintzberg, 1983b). Consequently, the adhocracy might be considered as the most suitable structure for innovative organizations which hire and give power to experts - professionals whose knowledge and skills have been highly developed in training programs (Mintzberg, 1979; Mintzberg 1983b).

Managers (such as functional managers, integrating managers, project managers, etc.) abound in the adhocracy type structures (Mintzberg 1983b). Project managers are particularly numerous, since the project teams must be small to encourage mutual adjustment among their members, and each team needs a designated leader, a "manager." Managers are also functioning members of project teams, with special responsibility to effect coordination between them. To the extent that direct supervision and formal authority diminish in importance, the distinction between line and staff disappears (Mintzberg, 1979; Mintzberg 1983b).

Table 1 Characteristics of Mintzberg's **Organizational Structures (Developed from Mintzberg, 1979)**

	Prime Coordinating Mechanism	Key Part of Organization	Main Design Parameters	Contingency
Simple structure	Direct Supervision	Strategic Apex	Centralization, organic structure	Young, small, non-sophisticatedtechnical system, simple, dynamic environment, possible extreme hostility or strong power needs of top manager, not fashionable
Machine bureaucracy	Strategic Apex	Technostructure	Behavior formalization, verticaland horizontal job specialization, usually functional grouping, large operating unit size, vertical centralization and limited horizontal decentralization, action planning	Old, large, regulating, non-automated technical system, simple, stable environment, external control, non fashionable
Proffessional bureaucracy	Standartization of Skills	Operating Core	Training, horizontal job specialization, vertical and horizontal decentralization	Complex, stable environment, nonregulating, non-sophisticated technical system, fashionable
Divisionalized form	Standartization of Outputs	Middle Line	Marketing grouping, performance control system, limited vertical decentralization	Diversified markets (particularly products or services), old, large, power needs of middle managers, fashionable
Adhocracy	Mutual adjustment	Support staff (in the Administrative Adhocracy; together with the operating core in the Operating Adhocracy)	Liaison devices, organic structure, selective decentralization, horizontal job specialization, training, functional and market grouping concurrently	Complex dynamic, (sometimes disparate) environmental, young (especially Operating Adhocracy) sophisticated and often automated technical system (in the Administrative Adhocracy), fashionable

2.5 Power and Politics

Pfeffer defines power as:

"The potential ability to influence behaviour, to change the course of events, to overcome resistance, and to get people to do things they would not otherwise do"(1992, p.30)

Power is also defined as "the capacity of individual actors to exert their will" (Finkelstein, 1992: 507). Based on these writings and the writings of others (French and Raven, 1959; House, 1988; Shackleton, 1995), Nancy and Hope (2000) define power as "the ability to exert one's will, influencing others to do things that they would not otherwise do".

Booher and Innes (2000) emphasize that "power" in today's business organizations is not a weapon that an individual can hold and use at will, nor is it the result of an unequal relationship between players, where one can force another to do something. It is a notion that makes sense if we think of the world as a complex adaptive system, within which individuals work, communicate and learn, rather than as a machine that we can manage and control with the right knowledge (Booher and Innes, 2000).

Politics is the exercise of the power or the attempt to influence that power (Wolff, 1970).

2.5.1 Sources of Power

Power affects organizations (Mintzberg, 1983a) in a variety of ways as Morgan (1997) suggests. The following areas are the most important sources of power:

1. Formal authority
2. Control of scarce resources
3. Use of organizational structures, rules and regulations
4. Control of decision processes
5. Control of knowledge and information
6. Control of boundaries
7. Ability to cope with uncertainty

8. Control of technology
9. Interpersonal alliances, networks and control of informal organizations
10. Control of counter organizations
11. Symbolism and management of meaning
12. Gender and management of gender relations
13. Structural factors that define the stage of action
14. The power one already has

Some scholars believe that organizational processes place individuals "in power", but this does not mean that they really have it; instead, that they have a license to take it. (Berle, 1969, p.54)

2.5.2 Types of Power

Depending on the perspective, various classifications of power exist in the literature (Booher and Innes, 2000). Galbraith's (1983) approach accepts power associated with personality, property, or degree of organization and introduces three types of power:

1. **Condign:** Based on force.
2. **Compensatory:** Through the use of various resources.
3. **Conditioned:** The result of persuasion.

Another classification is provided by Giddens (1984):

1. The power of action;
2. The power of ideas, modes and methods;
3. The power of deep structure.

A new type of power called "network power" which can be thought of as a form of power shared by all participants, is introduced by Booher and Innes (2000).

The concept of network power is consistent with Giddens' power typology (Booher and Innes, 2000) and emerges as diverse participants in a network focus on a common task and develop shared meanings and common heuristics for action as demonstrated in Figure 13 (Booher and Innes 2000).

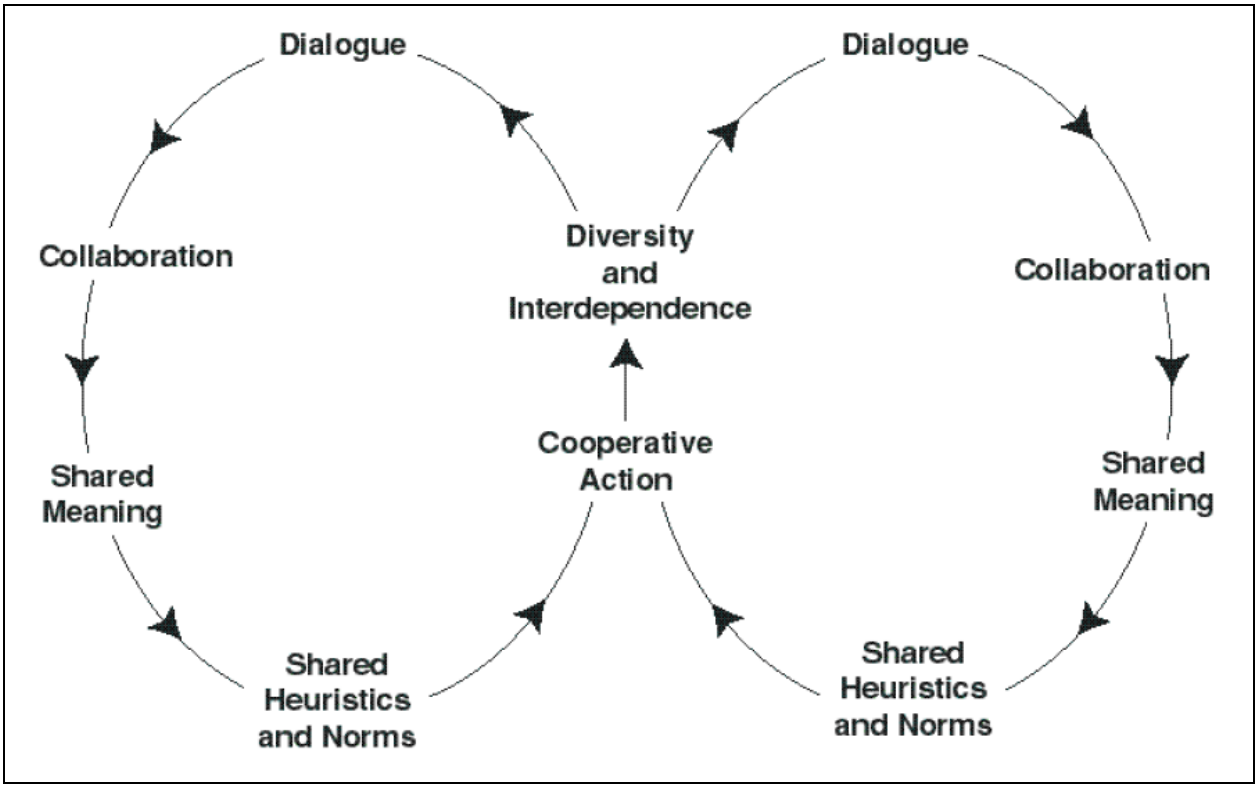


Figure 13 Network Power Model (Adopted from Booher and Innes, 2000)

Network power is accepted as particularly critical in contemporary conditions where traditionally powerful players are unable to accomplish their objectives alone (Booher and Innes 2000).

2.5.3 Bases of Power

The multidimensionality of power is well recognized (Nancy and Hope, 2000). Although organizational scholars have offered other power typologies (e.g., Finkelstein, 1992; Yukl and Falbe, 1991), French and Raven's (1959) original classification is the most widely accepted and adopted (e.g., Hinkin and Schriesheim, 1994; Atwater, 1995; Davis and Schoorman,

1997). French and Raven's (1959) typology distinguishes among five kinds of power that one individual can have over another individual: coercive power, reward power, legitimate power, expert power, and referent power. Their typology is particularly useful for describing individual-level power, which is the focus of our model (Nancy and Hope, 2000).

French and Raven (1959, 1960) introduce a scheme of five categories of power which reflects the different bases or resources that power holders rely upon. The proposed five bases of power can briefly be described as follows:

1. **Legitimate Power:** Legitimate power results from one's being elected, selected, or appointed to a position of authority. Such legitimacy is conferred by others and this legitimacy can be revoked by the original granters, their designees, or their inheritors. Legitimate power is identical with authority, and depends upon the belief of individuals in the right of senior people to hold their positions, and their consequent willingness to accept the power holder. A's power over B is a function of how much B believes that A has the lawful authority to influence B (Kim, Pinkley, and Fragale, 2005).
2. **Referent Power:** Referent power refers to the power or ability of managers to influence employees' feelings about themselves or their emotions in relation to their work. It is based on the charisma of the power holder. Here the person under power desires to identify with these personal qualities, and gains satisfaction from being an accepted follower. A's power over B is a function of how attracted B is to A and, thus, how much A can influence B's feelings of personal acceptance, approval, and self-esteem (Kim, Pinkley, and Fragale, 2005).
3. **Expert Power:** Expert power is the type of power which is related to the knowledge about work and power due to this knowledge at work. Expert power rests on the skills or expertise of the person holding power. Unlike the others, this type of power is usually highly specific and limited to the particular area in which the expert is trained and qualified. A's power over B is a function of B's perception that A possesses some special knowledge or expertise (Kim, Pinkley, and Fragale, 2005).

4. **Reward Power:** Reward power mainly depends upon the ability of a manager to give valued material rewards, it refers to the degree to which managers can give employees benefits, welfare, promotions or increases in pay or responsibility. A's power over B is a function of how much B can be rewarded and the extent to which B believes that A controls these rewards (Kim, Pinkley, and Fragale, 2005).
5. **Coercive Power:** Coercive power refers to the application of negative influences onto employees and/or to the ability to demote or to withhold other rewards. It is the desire for valued rewards or the fear of having them withheld that ensures the obedience of those under power. A's power over B is a function of how much B can be punished by B and the extent to which B believes that this punishment can be avoided if B complies with A's wishes (Kim, Pinkley, and Fragale, 2005).

Two additional bases (informational and connectional) were later added (Raven, 1993).

6. **Informational power:** Informational power is a variation of legitimate power stemming from the ability to control the availability and accuracy of information. Power based on information to which one has access. One can have informational power without being recognized as an expert in an area.
7. **Connectional Power:** Connectional power reflects the influence that leaders possess as a result of whom they know and the support they engender from others as a result (i.e., the bandwagon effect). Connectional power is also a variation of referent power. However, like legitimate power, it is depersonalized in the sense that it reflects attributes of others with whom the individual is associated, rather than attributes that are directly inherent to the person him or herself. Power based on who one knows.

2.5.4 Power Distance

Hofstede defines power distance as "*the extent to which the less powerful expect and accept that power is distributed unequally*" (1991, p.46).

Although power distance might be reflected in the hierarchical organization of companies the concept is clearly more far-reaching than the work place alone. Power distance is describing the distribution of "power" among individuals and groups not only in organizations but also in

society. It attracts attention to how inequalities in power are dealt with in both organizations and societies.

Two dimensions of power distance might be expressed as the comfort in interacting accross (organizational) hierarchical levels and beliefs about involvement in (organizational) decisions (Hofstede, 1980,1983,1991).

Some of the sympthoms (beliefs of individuals in the country) of low power distance might be listed as follows (Crowe, 2006):

1. Inequality should be minimized;
2. All people should be interdependent;
3. Hierarchy is an inequality of roles - for convenience only!
4. Superiors/Subordinates are people just like me;
5. All use of power should be legitimised, and is subject to moral judgement, (what is good or bad or even evil use of power);
6. All have equal rights;
7. Powerful people should try not to look too powerful;
8. Reward, Legitimate and Expert power are accepted;
9. If something goes wrong - System is to blame;
10. To change the social system, redistribute the power. (evolution);
11. People are more prepared to trust one another;
12. There is a latent "harmony" in the society;
13. Co-operation in "lower class" is based on solidarity.

Similarly, some of the symptoms (beliefs of individuals in the country) of high power distance might be listed as follows (Crowe, 2006):

1. Inequality is a fact of life - Everyone has their rightful place;
2. Some are independant, others are dependant;

3. Hierarchy is something that exists and is accepted;
4. Superiors/Subordinates are different to me;
5. Power is a basic fact of society which is independant of morality. It is there to be used - legitimacy is irrelevant;
6. Power gives privileges;
7. Powerful people try to look as powerful as possible. (pomp + ceremony);
8. Coercion and referent power are accepted;
9. If something goes wrong - It is the underdog's fault;
10. To change the social system, dethrone those in power (revolution) everyone wants your power - do not trust them;
11. Latent conflict between powerful-powerless;
12. Co-operation is hard due to lack of trust.

These symptoms of high and low power distance might be useful for the evaluation (and measurement) of the power difference (explained in detail in Section 3) in organizations. The term “power distance” and related concepts are originally developed for the analysis (and especially for the comparison) of cultures (Hofstede, 1980,1983,1991). Power distance, might also be applicable for analysis and comparison of organizations; however, this might cause some misunderstandings. Due to this fact, the term “power difference” is preferred in this study to explain the difference among the members of organizations especially in terms of the determination of the organizational strategies.

2.6 The Integrated Management Model (IMM)

The concept of “Integrated Management Model (IMM)” stems from Bleicher (1991, as cited in Alsan and Oner, 2003) who developed the “St. Gallen management concept” of Ulrich (1984, as cited in Alsan and Oner, 2003). IMM is based on the functions of management, which Ulrich defines as (1984, as cited in Alsan and Oner, 2003):

1. Forming,

2. Steering, and
3. Development.

Harvey, suggests that, for a certain set of organizational and environmental conditions, an optimal strategy exists (1982). Similarly Ginsberg and Venkatraman emphasized that any theory of corporate or business strategy must be contingency-based (1985). Both approaches are concentrated on the effects of input parameters and the dependency of the organization strategy on these inputs. However, the outputs of the strategies might be contingent as well. The author believes that organizational strategies have different impacts on different dimensions of an organization. Following model is conformable to establish a baseline for the analysis of consequential impacts of organizational strategy.

IMM brings different components and levels of management together so as to provide a more complete perspective where management is conceived as a multidimensional process (Schwaninger, 2000). IMM is characterized by a two-dimensional structure of the problem areas of management (Alsan and Oner, 2003):

1. The impact of time (horizontal view) (Goals, structures, and behaviors), and
2. Constituting elements (vertical view) (Normative, strategic, and operational).

The IMM brings the three components of management together: goals, structures, and behavior. IMM also introduces management as a multilevel process with normative, strategic, and operational management levels where all components that constitute the framework are dynamically interrelated (Schwaninger, 2000). A schematic display of the IMM is shown on Table 9.

Table 9 Integrated Management Model (Adopted from Bleicher, 1999)

		Management Components		
		Goals	**Structures**	**Behaviors**
Management Levels	**Normative**	Normative Goals	Normative Structures	Normative Behaviors
	Strategic	Strategic Goals	Strategic Structures	Strategic Behaviors
	Operational	Operational Goals	Operational Structures	Operational Behaviors

In the IMM, the organization manages itself in three logical management levels: normative, strategic, and operational. While the normative management level fulfills the foundational function, the strategic management level executes the orientation function. Eventually, the operational management level carries the function of realization (Oner and Saritas , 2005).

On the horizontal view, the management at normative level aims to secure the survival and growth of an organization (Alsan and Oner, 2003). The management at strategic level is occupied with the construction, maintenance and utilization of success potentials (Alsan and Oner, 2003). And finally, the management at operational level is responsible for the implementation of normative and strategic aims (Alsan and Oner, 2003).

The normative level establishes behavior and the strategic level intends to lead this behavior. The operational (operative) level deals with the performance of work processes, which is entirely shaped by employee management (Bleicher 1991 as cited in Alsan and Oner, 2003).

On the vertical view, the basic elements of management are distinguished by structures, goals and behavior (Alsan and Oner, 2003). These three components of management levels reflect the multidimensional nature of the IMM. This consideration is based on the assumption that the management activities influence the organizational activities in such a way that the goals are determined, the structures are manipulated, and a basic and determined behavioral pattern is created (Oner and Saritas , 2005; Alsan and Oner, 2005).

The structure covers both the order of elements in a system including their relationships and the instruments for the generation of such arrangements (Alsan and Oner, 2003, 2005). Goals could be quantitative or qualitative and activities such as forming, steering and development are related to goals (Alsan and Oner, 2003). The behavior comprises both internal social and cultural aspects of the organization and the integration of the organization with its environment (Alsan and Oner, 2003).

Integration of the IMM and SVM will provide a better strategic management tool for the managers and researchers. Tensors might be used for this integration. Tensors and the procedure for the integration of two models are explained below.

2.7 Tensors

Tensors are a further extension of the ideas we already use when defining quantities like scalars and vectors.

A scalar is a tensor of rank zero, and a vector is a tensor of rank one. You can get tensors of rank 2, 3 ... and their use is mainly in manipulations and transformations of sets of equations within and between different coordinate systems (Mathforum.org, 2005).

For example, if you consider a force F with components fx, fy, fz and you have an element of area whose “normal” has components dSx, dSy, dSz, then fx itself has components acting on these three elements, and the pressure of fx alone is denoted by its three components pxx, pxy, pxz (Mathforum.org, 2005).

Similarly fy will produce pressures pyx, pyy, pyz and fz will produce pressures pzx, pzy, pzz.

The product pxx.dSx gives the force acting upon dSx by fx alone.

It follows that:

$$fx = pxx.dSx + pxy.dSy + pxz.dSz$$

$$fy = pyx.dSx + pyy.dSy + pyz.dSz \quad (1)$$

$$fz = pzx.dSx + pzy.dSy + pzz.dSz$$

and the total stress F on the surface dS is

$$F = fx + fy + fz \quad (2)$$

which is given by the sum of the three equations (nine components) shown above.

So we see that stress is not just a vector with three components (in three-dimensional space) but has nine components in 3D space. Such a quantity is a tensor of rank 2. In general if you are dealing with n-dimensional space, a tensor of rank 2 has n^2 components (Mathforum.org, 2005).

Tensors (of second rank) can be summarized as “vector of vectors”. This definition emphasize similar vectors might have different influences on the environments (surfaces) that are applied.

In this research tensors might be used to integrate the IMM and SVM.

In SVM, vector is used in 2D since 2D was assumed to be enough to express the possible strategic directions an individual or an organization. Third component (z) is accepted not to be useful in this project.

As stated before the IMM introduces three components of management: goals, structures, and behavior. The actual strategic vector of an organization will have a different impact on any of these components. Tensors might be used to explain those specific impacts.

3 PROPOSED MODEL FRAMEWORK

The purpose of this section is to introduce the basics of the proposed model – and the usage of the proposed model for identifying strategy problems. The model is coined as Strategy Vector Model (SVM) by the author and aims to provide an applicable strategic management tool for organizations for the assessment of organizational strategy performance and strategy status and diagnose the existing strategy problems in the organization.

This section includes two sub-sections. The first sub-section introduces the initial, raw version of the proposed model and related terminology. The second sub-section is mainly about the examination of existing strategy problems from the perspective of SVM.

3.1 Bottom Line

The proposed model might be summarized with the following three bottom line expressions:

1. Strategies of individuals could be expressed as vectors with specific direction and magnitude and those vectors might be measured.
2. The strategy vector of an organization could be calculated by summing the strategy vectors of individuals.
3. Locating the individual strategy vectors on the formal organizational chart might help us to address certain strategy problems and perceive the organizational strategy performance and strategy status.

3.2 The Strategy Vector Model (SVM)

The *Strategy Vector Model* (SVM) interprets organizational strategy as a vector in a 2D **circular coordinate system** where azimuth refers to *strategy direction* and radius to *strategy magnitude*.

SVM is a tool for the measurement of organizational *strategy direction* and *magnitude* and for the expression of organizational strategy. The model uses vector as a metaphor and presumes that each member of the organization has its own *strategy vector* which includes *strategy*

direction and *strategy magnitude*. *Strategy direction* and magnitude of individuals constitute the vectors. The overall *strategy direction* and magnitude or the resultant vector of the organization is the vectorial sum of those vectors.

By comparing the aimed strategy parameters (*strategy direction* and *strategy magnitude*) with the model results, *strategy performance* which is derived from *strategy deviation and strategy deficiency* can also be evaluated. In the research, *strategy deviation* refers to the directional deviation from the intended *strategy direction*. Similarly, *strategy deficiency* refers to the difference between the intended and measured strategy magnitudes.

Another tool that is provided by SVM and which might be used for the assessment of strategy status (which is another perspective of strategy performance evaluation) is called *strategy mapping. Strategy mapping* is basically a kind of projection where individual strategy vectors are placed on the formal organizational chart. This tool helps us, as well as managers, to easily observe the *strategy status* of the organization and to identify some strategy problems - the so called *strategy anomalies.*

Strategy performance, strategy mapping and *strategy status* will be explained in detail later in this chapter.

3.2.1 Strategy Direction

Mintzberg (1994a) emphasizes that strategic planning is not strategic thinking. He thinks that strategic planning often spoils strategic thinking, causing managers to confuse real vision with the manipulation of numbers. Strategic thinking is directly related to the vision and vision is related to the *strategy direction* of an organization. The proposed model provides a set of tool for the determination of the *strategy direction* of an organization which also enables managers to have a broader perspective about the organizational strategies and avoids any confusion.

SVM, proposes four so-called **Cardinal Strategy Directions** as shown in Figure 14. *Cardinal Strategy Directions* are shown with one letter abbreviations.

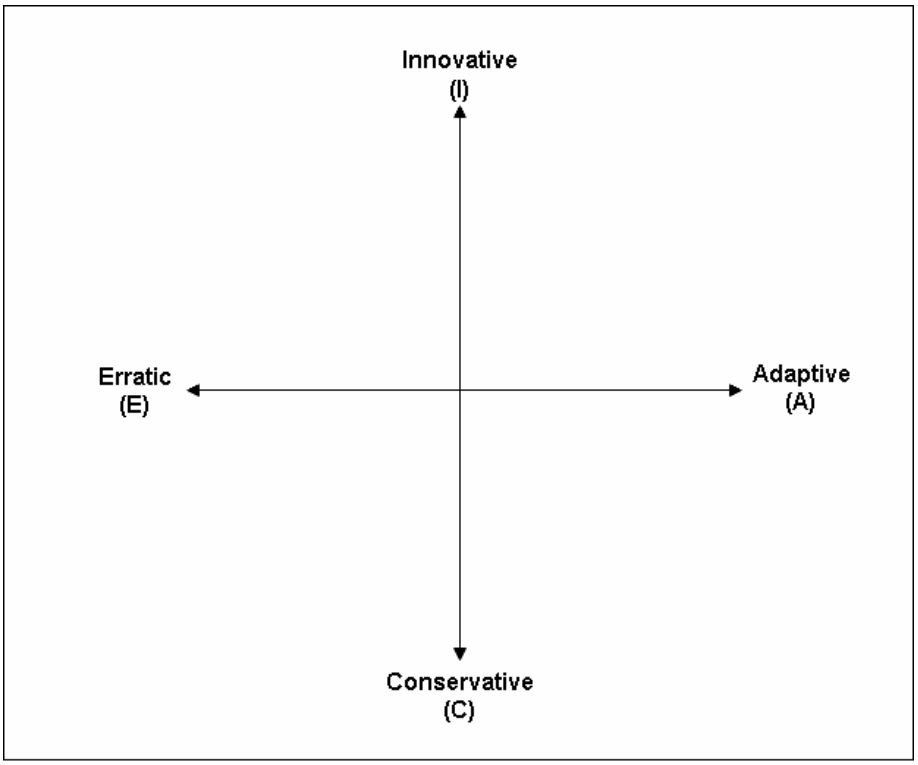


Figure 14 Cardinal Strategy Directions

In between each of the four cardinal strategy directions there is another set of four directions called the **Intercardinal Strategy Directions** as shown in Figure 15. *Intercardinal Strategy Directions* are shown with two letter abbreviations.

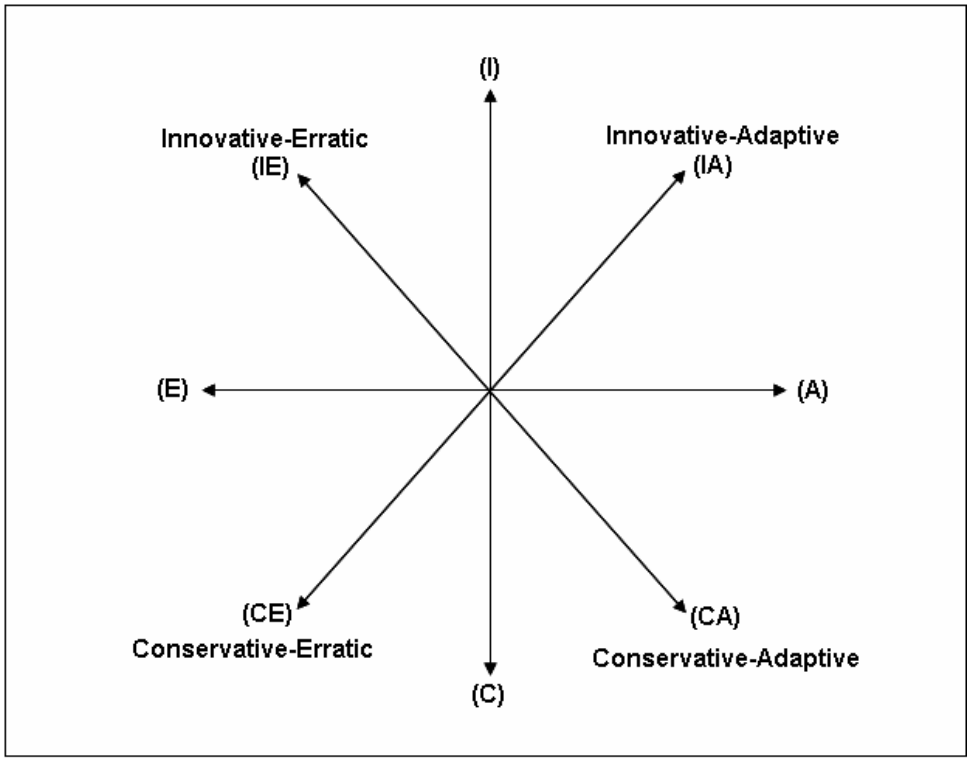


Figure 15 Intercardinal Strategy Directions

3.2.2 Strategy Magnitude

Strategy magnitude is a parameter which basically expresses the overall capability to influence the organizational strategy. Strategy magnitude is the exercise of power on changing the organizational strategy.

When compared with the existing literature, strategy magnitude does not refer to a single specific parameter. It is more like an umbrella concept which covers several kinds of parameters. Although determination of those parameters is not one of the primary purposes of this research, it will be useful to list some of them as follows:

1. Hierarchical level
2. Formal authority
3. Informal power
4. Communication skills
5. Location

6. Knowledge

For the expression of *strategy magnitude*, SVM proposes five levels of strength where 5 is the strongest and 1 is the weakest. Figure 16 shows the levels of *strategy magnitude* as well as the overall schematic display of SVM.

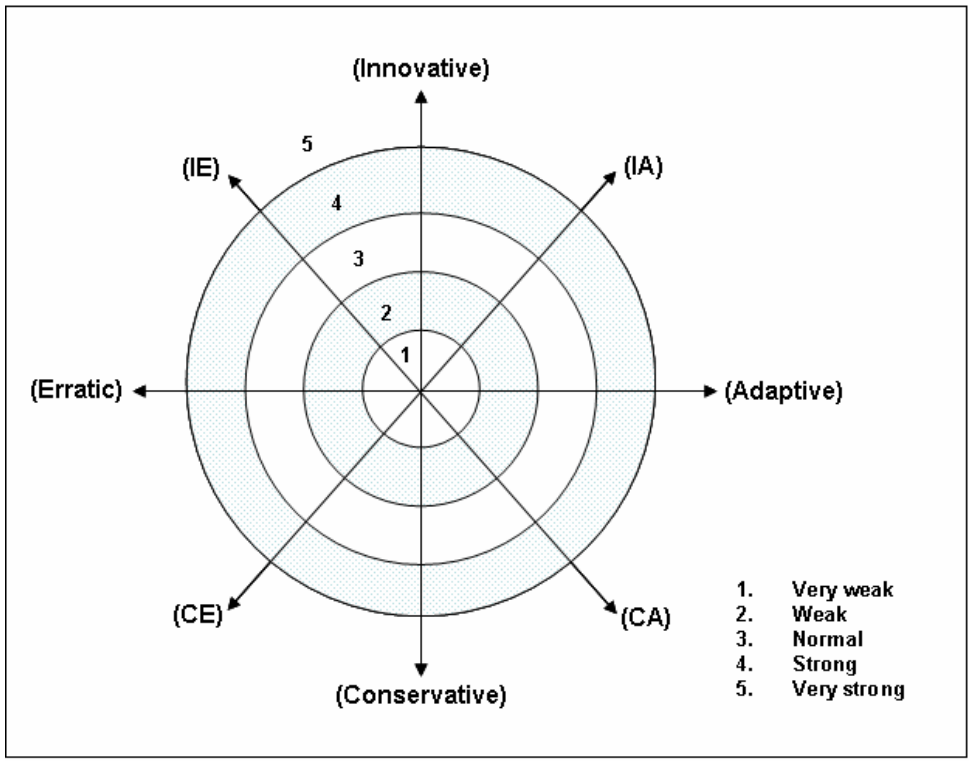


Figure 16 Strategy Magnitude Levels and Schematic Display of SVM

As the first step of the process the measurement of individual vectors is proposed. Each individual vector is composed of strategy direction and *strategy magnitude* of an individual. A carefully designed questionnaire will provide a measurement system for the determination of individual vectors.

3.2.3 Vector Concept in SVM

SVM uses vectors for the expression of both individual and organizational strategies. Since vectors are not common tools in strategy field and may not be known by the potential readers of this proposal (and thesis), a beneficial summary about the general properties of vectors is provided in **Section 3.2.3.1.** .

Similarly the vector summation is another mathematical tool that is hardly used in strategy field. **Section 3.2.3.2.** tries to provide necessary information about the basics of vector summation to the readers.

3.2.3.1 General Properties

A vector is represented by an arrow. The direction of the arrow defines the direction of the vector, and the length of the arrow defines the vector's magnitude. A sample A vector with one end by the origin is shown in Figure 17.

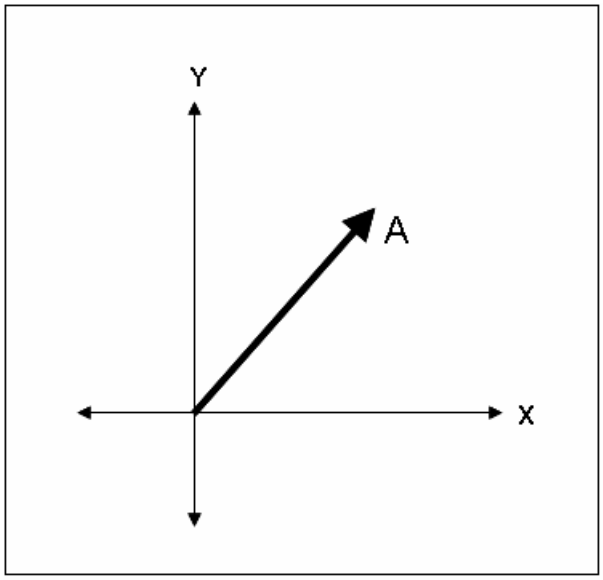


Figure 17 A Sample "A" Vector

Using origin as the starting point for displaying vectors provides easiness to interpret the direction and the magnitude of the vector. However the initial point of a vector has no effect on the parameters such as direction and magnitude. Because vectors are not defined in a coordinate plane and their relative position is not important. Only their direction and magnitude count. The variables of a vector will not change even if you shift it in the space. As a consequence, two vectors are equal if they have the same magnitude and direction,

regardless of whether they have the same initial points. This equality is demonstrated in Figure 18 for vector A and B.

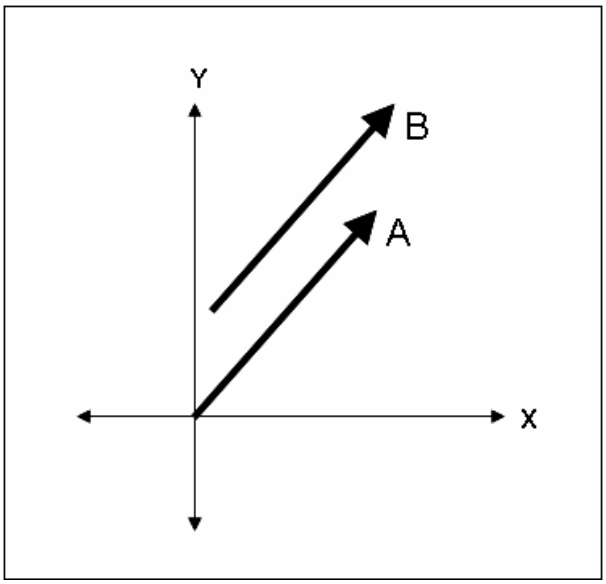


Figure 18 Equal "A" and "B Vectors With Same Direction and Magnitude

For the projection of vectors in a 2D plane, two tantamount coordination systems might be used.

First system is the **Cartesian Coordination System** and uses X (as horizontal) and Y (as vertical) axis. Any vector in 2D can be represented as the sum of its X and Y components as shown in Figure 19.

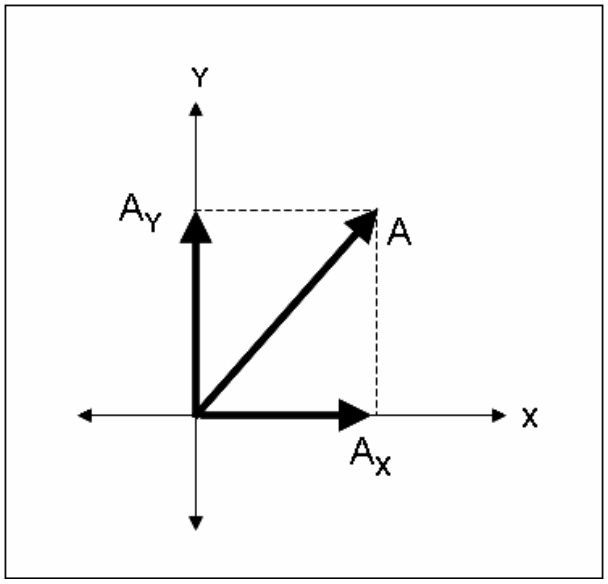


Figure 19 X and Y Components of Vector A

Second system which might be used for the projection of vectors in 2D is called **Circular Coordination System**. This system uses Radius (**R**) and Angle (**Θ**) coordinates where R is the length of the vector and **Θ** is the angle from a fixed line (which is usually the positive part of X axis). In Figure 17 a sample vector A was demonstrated in Cartesian Coordination System. In Figure 20, same A vector is displayed in Circular Coordination System.

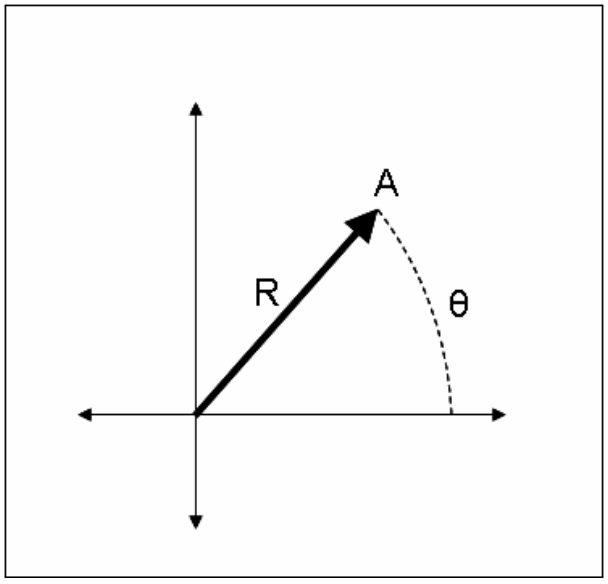


Figure 20 Projection of Vector "A" in Circular Coordination System

The proposed model in this research will use Circular Coordination System for the graphical display of individual and organization vectors. R and Θ will represent the *strategy magnitude* and the strategy direction of a vector respectively.

3.2.4 Vector Operations

Some basic geometric operations that can be performed on vectors might also be meaningful in SVM. This section is intended to introduce basic vector operations and highlight their contributions on SVM.

3.2.4.1 Addition of Vectors

Vectorial summing is widely used in positive sciences such as physics, mechanics, mathematics, etc. But, not surprisingly, it is not employed in social sciences yet.

Graphical demonstration of the vectorial summing is quite uncomplicated. The addition of two vectors (**A** and **B**) can be graphically visualized like two successive walks as shown in Figure 21. Two vectors **A** and **B** are added by drawing the arrows which represent the vectors in such a way that the initial point of **B** is on the terminal point of **A**. The vector sum **T** can be drawn as the vector from the beginning to the end point.

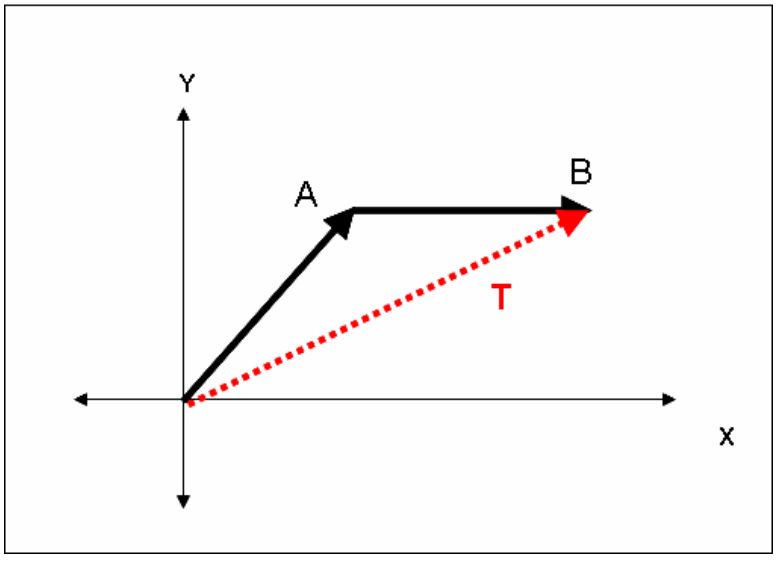


Figure 21 Addition of Two Vectors "A" and "B"

Many vectors can be added together in this way by drawing the successive vectors in a head-to-tail fashion as demonstrated in Figure 22.

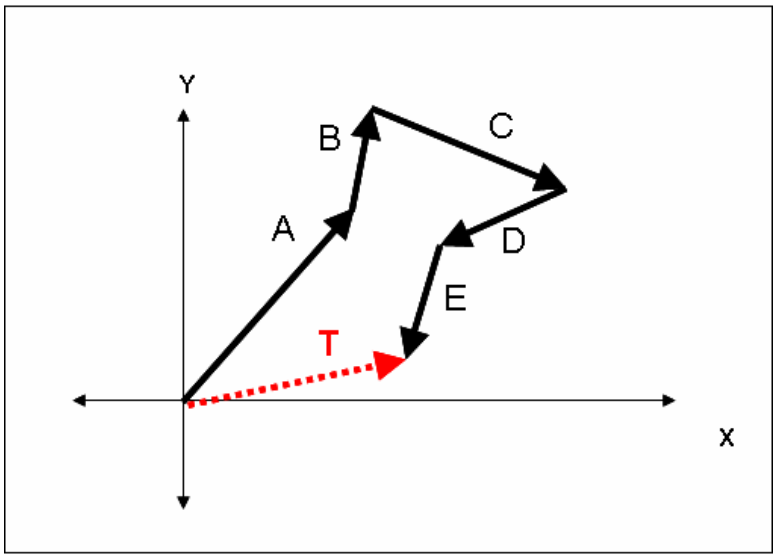


Figure 22 Addition of Multiple Vectors

The process of adding vectors mathematically might be more appropriate then the graphical approach in multiple vector cases. Mathematical summing can be done by finding the X and Y components of vectors. This is valid even for the vectors that are expressed in circular form. Next phase is the summation of all X and Y components separately. This will end up with the X and Y components of the vector sum. Once the X and Y components of the vector sum is obtained then they might be converted to the circular form.

Finding the components of vectors for vector addition involves forming a right triangle from each vector and using the standard triangle trigonometry. Graphical and mathematical vectorial summing processes are demonstrated in Figure 23.

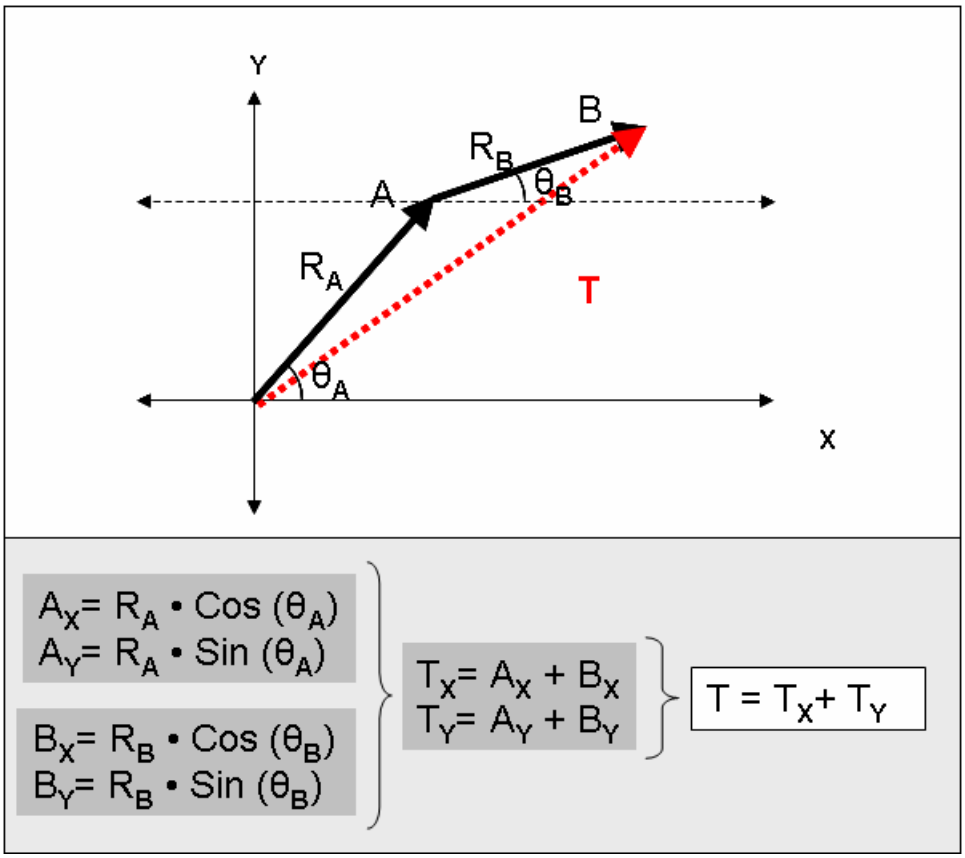


Figure 23 Mathematical Addition of Vectors "A" and "B"

Addition of vectors might also be expressed as the addition of vector matrices. This operation is formulated as follows:

$$a + b = \begin{pmatrix} a_x + b_x \\ a_y + b_y \\ a_z + b_z \end{pmatrix} \qquad (1)$$

Addition of vectors might be extended to multiple vectors as is the case in the calculation of organizational strategy vectors which is the summation of all individual strategy vectors in the organization.

The proposed model introduces an approach where individuals are expressed as individual vectors with their own direction and magnitude and organization as the sum vector of these

individual vectors. In other words, the overall (total) strategy of the organization can be calculated by summing the individual vectors of all organizational members. Since components of an organization are supposed to be vectors, the summing process must be vectorial as well.

3.2.4.2 Subtraction of Vectors

Two vectors may be **subtracted**, by subtracting their coordinates. Geometrically, this corresponds to moving both vectors so that they start at the same point, and drawing the vector that connects their end points. As demonstrated in Figure 24 if **a** points from *P* to *Q*, and **b** points from *P* to *R*, then **(b – a)** points from *Q* to *R*.

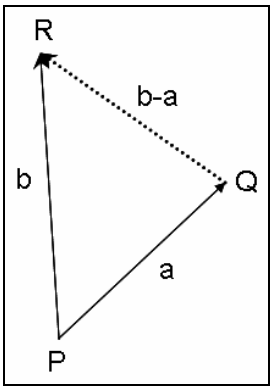


Figure 24 Subtraction of Vectors

Subtraction of **vector a**, from **vector b** might be expressed as the subtraction of vector matrices. This operation is formulated as follows:

$$b - a = \begin{pmatrix} b_x - a_x \\ b_y - a_y \\ b_z - a_z \end{pmatrix} \qquad (2)$$

Subtraction of vectors is applicable in SVM, for example, when an individual leaves the organization. The new strategy vector of the organization will be obtained by subtracting the strategy vector of the leaving individual.

3.2.4.3 Multiplication of Vectors

Vectors can be added and subtracted just like ordinary numbers can, and they can also be multiplied (and divided) by scalars. But vector multiplication is not so straightforward. There are actually three completely different cases to multiply vectors, and they have completely different uses:

3.2.4.3.1 Product of vector and scalar

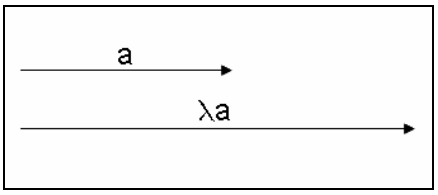


Figure 25 Product of Vector a and Scalar λ

To be able to change the length of a vector while keeping its direction the same, the vector may be multiplied by a scalar (that is, a regular number, not a vector). For example, multiplying a vector by 2, will double its length. Or similarly, multiplying "vector a" with scalar λ will increase its λ length times as illustrated in the following formula.

$$\lambda a = \begin{pmatrix} \lambda a_1 \\ \lambda a_2 \\ \lambda a_3 \end{pmatrix} \qquad (3)$$

Multiplication of vectors with scalars in SVM is basically the empowerment or promotion of individuals. When an individual obtains more power in an organization through some procedures such as a raise in his/her hierarchical position in the organization or empowerment, the magnitude of the strategy vector of that particular individual will also increase accordingly.

Of course the opposite cases are also applicable. If an individual looses his/her power, the magnitude of his/her strategy vector will decrease proportionally. Mathematically it refers to cases where the value of λ is less than 1 as illustrated in Figure 26.

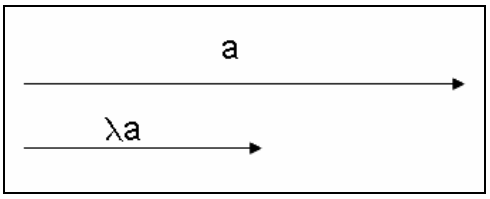


Figure 26 Multiplication of Vector a With λ Where λ is Less Than 1

3.2.4.3.2 Scalar product of two vectors

Second type of vector multiplication is called scalar product. Scalar product is also called the inner product or dot product.

Scalar product of vector a and vector b is expressed as $a \cdot b$

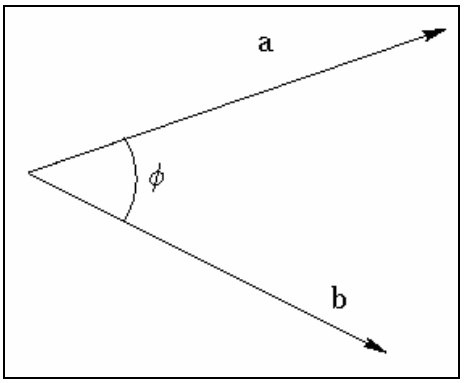


Figure 27 Scalar Product of Vector a and Vector b

If a1,a2,a3 are the components of vector a and b1,b2,b3 are the components of vector b, then the scalar product of vector a and b is as follows:

$$a \cdot b = a_1 b_1 + a_2 b_2 + a_3 b_3 \qquad (4)$$

This equation shows how to calculate the scalar product, but it does not tell anything about what the scalar product can actually be used for. It can be proven mathematically that the scalar product is also:

$$a \cdot b = \|a\| \|b\| \cos\phi \tag{5}$$

Note that the result of a scalar product is a scalar, not a vector!

The scalar product might be used for the explanation of *strategic solidarity* between organizational members. Assume that **a** and **b** represent the strategy vectors of two individuals. 5 cases might be observable.

1. If the angular (directional) difference between two individual strategy vectors is equal to zero it means that these two vectors are on the same direction and the level of strategic solidarity is at maximum positive value as shown below.

$$\begin{aligned} a \cdot b &= \|a\| \|b\| \cos\phi \\ a \cdot b &= \|a\| \|b\| \cos 0 \\ a \cdot b &= \|a\| \|b\| \end{aligned} \tag{6}$$

since

$$\phi = 0 \ \textit{and} \ \cos\phi = 1 \tag{7}$$

This case is illustrated in the following figure:

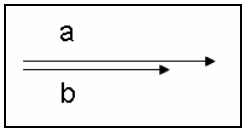


Figure 28 Vectors a and b with 0^o angular difference

2. If the angular difference between two individual strategy vectors is more than 0^o but less 90^o then the level of strategic solidarity is positive but not at its maximum value. There is an opposite proportion between the level of strategic solidarity and the angular difference between vectors. This case is explained below.

$$a \square b = \|a\| \|b\| \cos\phi$$
$$0 < a \square b < \|a\| \|b\| \tag{8}$$

since

$$0 < \phi < 90 \ \textit{and} \ 0 < \cos\phi < 1 \tag{9}$$

This case is illustrated in the following figure:

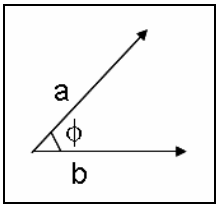


Figure 29 Vectors a and b With 0^o-90^o Angular Difference

3. If the angular difference between two individual strategy vectors is exactly 90^o then the level of strategic solidarity is zero which means there is neither support nor conflict. This case is explained below.

$$a \square b = \|a\| \|b\| \cos\phi$$
$$a \square b = \|a\| \|b\| 0 \qquad (10)$$
$$a \square b = 0$$

since

$$\phi = 90 \ and \ \cos\phi = 0 \qquad (11)$$

This case is illustrated in the following figure:

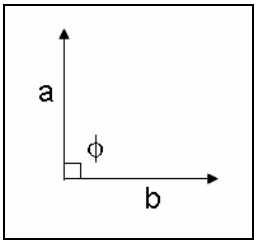


Figure 30 Vectors a and b With 90° Angular Difference

4. If the angular difference between two individual strategy vectors is more than 90° but less 180° then the level of strategic solidarity is negative but not at its maximum negative value.

$$a \square b = \|a\| \|b\| \cos\phi$$
$$0 > a \square b > -\|a\| \|b\| \qquad (12)$$

since

$$90 < \phi < 180 \ and \ -1 < \cos\phi < 0 \qquad (13)$$

This case is illustrated in the following figure:

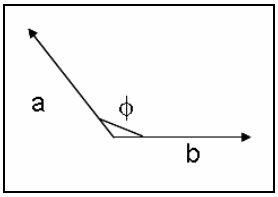


Figure 31 Vectors a and b With 90^o-180^o Angular Difference

5. Finally, if the angular difference between two individual strategy vectors is exactly 180^o then the level of strategic solidarity is at its maximum negative value or in other words the level of strategic conflict is at its maximum value.

$$\begin{aligned} a \square b &= \|a\| \|b\| \cos\phi \\ a \square b &= \|a\| \|b\| \cos 180 \\ a \square b &= -\|a\| \|b\| \end{aligned} \qquad (14)$$

since

$$\phi = 180 \ \textit{and} \cos\phi = -1 \qquad (15)$$

This case is illustrated in the following figure:

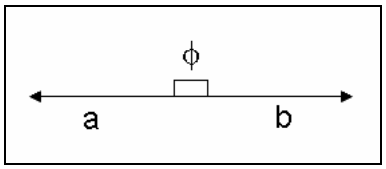


Figure 32 Vectors a and b With 180^o Angular Difference

The scalar product equals the lengths of the two vectors multiplied together with the cosine of the angle between them. This leads to the three main uses of the scalar product:

1. Depending on the angular difference between two vectors it is possible to expose some mathematical and strategic results. For example, if two vectors are perpendicular, their scalar product (or the level of *strategic solidarity*) equals zero. Furthermore, if the

angle between them is acute (< 90 degrees), the scalar product will be positive (strategic solidarity); if the angle is obtuse (> 90 degrees), the scalar product will be negative (strategic opposition).

2. You can find the exact angle between two unit vectors, by taking the arccosine of their scalar product. It means by analyzing the level of strategic solidarity between two individuals it is possible to calculate the angular difference between their vectors.
3. You can use the scalar product to find the projection of one vector onto another. This works as follows: the projection of vector a onto vector b is

$$proj_b(a) = b\left(\frac{a \cdot b}{b \cdot b}\right) \tag{16}$$

Projection of vector a on b is illustrated in Figure 33.

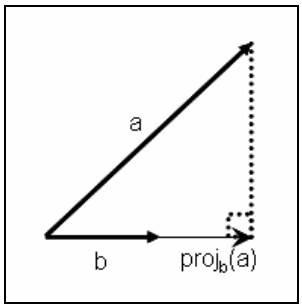


Figure 33 Projection of Vector a onto Vector b

According to SVM, individuals in an organization affect each other also at strategic level. This effect might be addressed as the projection (or influence) of one individual's strategy vector on some other's strategy vector. The level of effect is directly related to the angular and magnitude difference between two vectors.

3.2.4.4 Vector product of two vectors

The third way to multiply vectors is to take their cross product, also called the outer product or vector product. The result of the cross product of two vectors is again a vector (unlike with the

scalar product). However, the cross product is defined only for 3-dimensional vectors; it cannot be used with 2-dimensional or 4-dimensional ones.

Vector (cross) product of vector a and vector b is expressed as $a \times b$ and displayed as follows:

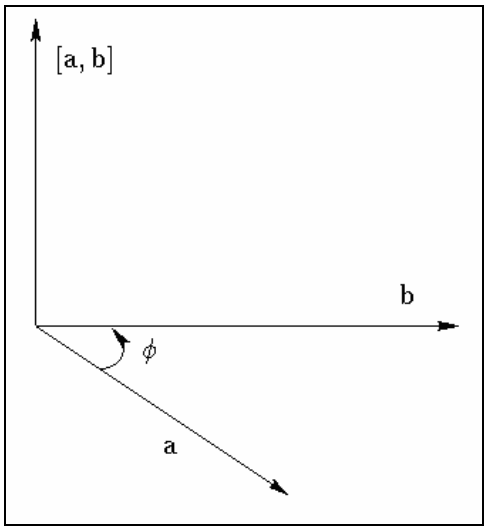


Figure 34 Vector Product of Vector a and Vector b

$$\left\|[a,b]\right\| = a\,b\,Sin\,\phi \tag{17}$$

where

$$[a,b] \perp a \;\; and \;\; [a,b] \perp b \tag{18}$$

In coordinate representation, vector product of two vectors might be expressed as a 3x3 matrices:

$$a \times b = [a,b] = \begin{vmatrix} \hat{x} & \hat{y} & \hat{z} \\ a_1 & a_2 & a_3 \\ b_1 & b_2 & b_3 \end{vmatrix} \tag{19}$$

or

$$a \times b = \begin{bmatrix} a_2 b_3 - a_3 b_2 \\ a_3 b_1 - a_1 b_3 \\ a_1 b_2 - a_2 b_1 \end{bmatrix} \tag{20}$$

a x b may also be defined as:

$$[a,b] = \hat{x}(a_2 b_3 - a_3 b_2) - \hat{y}(a_1 b_3 - a_3 b_1) + \hat{z}(a_1 b_2 - a_2 b_1) \tag{22}$$

or

$$[a,b] = \hat{x}(a_2 b_3 - a_3 b_2) + \hat{y}(a_3 b_1 - a_1 b_3) + \hat{z}(a_1 b_2 - a_2 b_1) \tag{23}$$

Geometrically, the cross product of vector **a** and vector **b** gives a vector that is perpendicular to both vectors **a** and **b**. This is the most common use of the cross product. The cross product can be used to find normal vectors, axes for rotation, and in other situations where perpendicular vectors are needed.

The length of the cross product calculated as follows:

$$\|a \times b\| = \|a\| \|b\| \sin \phi \tag{24}$$

That is, the length of the cross product is the lengths of the individual vectors, multiplied together with the sine of the angle between them. This means you can use the cross product to tell when two vectors are parallel, because if they are parallel their cross product will be zero.

In SVM, cross product of *aimed* and *measured organizational strategy vectors* provides outcomes for the evaluation of *the manageability of the strategy gap* in the organization. Before preceding to the details of the manageability of the strategy gap, it will be convenient to explain what “strategy gap” refers to.

3.3 Power Difference

As indicated above, the purpose of the "*strategy magnitude*" parameter in SVM is to determine the strength of the strategy. Five levels of strength (where 5 is the strongest and 1 is the weakest) is proposed to establish a magnitude spectrum and this is assumed to be appropriate to cover all hierarchical levels in an organization.

Unfortunately, the *strategy magnitude* parameter alone is not enough to explain the phenomenon of the strategy strength and establish a metric for the comparison (and summation) of strategy vectors from different magnitude levels.

The *strategy magnitude* expresses a conceptual hierarchy among the different levels of strategy strengths but it does not provide a precise numerical value. It is simple to conclude that the *strategy magnitude* level of 5 is always higher (or stronger) then the level of 1 but it requires further investigation to say "how much".

Comparing an innovative level 5 manager with 6 conservative level 1 employees as displayed in Figure 35, might help us to clarify the issue of the *power difference*. To be able to simplify the example, the other members of the organization are ignored in this case.

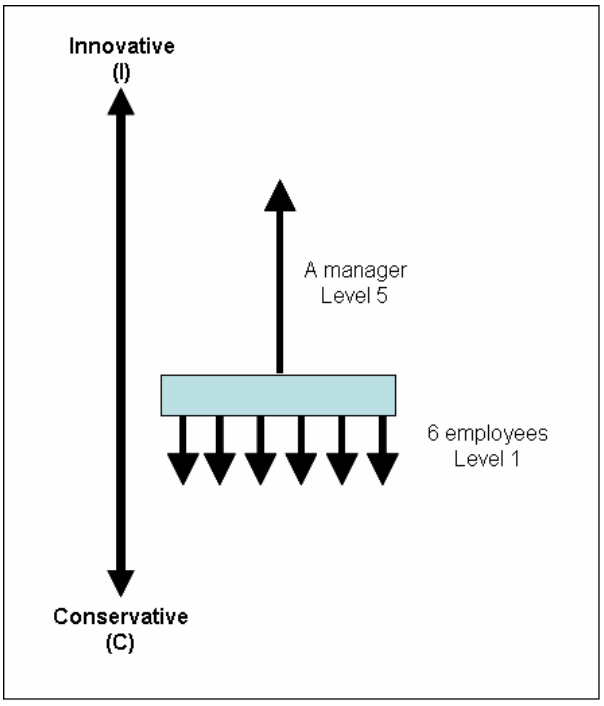


Figure 35 A Marginal Example About Power Difference

Since the innovative and the conservative directions are opposite, the vector summation rules permit us to use arithmetical tools. The total magnitude of vectors in one direction can be subtracted from the total magnitude of the vectors on the other direction.

If the effect of the *power difference* parameter is ignored it might be convenient to conclude that the direction of the organization will be conservative since the number of employees times the level of strategy magnitude (6*1=6) is greater than 5 (the strategy magnitude of the manager).

In real business environment (and similarly in SVM) a manager with high *strategy magnitude* is definitely more forceful then 6 low level employees. A pure arithmetical approach does not match the case in the real life. The solution is to use a parameter called "*power difference*".

Power difference resembles the term "power distance" which is coined and developed by Hosftede (1980) for the comparison of cultures. Power distance is defined as "the extent to which the less powerful expect and accept that power is distributed unequally" (Hosftede, 1980). This is basically a concept for the evaluation of the distance between the most powerful and the least powerful people in different cultures.

The concept of power difference has similar constructs with the concept of power distance. However, it is focused on the development and control of organizational strategies. Although both concepts are based on similar constructs, their interests are different. To eliminate any conflict between "power distance" and "power difference", it might be convenient to say that the latter is about organizational strategies.

The power difference is a parameter which indicates the down to earth and measurable difference between the strategy magnitudes and will be expressed with letters **pd** as an abbreviation in this study.

Another parameter which will be introduced in relation to the power difference is the **strategy magnitude value** which expresses the measured real value of magnitude for the corresponding magnitude level.

The power difference parameter (**pd**) also reveals the strategy magnitude value of the level 1 vectors. The strategy magnitude value of **n**th level of strategy magnitude is calculated by

taking the **n**th power of **pd**. Figure 36 demonstrates the strategy magnitude levels and corresponding strategy magnitude values for vectors.

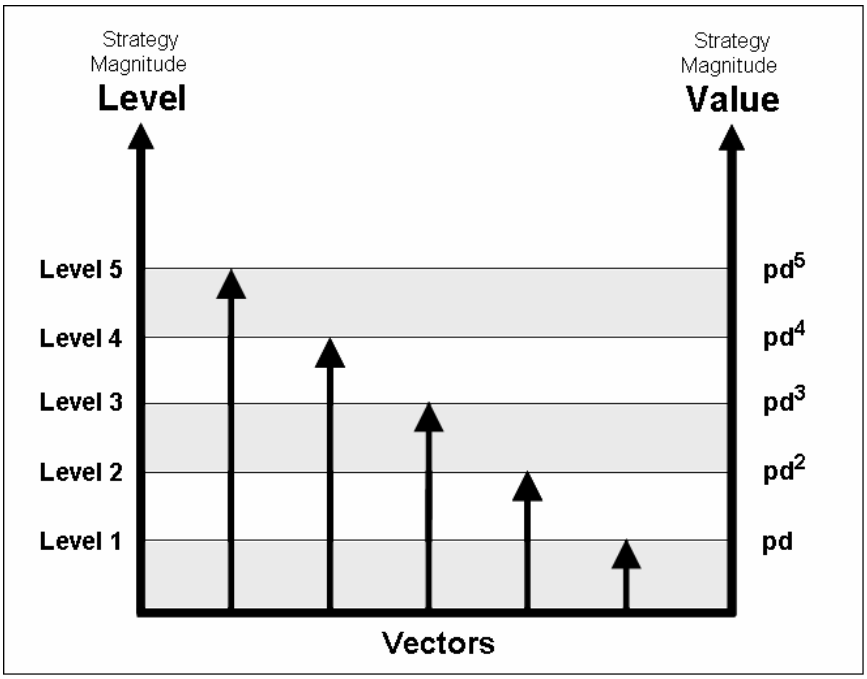


Figure 36 Strategy Magnitudes Values for Corresponding Strategy Magnitude Levels

The intention of this study to establish a tool to measure the value of **pd** for each organization in this research. The value of **pd** might be a number between 2-10 which will vary depending on the organizational culture and other related parameters such as organizational democracy, HRM approaches, etc. The marginal cases for **pd** (pd=2 and pd=10) are compared in Figure 37.

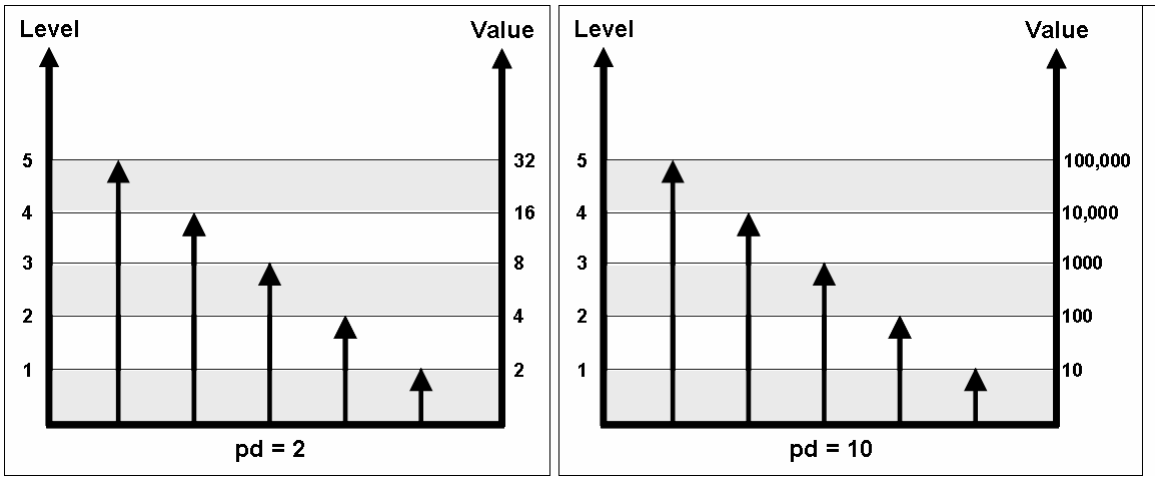


Figure 37 Comparison of **pd = 2** and **pd = 10**

3.4 Strategy Problems by SVM

At this stage of our study, it might be convenient to underline the difference between the terms "strategic problem" and "strategy problem".

The term "strategic problems" is not new in the literature (Lyles, 1981, 1987; Ramaprasad, and Mitroff, 1984) and it basically refers to the organizational problems which are capable to influence the strategy of the organization. In other words, strategic problems are not necessarily problems about the strategy itself but problems that are directly or indirectly related to the organizational strategy. For example, devaluation in a country might be addressed as a strategic problem for import companies since it will directly affect their cost and price considerations.

Strategy problems –as coined by the author- address problems that are purely about the organizational strategy. The evaluation of strategy problems is based on two methods:

- Comparison of intended and realized strategy vectors.
- Mapping of individual strategy vectors on the organizational chart.

The directional difference between the strategy vectors of the top management and low level employees might be addressed as a sample for strategy problem.

Since strategy problems also influence organizational strategy they may also be accepted as strategic problems. In other words, strategy problems may be accepted as a sub-group (or a specific example) of strategic problems. This approach is demonstrated in Figure 38.

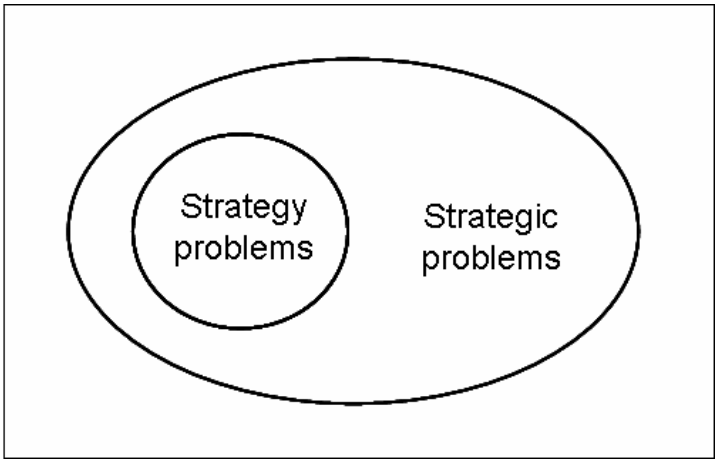


Figure 38 Comparison of Strategy Problems and Strategic Problems

As mentioned in the section on research questions, another tool provided by SVM is related to the assessment of strategy problems and categorizes strategy problems in the following three major groups:

a) Strategy Deviation,
b) Strategy Deficiency, and
c) Strategy Anomalies.

3.4.1 Strategy Deviation

Many scholars have claimed that strategy direction is supposed to be determined by top management (Zuboff, 1988, Zaleznik, 1977, Spender and Grant, 1996) and this process is accepted as the core of the senior-executive task (Spender and Grant, 1996). Some others have

emphasized the importance of employee involvement in strategy manufacturing. Either manufactured exclusively by top managers or with the participation of employees, the predetermined or aimed strategy of the organization may not be realized.

One problem might be the deviation in the direction. ***Strategy deviation*** in SVM represents the difference between the measured and aimed organizational *strategy directions.* This is shown as an angular deviation in SVM as shown in Figure 39.

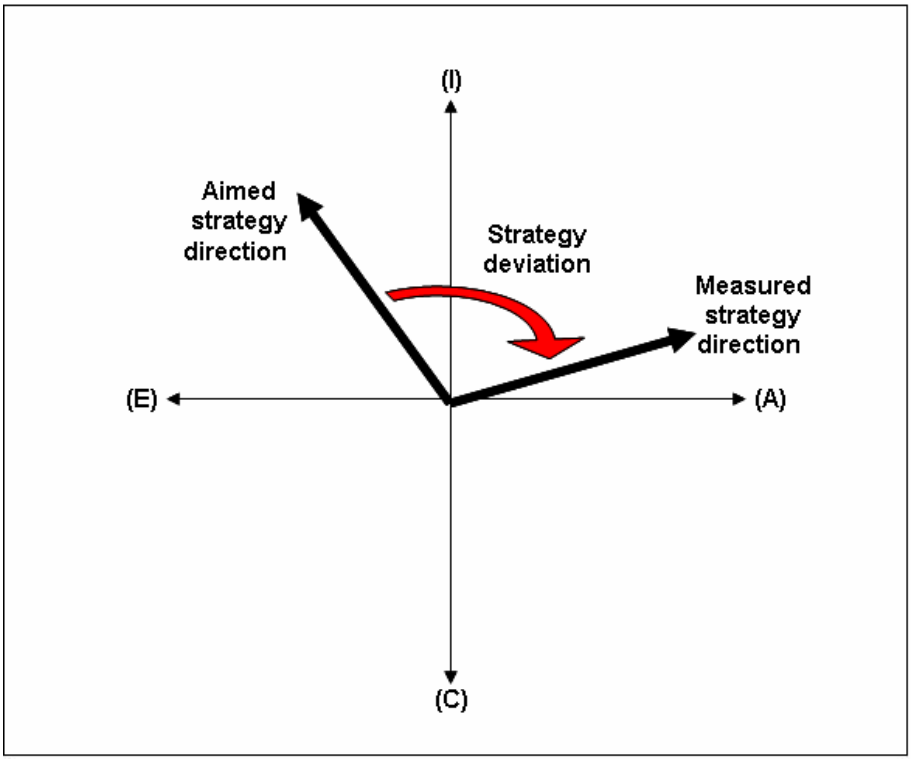


Figure 39 Strategy Deviation

In some cases, even though the measured and aimed *strategy directions* match, organizations might need to adjust their strategies in response to environmental changes (Miles and Snow, 1984). But this is not in the scope of this study.

3.4.2 Strategy Deficiency

Strategy deficiency represents the difference between the aimed and measured strategy magnitudes. Graphical explanation of the *strategy deficiency* is shown in Figure 40.

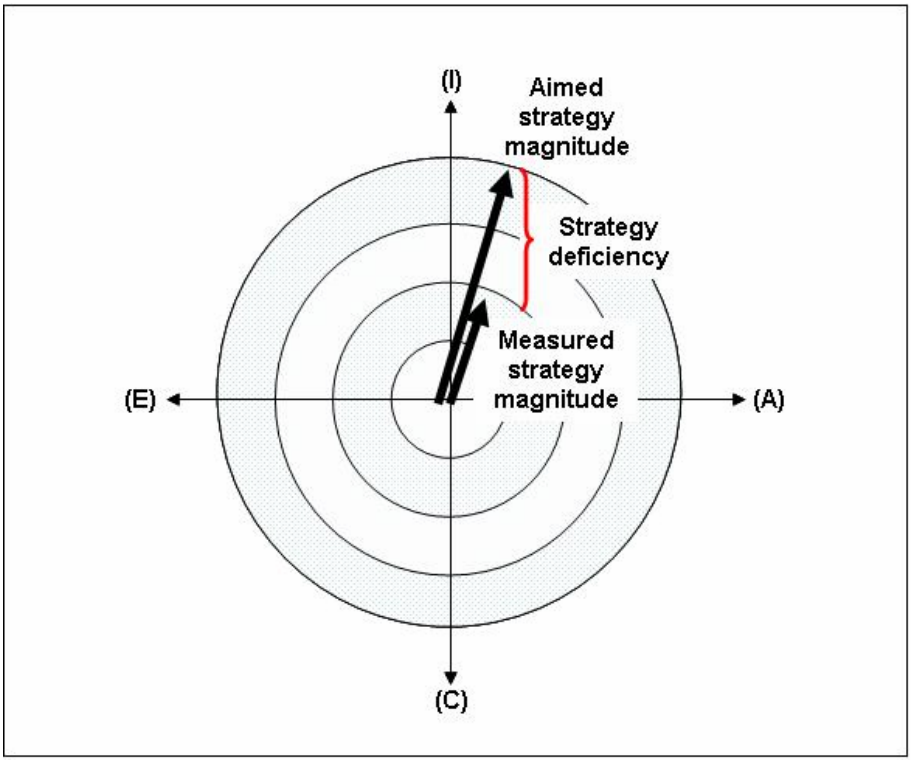


Figure 40 Strategy Deficiency

3.4.3 Strategy Anomalies

Merriam-Webster Online Thesaurus (2005) defines anomaly as "a person, thing, or event that is not normal". My intention for using this word was to express the organizational structures that are not considered normal (or healthy).

For the diagnosis of strategy anomalies, SVM proposes a graphical analysis tool called **vectorial mapping**. Vectorial mapping, is formed of individual vectors that are drawn on a detailed organizational chart which includes all members of the organization.

The model suggests that a healthy organization is composed of vectors with same or close *strategy directions* and *magnitudes* that are directly proportional to the hierarchical levels of the individuals. Schematic display of an ideally healthy organization is shown in Figure 41.

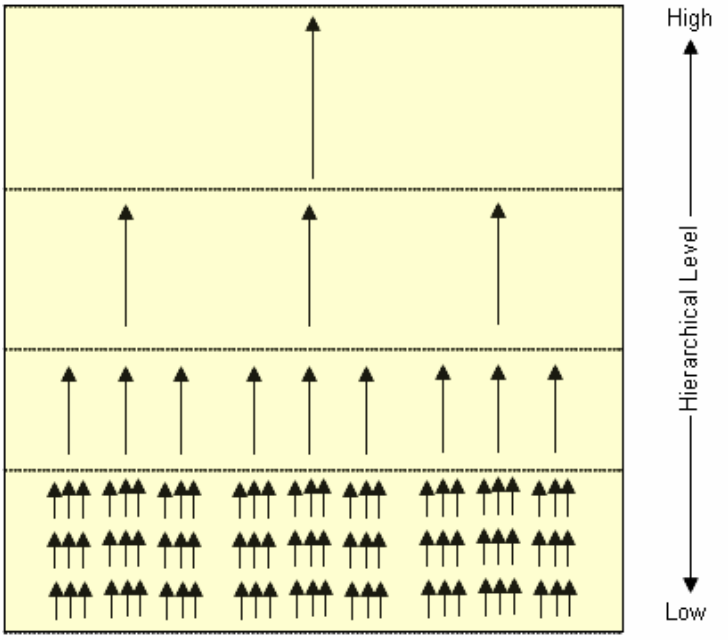


Figure 41 Anatomy of an Ideal Organization

In an **ideal organization**, the strategy directions of all individuals and the direction of the vectorial sum which refers to the overall *strategy direction* of the organization are all the same. In this case there is no deviation from the intended strategy. And similarly the magnitudes of the individual vectors are formed in an hierarchical order. The magnitude of the vectorial sum is also strong enough as might be intended by the strategy manufacturers.

Strategy anomalies represent situations where the organizational vectorial structure does not have a semblance of a healthy organization. Five main categories are proposed to express the extreme cases in strategy anomalies:

1. Chaos
2. Resistance
3. Grouping
4. Disorder
5. Maladministration

3.4.3.1 Chaos

Dooley, Johnson, and Bush (1995) comment that “Chaos Theory” has developed along two dimensions. Experimentalists (as popularized in Gleick 1987) found ways to discover deep and complex patterns in seemingly random, or "chaotic" systems. Prigogine and Stengers (1984), among others, use chaos to describe how order can arise from complexity through the process of self-organization. The common point of these two dimensions is that both assume that there is - not necessarily apparent but – a sort of order. This use of the word chaos is at odds with common parlance, which suggests complete disorder.

In contrast with the above mentioned approaches, “chaos” is used to express a disordered, complex, nonlinear, and dynamic situation in SVM as demonstrated in Figure 42. Expecting to observe a long term order in chaos (as a strategy anomaly in SVM) would be too much optimism.

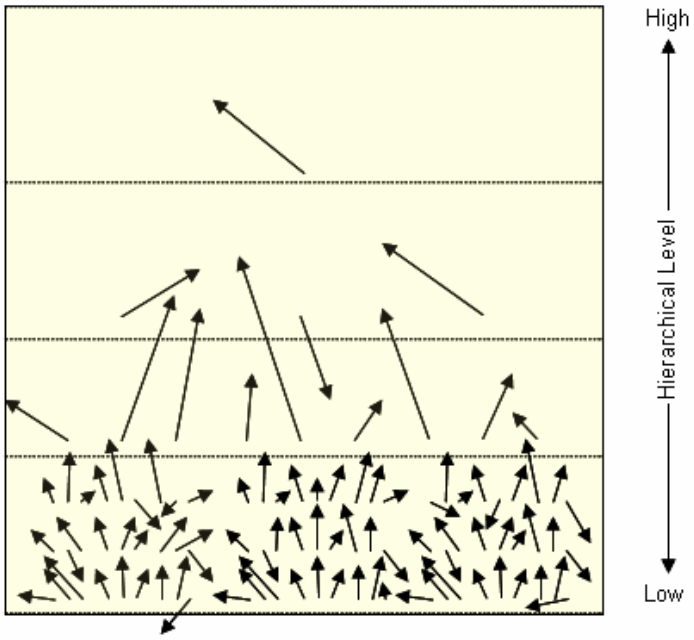


Figure 42 Anomaly of “Chaos”

3.4.3.2 Resistance

Zaltman and Duncan (1977) define resistance as "*any conduct that serves to maintain the status quo in the face of pressure to alter the status quo*" (cited in Kirkman, and Shapiro,1997). This kind of resistance is examined by many scholars especially in the last few decades (Braverman, 1974, Buroway, 1979; Knights and Virdubakis, 1994; Maurer, 1996; Knights, D and Macabe, 2000; Piderit, 2000; Elmes and Taylor, 2005). On the contrary to the existing literature, resistance in SVM is not about maintaining a status quo but about not being concordant with the predefined organizational strategy in terms of strategy direction as shown in Figure 43.

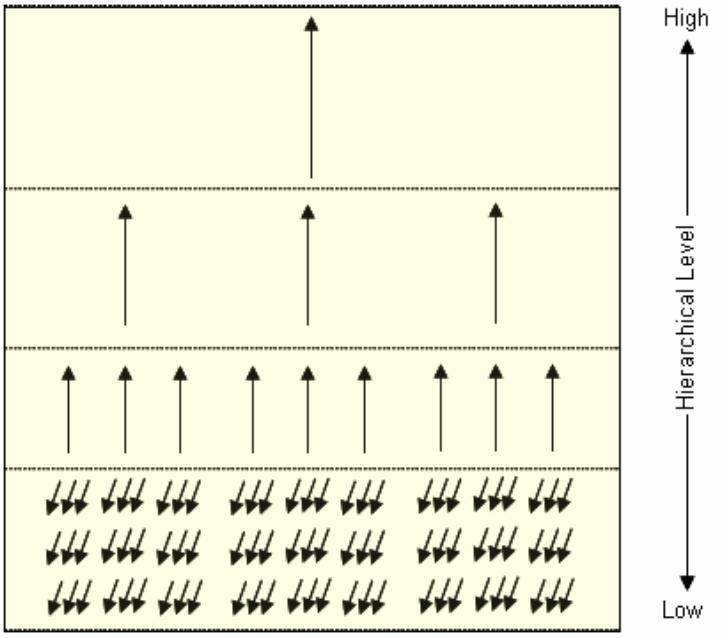


Figure 43 Anomaly of "Resistance", e.g. Low Level Employee Resistance

According to Maurer, the lack of employee involvement in the organizational strategy decisions –especially change- is the single largest reason for resistance. He claims that coping with resistance for leaders requires vision, persistence, courage, an ability to thrive on ambiguity, and a willingness to engage those who have a stake in the outcome (1996).

3.4.3.3 Grouping

Top managers must affect the behaviors of organizational members (Ireland and Hitt, 2005). Effective strategy leaders are those who find glory in the whole team reaching the summit together (Nagle, 1995).

Chandler (1962) also emphasized the importance of the alignment of subunits with the objectives of the larger corporation.

Grouping refers to a strategy anomaly where members of any formal or informal group (or department) in an organization have individual vectors with similar strategy directions which is not compatible with the overall strategy direction of the organization.

In the worst case, all formal (or informal) groups in the organization might have their own strategy directions. A sample case for department grouping is demonstrated in Figure 44.

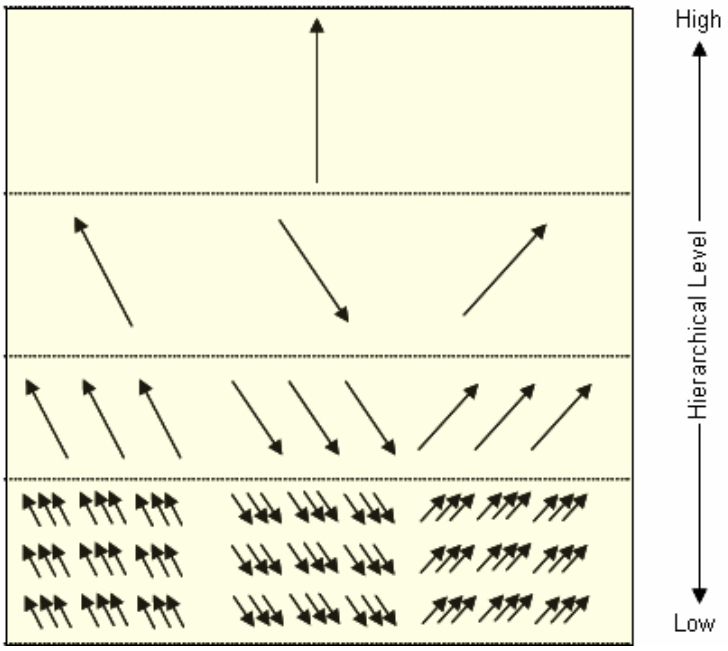


Figure 44 Anomaly of "Grouping", e.g. Department Grouping

The difference between grouping and resistance is that in grouping, individuals do not necessarily have strategy directions which are opposite to the organizational strategy direction. Primary intention is not to resist organization but support the group.

3.4.3.4 Disorder

Weber (1978) introduced a firmly ordered hierarchy of super- and subordination as one of the principles for an "ideal" bureaucracy. Halal (1994) claimed that “hierarchy” dominated the Industrial Age because it excelled at managing the routine tasks of manufacturing and an uneducated work force, but modern economies require organic systems composed of numerous small, self-guided enterprises that can adapt to their local environment more easily, creating a form of organization that operates from the bottom up. The concept of empowerment of the low level organizational members is supported by other scholars (Freeman, 1992, Wheatley, 1992) as well. This shall not be considered as a strategy problem. However, in some cases, managers might face working conditions with uncertain lines of authority (Useem, Cook, and Sutton, 2005) which is considered to be a problem if it exists in strategy management. This is coined as disorder in this research. Disorder as a strategy anomaly refers to a hierarchical spoilage in terms of strategy magnitude. A sample case is demonstrated in Figure 45. As can be seen, the *strategy magnitude* of the leader (the top manager) is less than some second or even third level managers. Similarly, the *strategy magnitudes* of individuals at the same hierarchical level are not the same, either. Some of them are too weak and some others are too strong. In this research, this type of strategy problem is referred to as “*disorder*”.

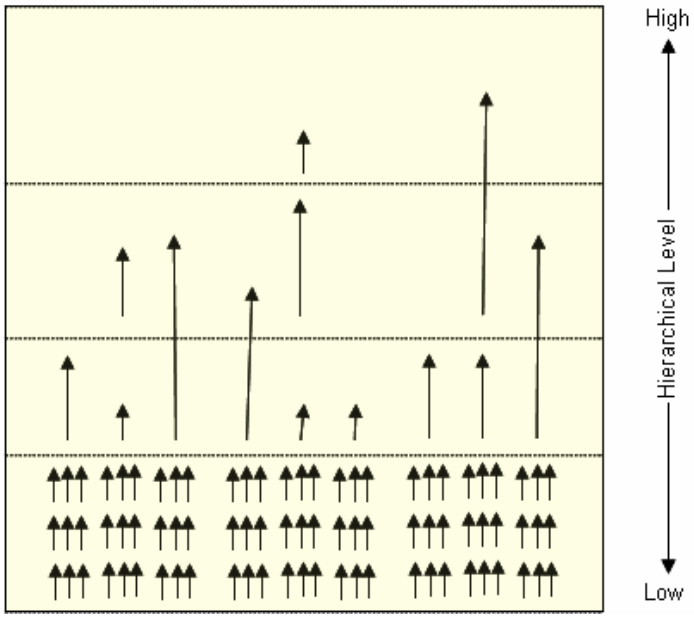


Figure 45 Anomaly of "Disorder"

3.4.3.5 Maladministration

Strategic leadership is defined as a person's ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organization (Ireland and Hitt, 2005).

Hurst et al. (1989) and Porter (1991) argue that intuition and vision play an important role in strategy. They point out that the history of business suggests that many strategies develop as a result of managers having creative and intuitive capacities (cited in Bakir, 2001). What would be the case when the managers do not have adequate creative and intuitive capacities? This introduces another type of strategy anomaly which might be coined as maladministration.

Levy et al. (2001) claim that disciplining labor is a part of corporate strategy. Maladministration as demonstrated in Figure 46, arises when managers fail to discipline low level individuals or, in other words, control the strategy direction of individual vectors.

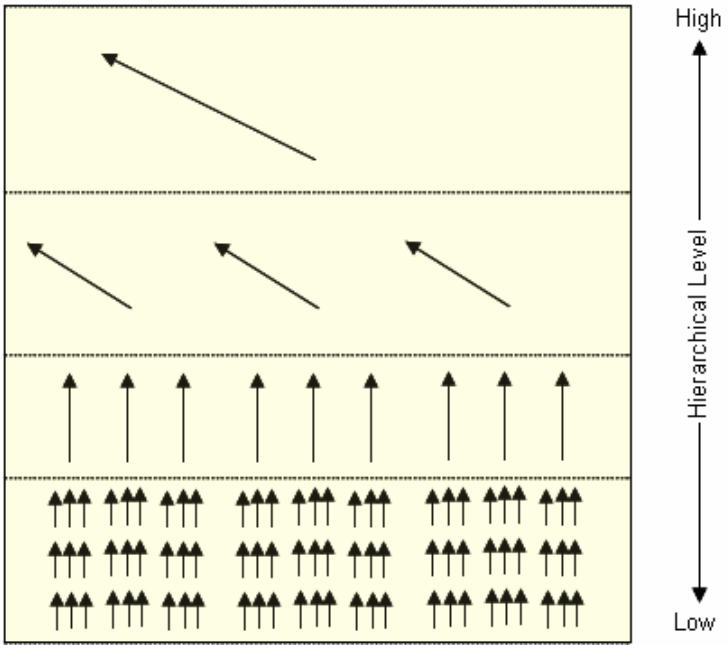


Figure 46 Anomaly of "Maladministration" e.g. Top Management Maladministration

Bennis believes that having strategic leadership centered on a single person or a few people at the top of a hierarchical pyramid is not beneficial for the organization (1997). To prevent this harmful effect of this kind of leadership, effective strategic leaders must either adjust themselves in accordance with their organization or adjust their organization according to their strategic values.

3.4.4 Strategy Mapping and Strategy Status

As introduced before in this section, another tool that is provided by SVM is called *strategy mapping* which might be used for the assessment of *strategy status. Strategy mapping* is basically a kind of projection where individual strategy vectors are placed on the formal organizational chart. This tool helps us and managers to easily observe the *strategy status* of the organization and to identify some strategy problems, the so called *strategy anomalies.*

Strategy mapping displays the strategy status of the organization and it is quite easy to interpret. However, determination of strategy anomalies, if any, may not always be easy to reveal. Main reason for this is that a couple (or all) of the strategy anomalies might appear at the same time and it might be difficult to perceive them.

As an example, imagine an organization with four hierarchical levels and three divisions. The organizational chart of our example will look like the one in Figure 47.

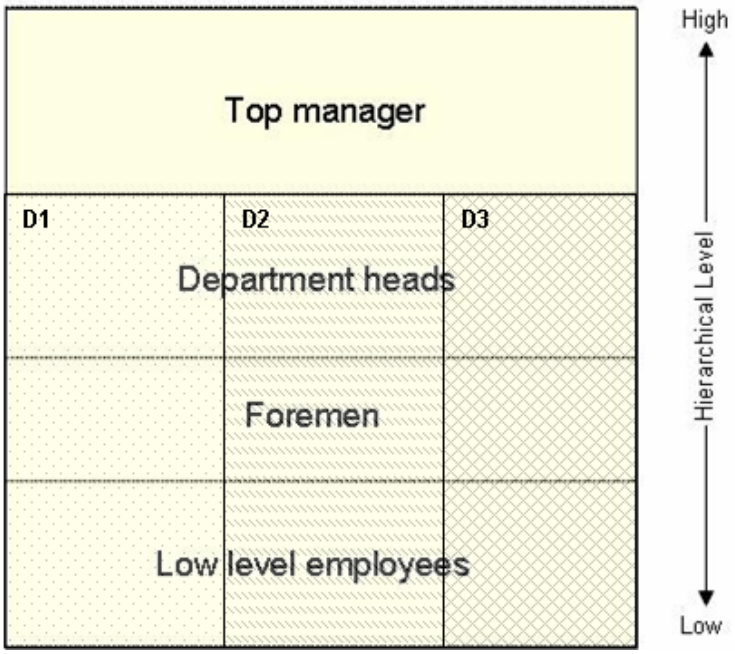


Figure 47 A Sample Organizational Chart

After measuring the individual strategy vectors of all members of the organization we can locate those vectors on the organizational chart and obtain the strategy status as shown in Figure 48.

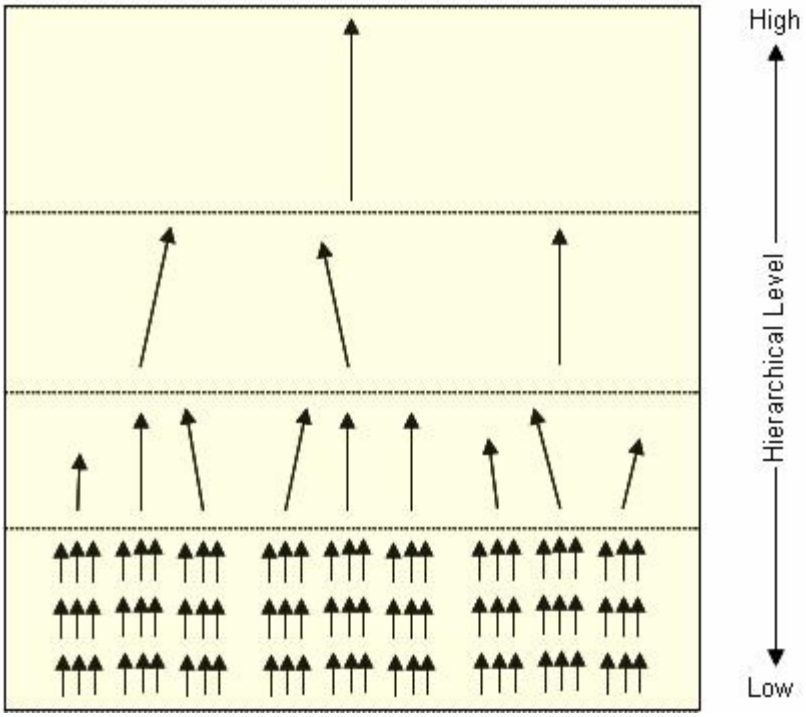


Figure 48 Strategy Mapping and Strategy Status of a Sample Organization

3.5 The Strategy Gap

Strategy gap can be summarized as the difference between the intended and realized organizational strategy vectors. Although this definition resembles the intended-realized model of Mintzberg (1994b) which is shown in Figure 49, there are significant differences between my definition and Mintzberg's model.

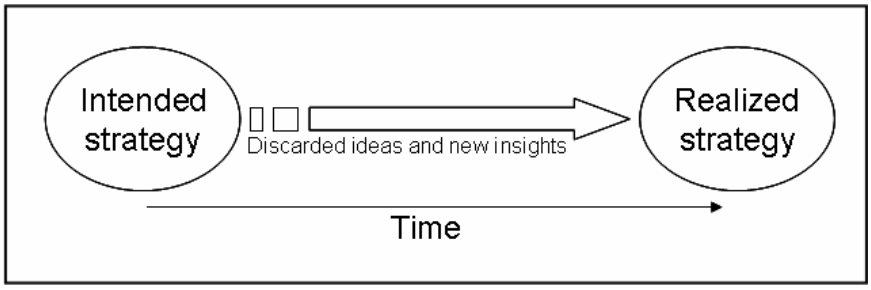


Figure 49 Comparison of Intended and Realized Strategies (Adopted from Mintzberg 1994a, b)

Mintzberg (1994a, b) points out that realized strategies do not always resemble the intended strategies since intended strategies will change in time due to environmental and/or organizational factors.

In this research the focused difference is basically not between the intended and realized strategies but between the aimed and measured organizational strategy vectors as illustrated in Figure 50.

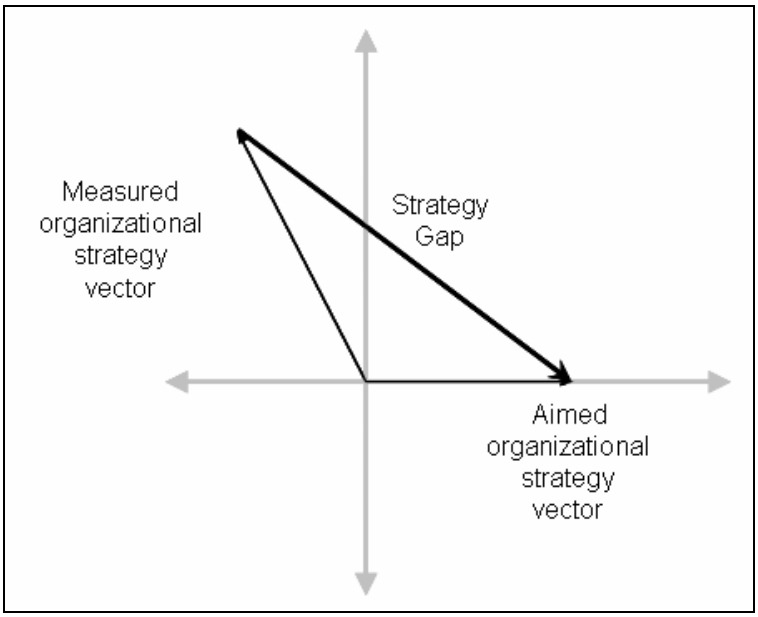


Figure 50 The Strategy Gap

The strategy gap of the organization may be derived from difference between the intended and realized strategy vectors. Strategy deviation and strategy deficiency might have similar reasons. They both might address problems such as low communication, not shared and clearly defined organizational objectives (Long and Cardinal, 2005), lack of organizational culture and unity (Krishnan, Martin, and Noorderhaven, 2006), low motivation, low empowerment, lack of involvement and dedication, etc.

The solutions for both types of strategy problems might be similar. Some of them might be listed as empowerment of employees, information sharing, clarification of company vision and objectives, employee involvement, carefully designed formal structure, balance between responsibilities and authorities, etc.

However, the contributions of strategy deviation and strategy deficiency to the organizational strategy performance might be different. So, for the evaluation of organizational strategy performance the diagnosis of strategy deviation and strategy deficiency shall be performed separately.

The term gap is not new in the literature. Ansoff (1962) describes "gap" as the difference between where organizations are where they want to be. In SVM, the term "the strategy gap" is used and has similar meaning. The strategy gap refers to the difference (both angular and magnitude) between aimed and measured organization strategy vectors and includes both the strategy deviation and the strategy deficiency as explained before.

The strategy gap is basically a vector directed from the measured organizational strategy vector to the aimed organizational strategy vector. In other words, the strategy gap vector is the subtraction of measured organizational strategy vector from the aimed organizational strategy vector.

$$The\ Strategy\ Gap = b - a \tag{25}$$

a : *Aimed Organizational Strtegy Vector*
b : *Measured Organizational Strtegy Vector*

Since the strategy gap is a vector, it includes two parameters: The direction and the magnitude. The analysis of the direction of *the strategy gap vector* is not included in the scope of this research and requires further study. The magnitude of *the strategy gap vector* refers to the vitality of the strategy problems (composed of the strategy deviation and the strategy deficiency) and is calculated as follows:

$$\left|The\ Strategy\ Gap\right| = \sqrt{a^2 + b^2 + 2\,ab\,Cos\,\theta} \tag{26}$$

a : *Aimed Organizational Strtegy Vector*
b : *Measured Organizational Strtegy Vector*
θ : *The strategy deviation*

3.5.1 The manageability level

The manageability level refers to the manageability level of the strategy gap. Depending on the angular difference between the aimed and the measured organizational strategy vectors, the manageability of the strategy gap will vary. The manageability level might be calculated by using "vector product" method. The vector product of two vectors is another vector. The magnitude of the vector product refers to the area between two factor vectors and it is formulated as follows:

$$|a \times b| = ab\,Sin\,\theta \qquad (27)$$

θ : *Angular difference between vectors a and b*

The area obtained by the vector product of sample vectors a and b is illustrated in Figure 51.

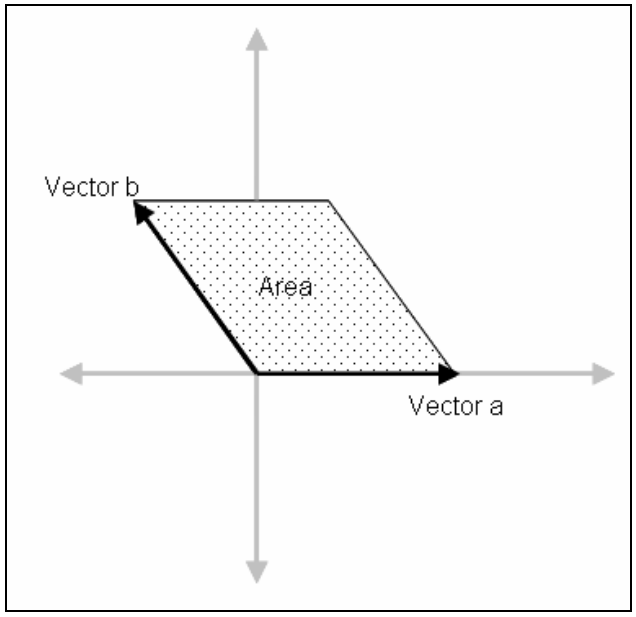


Figure 51 The Manageability Strategy Gap

3.5.2 Cases of the manageability levels

In real business environment organizations might experience various kinds of scenarios. All of these scenarios will occur in one of the following alternative regions.

1. Region 1 is the area where the relative angular difference between aimed and measured strategy vector is between 0^o and 90^o .
2. Region 2 is the area where the relative angular difference between aimed and measured strategy vector is between 90^o and 180^o.
3. Region 3 is the area where the relative angular difference between aimed and measured strategy vector is between 180^o and 270^o.
4. Region 4 is the area where the relative angular difference between aimed and measured strategy vector is between 270^o and 360^o.

The regions are determined according to the angular difference between the aimed and measured organizational strategies. It might be convenient to highlight that the angular difference is accepted to be relative in this study. In other words, as far as the angular difference is the same, the real directions of aimed and measured organizational strategy vectors have not been taken into consideration.

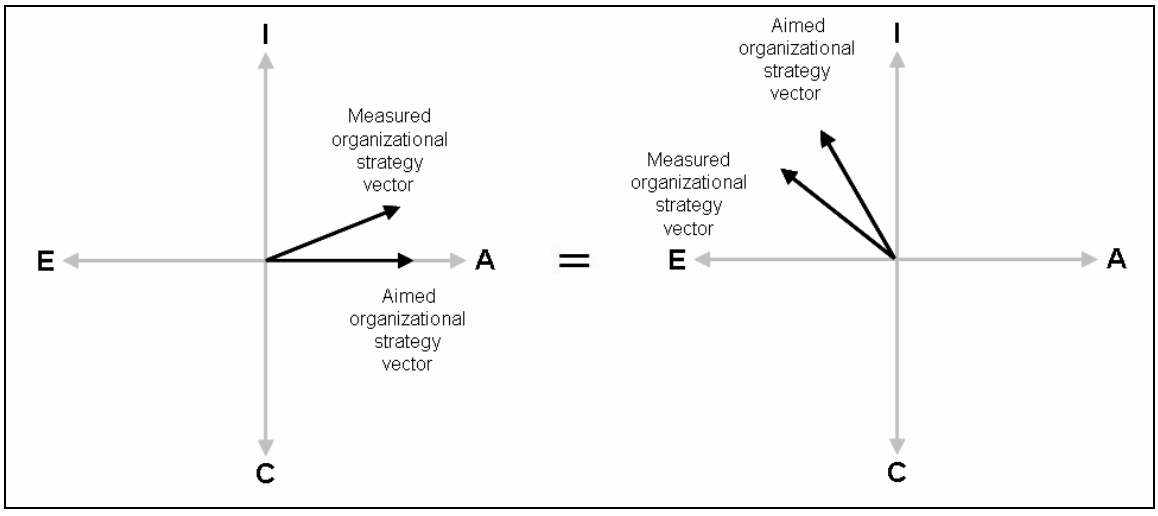


Figure 52 Comparison of the Relativity for Two Sample Cases

Of course this approach might be valid only for the calculation of the manageability level (of the strategy gap). The procedures for the management of the strategy gap will vary according the actual directions of the aimed and measured organizational strategy vectors. These procedures are not included in the scope of this study.

In the following paragraphs one sample from each region will be evaluated.

3.5.2.1 Region 1

In this case the angular difference between aimed and measured organizational strategy vectors (strategy deviation) is less than 90^o as illustrated in Figure 53.

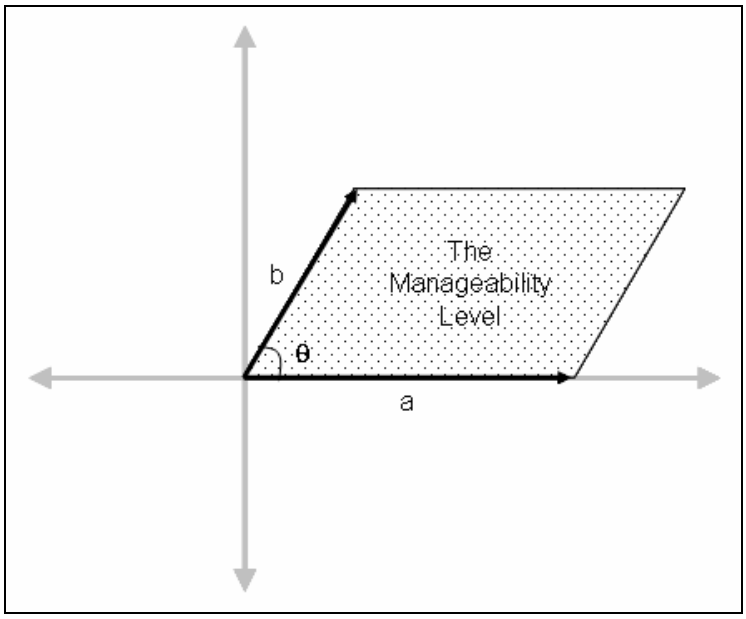


Figure 53 The Manageability Level of the Strategy Gap for Strategy Deviation < 90^o

The area is calculated as follows:

$$|a \times b| = ab\,Sin\,\theta \qquad (28)$$

θ : *Angular difference between vectors a and b*

3.5.2.2 Region 2

In this case the angular difference between aimed and measured organizational strategy vectors (strategy deviation) is between 90^o and 180^o as illustrated in Figure 54.

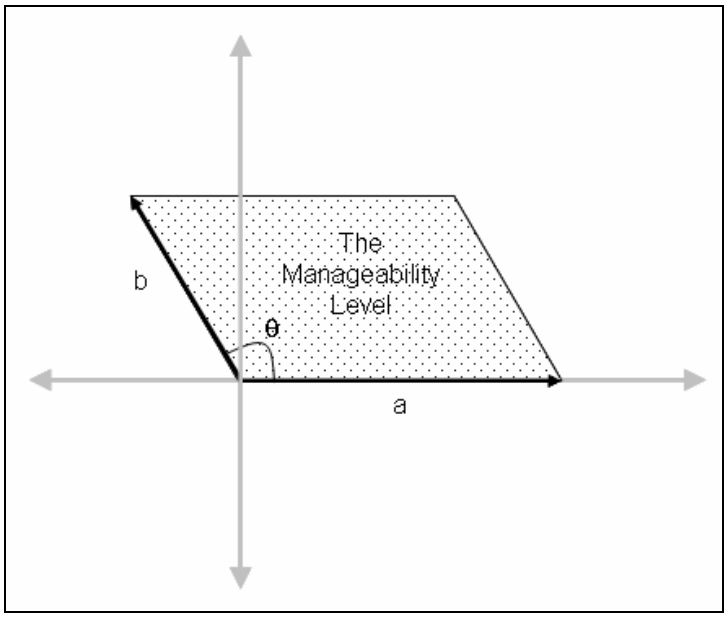


Figure 54 The Manageability Level of the Strategy Gap for Strategy Deviation 90^o-180^o

The area is calculated as follows:

$$\left|a \times b\right| = ab\,Sin\,\theta \qquad (29)$$

θ : *Angular difference between vectors a and b*

3.5.2.3 Region 3

In this case the angular difference between aimed and measured organizational strategy vectors (strategy deviation) is between 180^o and 270^o as illustrated in Figure 55.

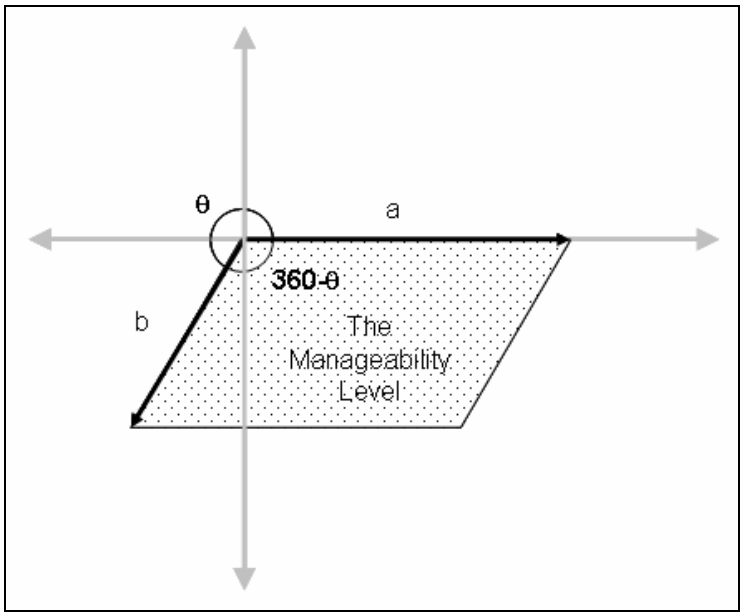


Figure 55 The Manageability Level of the Strategy Gap for Strategy Deviation 180^o-270^o

The area is calculated as follows:

$$|a \times b| = ab\,Sin(360 - \theta) \qquad (30)$$

θ : *Angular difference between vectors a and b*

3.5.2.4 Region 4

In this case the angular difference between aimed and measured organizational strategy vectors (strategy deviation) is between 270^o and 360^o as illustrated in Figure 56.

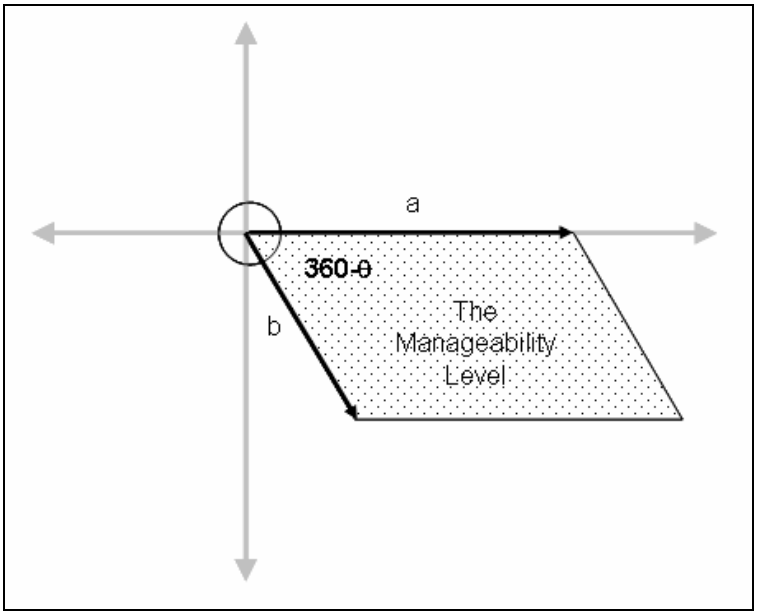


Figure 56 The Manageability Level of the Strategy Gap for Strategy Deviation 270^{o}-360^{o}

The area is calculated as follows:

$$\left|a \times b\right| = ab\,Sin(360 - \theta) \tag{31}$$

θ : *Angular difference between vectors a and b*

3.6 Linking SVM with literature

One of the main intensions of this study is to link the basic foundations of the proposed model with the existing management literature. Two well-known studies are found to be interrelated: IMM and Mintzberg's Structure Typology.

3.6.1 IMM and SVM

As introduced in the previous section, Integrated Management Model (IMM) is a generic and holistic tool for the assessment organizations (Bleicher, 1999; Schwaninger, 2000). Nine cells of IMM might be useful for analysis of the impact of a specific organizational strategy vector on the different dimensions of an organization.

IMM proposes three hierarchical layers which might also be applied to SVM as illustrated in Figure 57.

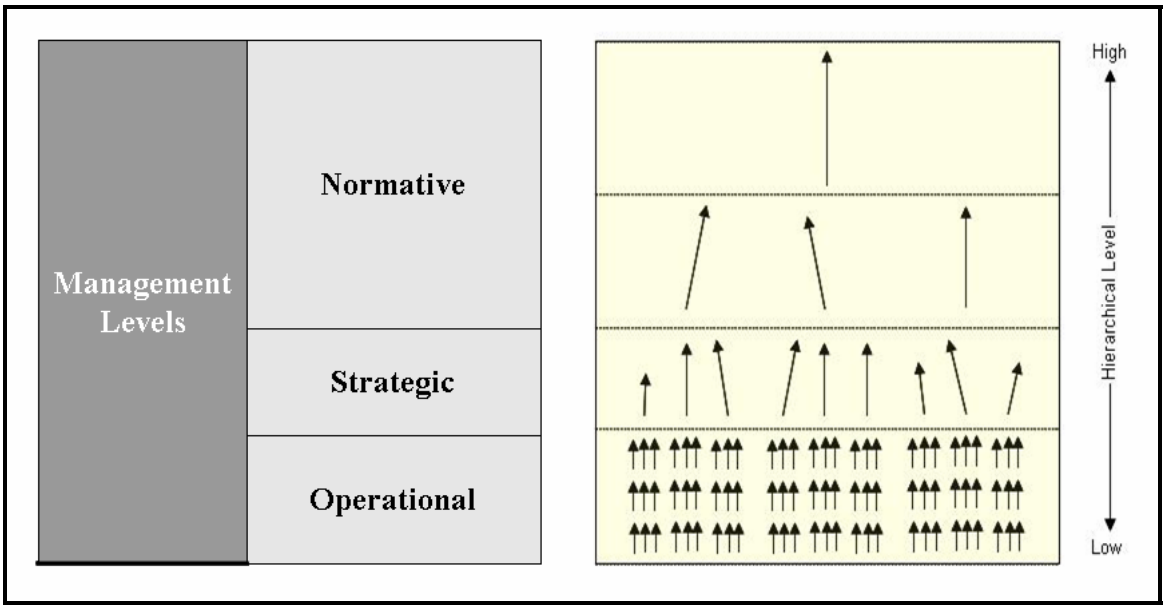


Figure 57 Management Levels on SVM

In most of the cases top managers are responsible for normative level organization related issues such as goals, structure and behavior. Similarly middle line managers handle strategic level parameters. Finally, the lowest level members of organizations are responsible for operational parameters.

Second order tensors are expressed with 3 by 3 matrices (nine values) to explain the different impacts of vectors (first order tensors) on different perspectives of a phenomenon.

IMM uses nine cells to interpret different perspective of organizations. By combining SVM with IMM, as illustrated in Figure 58 it might be possible to explain the different impacts of an organizational strategy vector on the different dimensions of an organization.

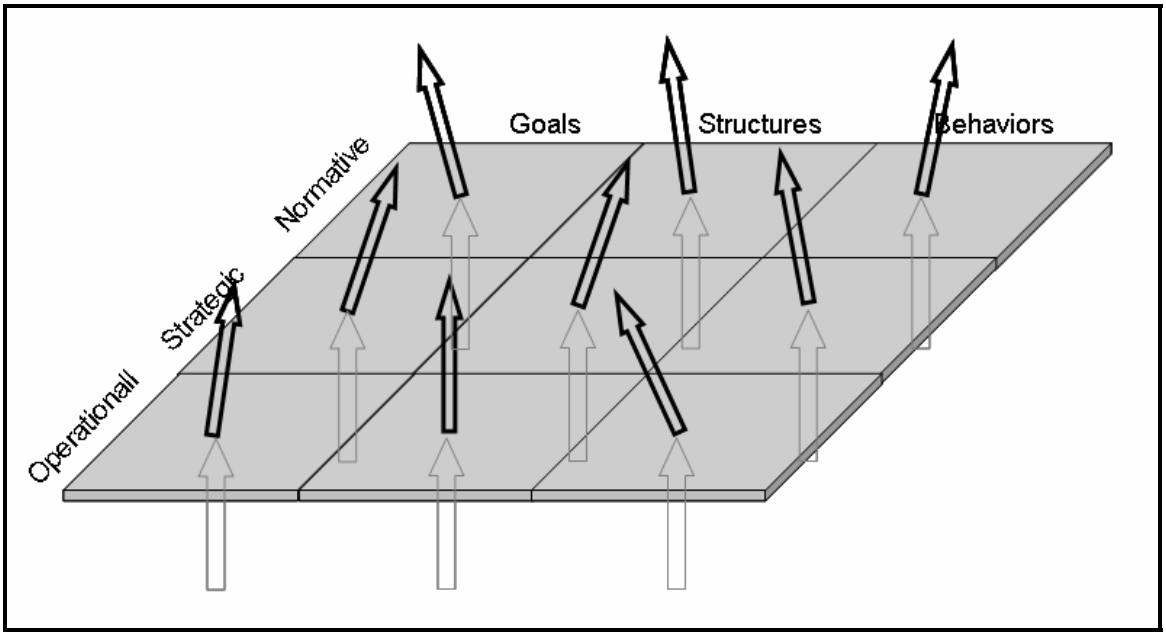


Figure 58 Demonstration of Organizational Strategy Tensors on IMM

3.6.2 IMM, SVM, and Mintzberg's Structure Typology

Linking Mintzberg's Structure Typology (Mintzberg, 1979) with SVM and IMM is also possible. As illustrated in Figure 59, when all three concepts are combined a useful graphic might be obtained for the evaluation of organizational and hierarchical issues.

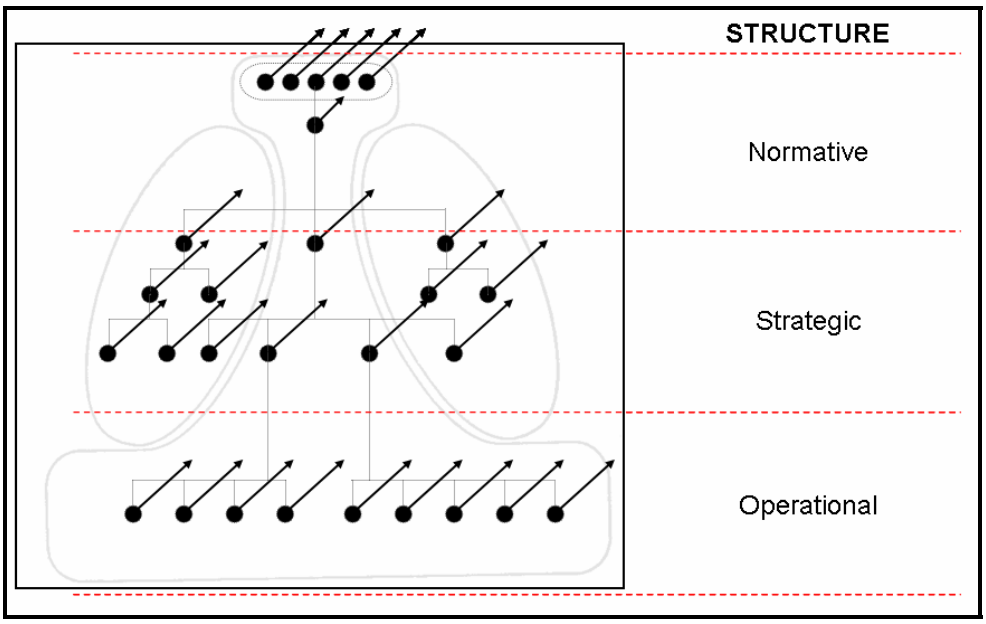


Figure 59 Combining IMM, SVM, and Mintzberg's Structure Typology

This approach might also be extended to all five types structures: simple structure, machine bureaucracy, professional bureaucracy, divisionalized form, adhocracy (Mintzberg, 1979).

3.6.3 Impacts of organizational parts

As explained in detail in the previous section, Mintzberg (1979) introduces five parts of organization: Operating Core, Strategic Apex, Middle Line, Technostructure, Support Staff. Each of these parts implies characteristic impacts on the organization as illustrated in Figure 60.

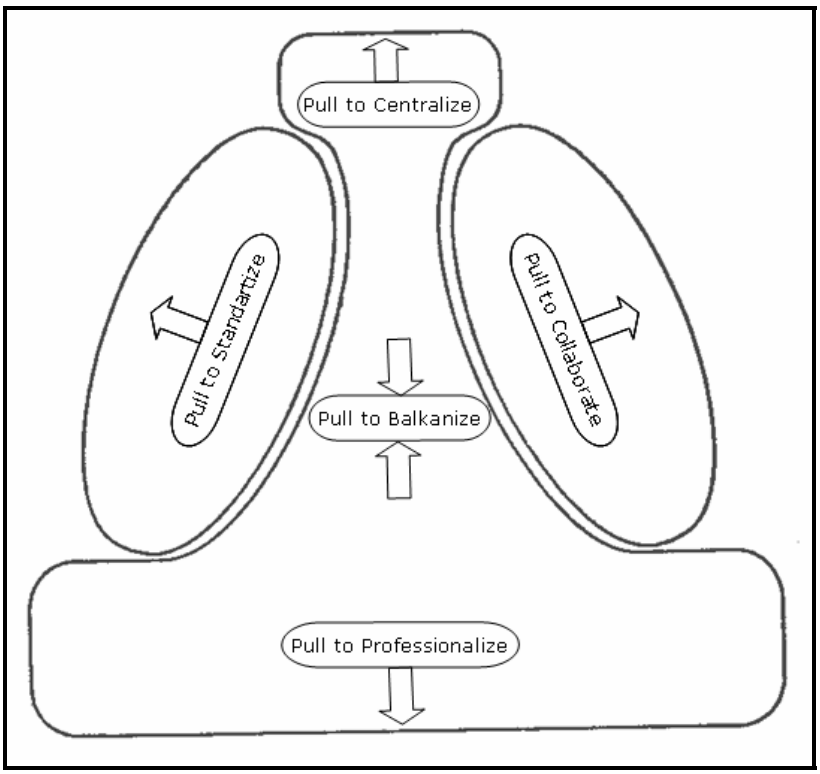


Figure 60 Impacts of Organizational Parts on the Organization (Adopted from Mintzberg, 1979)

Mintzberg's (1979) illustration highlights the impacts of each part with vector like drawings. However these drawings are just for generic expressions of differences. They do not imply real directions and real magnitudes. Besides, Mintzberg does not foresee any tool for the measurement of these impacts.

According to Mintzberg's approach, strategic apex encourages for more alignment, centralization, middle managers try to protect autonomy and room to run their own unit and pull to Balkanization, techno structure pulls for standardization, believes in measurement and monitoring, support staff prefers less hierarchy, more collaboration (Bolman and Deal, 1991).

SVM might be useful for the measurement of each departmental impact in terms of organizational strategy. By summing the individual strategy vectors in a department (part) it will be possible to calculate the departmental strategy vector. And, by comparing all departmental strategy vectors, it might be possible to evaluate the impacts of each department (part) on the organizational strategy.

4 RESEARCH DESIGN AND METHODOLOGY

4.1 Introduction

This research is concerned with see how individuals (members of an organization including top managers and low level employees) shape the overall strategic direction of an organization. Particular issues include the measurement of the individual vectors, calculation of organizational vector (also called resultant vector and obtained by the vectorial summation of all individual vectors), and determination of strategic problems.

4.2 Research Outline

This research has gone through three sequential phases: Preparation phase, design and development phase, and implementation and validation phase. These phases are briefly introduced below.

4.2.1 Preparation Phase

Strategy is difficult to comprehend (Ansoff and McDonnell, 1990; Mintzberg and Quinn, 1991) and requires elaborate literature review (Authors opinion) and empirical investigation to gain a deeper insight of the phenomenon and the meaning it has for those who experience it (Bakir, 2001). This research was designed to cover both theoretical and empirical aspects of strategy and has embraced two sequential preparation phases.

First stage of the preparation phase was a carefully designed literature survey and conducted to compile necessary background information from the literature in the field of strategy and some other organizational issues such as power, leadership, employee empowerment and involvement, etc.

Second stage of preparation phase covered formal and informal interviews with employees from all hierarchical levels. The purpose of these interviews was to introduce SVM to the members of various organizations and get their ideas about the applicability of the proposed model. Of course, their perceptions and comments helped us to modify and finalize the SVM model.

4.2.2 Design and Development Phase

This phase included the finalization of the model design and development of questionnaires for the measurement of individual vectors, intended organizational strategy vectors, and power difference value. The development of a mathematical formula and user-friendly computer software for the calculation of resultant strategy vector was conducted during this phase.

A pilot study was conducted to validate the questionnaire before the actual applications.

4.2.3 Implementation and Validation Phase

Distribution of the questionnaires, acquisition of relevant data and the implementation of the proposed (developed) model were completed in this phase. The comparison of model results with the outcomes of the field studies and observations has been used as a tool for the validation of SVM.

4.3 Methodology

As stated above the aim of the SVM is to determine the resultant organizational vector, or in other words, overall strategic direction and *strategic magnitude* of the organization. The process is based on an inductive approach and suggest to measure the vectors of individuals first and then calculate the resultant vector by adding all measured individual vectors.

For the measurement of the individual vectors, a carefully designed questionnaire of 72 questions was used where each question was accompanied by a 9-point interval rating scale (Likert type).

The questionnaire included five sections. The first part of the questionnaire consists of five questions requesting demographic information. The second section includes questions which measure vertical components of the participants' strategy direction and consist of 27 questions. Similarly, the third section also includes 27 questions and measures the horizontal components of the participants' strategy direction. Fourth section measures the strategy magnitude and includes 9 questions. Finally, the fifth section also includes 9 questions and measures (the perception of the participant of) the power difference in the organization.

Resultant vector was calculated by summing all obtained individual vectors. For further analysis or better understanding the resultant vectors of organizational departments and divisions were calculated.

For the validity check of the proposed model three organizations were selected for the application of the proposed model. SVM was applied to the selected organizations and results were used not only for the calculation of the resultant vectors of the organization but also for the evaluation of the validity and reliability of the proposed vectorial approach by comparing the obtained results with the expectations of the researcher and observations of the members of the selected organizations.

Strategic deviation and *strategic deficiency* were calculated by comparing aimed and measured strategic directions and strategic magnitudes respectively.

As a general rule in social research, different research problems require different research approaches (Singleton and Straits,1999). This research design was based both on an exploratory and conclusive research. Exploratory, because the research aimed to provide significant insight into the blurry atmosphere of strategic management. Conclusive, because it was meant to provide information that was useful in reaching conclusions.

Although most researchers do either quantitative or qualitative research work, some researchers have suggested combining one or more research methods in the one study (called triangulation) (Gable,1994, Kaplan and Duchon,1988, Lee,1991, Mingers,2001, Ragin,1987, Myers,1997). Triangular approach, combination of qualitative and quantitative methods, was used in this research for the collection of data. Besides the questionnaire, different forms of data collection such as interviews, analysis of formal and informal procedures, and observation for obtaining necessary information for the determination of organizational vector were also conducted in the study.

Quantitative approach is considered to be the best way to measure individual vectors and calculate the resultant vector because quantitative multivariate methods allow researchers to measure and control variables (Edwards, 1998).

Kaplan and Maxwell (1994) argue that the goal of understanding a phenomenon from the point of view of the participants and its particular social and institutional context is largely lost when textual data are quantified. Using only quantitative approach faces a risk of failing to take account of the unique characteristics of individual cases (Edwards, 1998). Qualitative approach might be used not as a substitute but as a complementary for eliminating this risk.

The motivation for using qualitative approach comes from the fact that qualitative research methods are designed to help researchers understand people and the social and cultural contexts within which they live (Myers,1997). Hammersley (1990) suggests that qualitative research is essential for the discovery of the social world. This, he suggests that the researcher, guided by exploratory orientation, directly observes and participates in the natural setting (Bakir, 2001). Similarly, Blumer (1982) states that the best way to properly understand a phenomenon is to investigate it in the setting in which it occurs. This entails an in-depth examination of the practices, behaviors and beliefs of individuals or groups as they normally function in real life (Bakir, 2001). Gopinath and Hoffman (1995) stress the importance of incorporating practitioners' perspectives and input in implementing a field research. In brief, theory building requires observation (Montgomery, Wernerfelt, and Balarkrishnan, 1989). So does any strategy research (including the proposed study) and shall be validated in organizational settings (Seth and Zinkhan, 1991).

Meredith et al. (1989) introduce a useful review of two key dimensions that shape the philosophical basis for research. The first dimension is the "rational/existential" and concerns the nature of truth. It also evaluates whether it is purely logical and independent of man or whether it can only be defined relative to individual experience. The second dimension is "natural/artificial" and concerns the source and kind of information used in the research.

Meredith et al. (1989) also introduce measures for both dimensions and summarize appropriate research methodologies for each corresponding research approach. Borrowed from their study, Table 2. summarizes alternative research philosophies and coherent methodologies.

Table 10 A Framework for Research Methods (Adopted from Meredith et al., 1989)

	NATURAL ⟷			**ARTIFICIAL**
RATIONAL ↕		**Direct Observation of Object Reality**	**People's Perceptions of Object Reality**	**Artificial Reconstruction of Object Reality**
	Axiomatic			*Reason/Logic /Theorems * Normative Modeling * Descriptive Modeling
	Logical Positivist/ Empiricist	* **Field Studies** * Field experiments	* **Structured Interviews** * **Survey Research**	* Prototyping * Physical Modeling * Laboratory experiments * Simulation
	Interpretive	* Action Research * Case Studies	* **Historical analysis** * Delphi * **Intensive Interviews** * **Expert panels** * Futures/ scenarios	* **Conceptual Modeling** * Hermeneutics
EXISTENTIAL	**Critical Theory**		*Introspective Reflection	

Meredith et al. (1989) try to put each research in one of the cells. At rational/existential dimension, this research is both logical/positivist/empiricist and interpretive. However, at natural/artificial dimension all of the three columns match the philosophy of this study. Highlighted (bold) items of three methods in Table 2 summarize the research methodologies that were used in this study.

First research method used was "field survey" and in this approach a carefully selected set of field sites was used to evaluate some factors related to strategy and management. Field survey in this study was considered to be essential to familiarize with the concept of strategy in organizations and establish foundations for the development of the proposed strategy vector model.

Second research method used was "structured interviews" and is mainly aimed to measure the power distance parameter in the selected organization. Although this method contrasted with field studies in the sense that observation was limited to the interview process, it enabled us to control the situation and responses.

Third research method used was "survey research" and intended to measure the strategic vectors of individuals. Like structured interviewing, this method allows for statistical analysis. It was more time efficient than interviewing, particularly at a distance because once properly designed, the survey can be sent to a large number of people with little extra trouble (Meredith et al., 1989).

Finally, the fourth method and last research methodology was "Conceptual Modeling". With conceptual modeling, a mental model of the suspected relationships was posited which then was evaluated by means of a framework that captures the essence of the system under investigation. This study was intended to develop a conceptual model to explain and demonstrate the overall strategy of an organization.

4.4 Measurement of Strategy

Snow and Hambrick introduce four different approaches for identifying and measuring strategies (1980):

- **Investigator inference:** In this approach, the researcher (an investigator) uses all the information available and assesses the organization's strategy (Snow and Hambrick, 1980).
- **Self-typing:** In this approach, instead of a researcher (or an investigator), the organization's managers (specially the top managers) assess and characterize the organization's strategy (Snow and Hambrick, 1980).
- **External assessment:** In this approach, the ratings of individuals external to the focal organization (e.g., competitors, consultants, industry analysts, and expert panels) are used for the assessment of organization's strategy (Snow and Hambrick, 1980).
- **Objective indicators:** This approach involves measures of strategy - such as published product-market data - that do not rely on the perception of individuals (either internal or external to the organization) (Snow and Hambrick, 1980).

Snow and Hambrick have identified three main issues (concerns) about the assessment of organization's strategy (1980).

- **Strategic change or adjustment:** Distinguishing the strategic change and an adjustment might be confusing. If an organization's response to a particular environmental change is in a familiar way, either gradually and incrementally (Quinn, 1978) or quickly and radically (Mintzberg, 1978) – then this response is probaply a continuation of, not a change in, existing organizational strategy (Snow and Hambrick, 1980).
- **Intended and realized strategies:** It is not clear how the researcher will distinguish the intended and realized strategy (Snow and Hambrick, 1980).
- **Relativity of strategy:** The task of measuring strategy is to attach absolute values to what is, in fact, a relative phenomenon (Snow and Hambrick, 1980). An organization's strategy is -and shall be (Livvarcin and Soyak, 2006) – dependent on parameters such as environmental conditions and competitors' actions (Caves and Porter, 1977; Hofer, 1975; Tan and Tan, 2003; Schulte, 2005)

By using these three issues Snow and Hambrick analyze four strategy measurement approaches and compare the advantages and disadvantages of each approach as shown in Table 11 (Snow and Hambrick, 1980).

Table 11 Comparison of Strategy Measurement Approaches From the Perspective of Strategic Change and Adjustment (Adopted from Snow and Hambrick, 1980)

Strategic Change and Adjustment				
Advantages Disadvantages	**Investigator Inference**	**Self-Typing**	**External Assessment**	**Objective Indicators**
Advantage	Because the Investigator has somewhat detached view, this may be a sound method for distinguishing between strategic changes and adjustments.	This method is ideal in its currency. The organization's executives are most up-to-date on the organization's directions.	Outsiders may have a comparative view that allows them to differentiate between strategic change and adjustment for a given organization.	If data are available for a sufficient time period (usually five years or longer), this method allows differentiation between strategic changes and adjustments.
Disadvantage	Generally, the researcher will not have the in-depth comparative view to allow identification of strategic changes and adjustments. Also, the investigator may not be granted access to planned strategic changes or adjustments.	Executives may have difficulty distinguishing between strategic changes and adjustments.	Outsiders may not be knowledgeable or current concerning recent strategic changes and adjustments.	This method may not reflect recent or current changes in strategy.

Table 12 Comparison of Strategy Measurement Approaches From the Perspective of Intended and Realized Strategies (Adopted from Snow and Hambrick, 1980)

Intended and Realized Strategy				
Advantages Disadvantages	**Investigator Inference**	**Self-Typing**	**External Assessment**	**Objective Indicators**
Advantage	This method may be more useful for identifying intended and realized strategies	This is a sound method for identifying intended strategies	This method is relatively well suited for identifying realized strategies	This method is relatively well suited for identifying realized strategies. It controls for perceptual and, to a lesser extent, interpretive bias
Disadvantage	Generally, the researcher will not have the perspective for assessing the gap between intended and realized strategies	This is a questionable method for identifying realized strategies, because executives appear to generally express strategies in terms of intentions. And, they may express intentions beyond those which in fact exist	This method is relatively ill suited for identifying intended strategies	This method rarely relies on data that will allow identification of intended strategies

Table 13 Comparison of Strategy Measurement Approaches From the Perspective of The Relativity of Strategy (Adopted from Snow and Hambrick, 1980)

The Relativity of Strategy				
Advantages Disadvantages	**Investigator Inference**	**Self-Typing**	**External Assessment**	**Objective Indicators**
Advantage	If the researcher is familiar with a broad array of organizations within the industry, this method may allow excellent subjective assessment of relative strategies	This method allows large sample sizes and thus a broad view of the relative context of strategies	This method allows large sample sizes. Each expert has a broad view, allowing informed rating of relative strategies	This method allows large, heterogeneous samples. Therefore, assessment of relative strategic properties is generally possible
Disadvantage	Generally, this method will allow only small sample sizes, thus diminishing the opportunity for examination of relative strategies	Each executive's assessment of strategy may have only limited reference to the array of strategies existing within or among industries. Also, executives tend to perceive their own organizations as unique	In order to ensure the experts' familiarity with an array of organizations, only a relatively homogeneous universe can be drawn from	Data sources may report only on a limited subset of organizations, thus presenting an unrepresentative sample

In this research for the measurement strategic parameters all four approaches (Investigator Inference, Self-Typing, External Assessment, Objective Indicators) were used. The following list is provided below to demonstrate which approaches were used for corresponding parameters.

- **Perceived Strategy Vector:** For the evaluation of strategic performance it is required to measure the difference between intended and realized strategy vectors (including strategic deviation and strategic deficiency). SVM measurement tools helped us to measure the realized strategy vector. However, for the determination of intended strategy vector we must apply to the perception of organizational members (especially top managers) and individuals outside the organization but are capable to assess the organization's strategy.

  We also used some of the organizational measures (that are not related to the perception of individuals (either internal or external to the organization) to control potential perceptual biases and verify the obtained results.

  We also defined a strategy vector depending on my own observations and expertise.

  As a summary all four approaches were used for the determination of perceived strategy vector.

- **Individual Strategic Vector:** Since SVM provides rational and valid tools for the measurement of (actual or realized) strategy vector, the best approach seem to be the self-typing for the measurement of individual strategy vectors. When self-typing approach is used, Snow and Hambrick expect only top managers to assess the organizational strategy (1980). But in this research we included all members of the organization, including a wide range starting from top managers to lowest level employees.

- **Power Difference (and its linearity):** For the determination of power difference parameter we used self-typing as we did for the measurement of individual strategy vectors. But this time we first performed the measurements separately to be able to compare the perceptions of different hierarchical levels in the organization.

As a second measurement tool we also used our own observations and perceptions. Following table is a summary of used strategy measurement approaches.

Table 14 Summary of Used Strategy Measurement Approaches

Parameters	Investigator Inference	Self-Typing	External Assessment	Objective Indicators
Perceived Strategy Vector	**Yes**	**Yes**	**Yes**	**Yes**
Individual Strategic Vector	No	**Yes**	No	No
Power Difference	**Yes**	**Yes**	No	No

4.5 Development of Surveys

As explained in Section 2, the impacts of a strategy vector on the different dimensions of an organization might be evaluated with the nine cells of Integrated Management Model (IMM). As illustrated in Figure 61, each cell of IMM represent a unique organizational dimension and the measured organizational strategy vector has different influence on each of this cells.

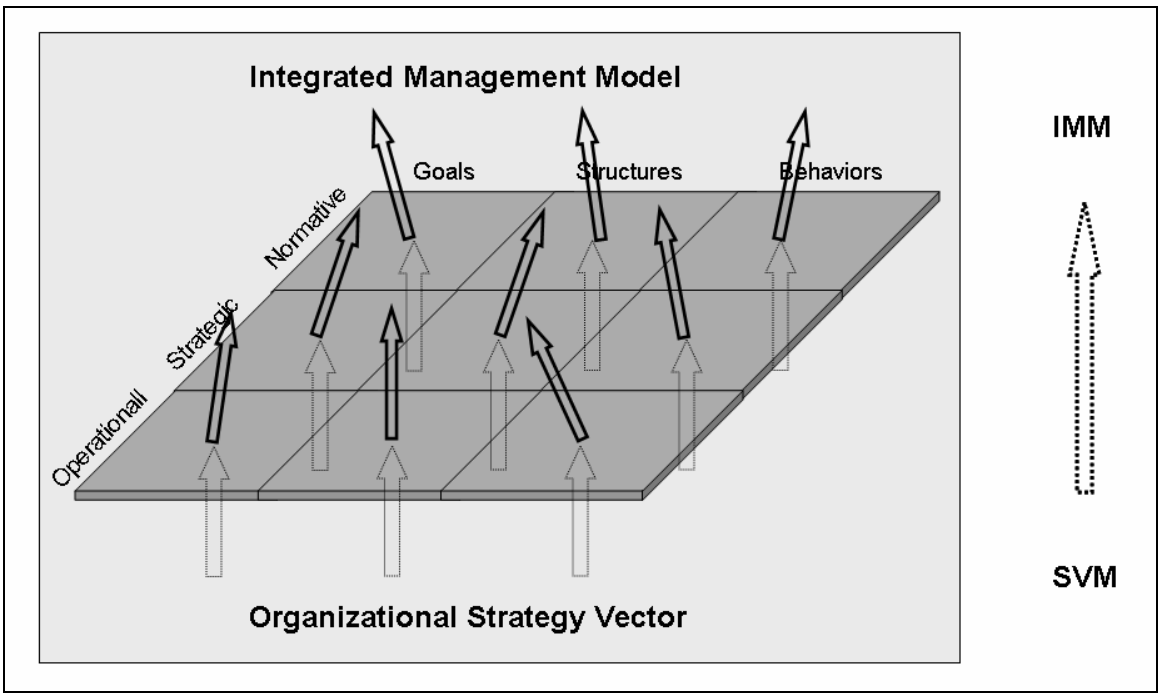


Figure 61 Conceptual Sequence from SVM to IMM

Conceptual sequence from SVM to IMM is accepted to be capable to explain the impacts of the organizational strategy on different dimensions of an organization. Similarly, a reverse approach, the conceptual sequence from IMM to SVM might also be applicable for the evaluation of organizational strategies. This sequence is considered to be useful for measurement of *strategy vectors* and for the determination of the related constructs. This approach is illustrated in Figure 62.

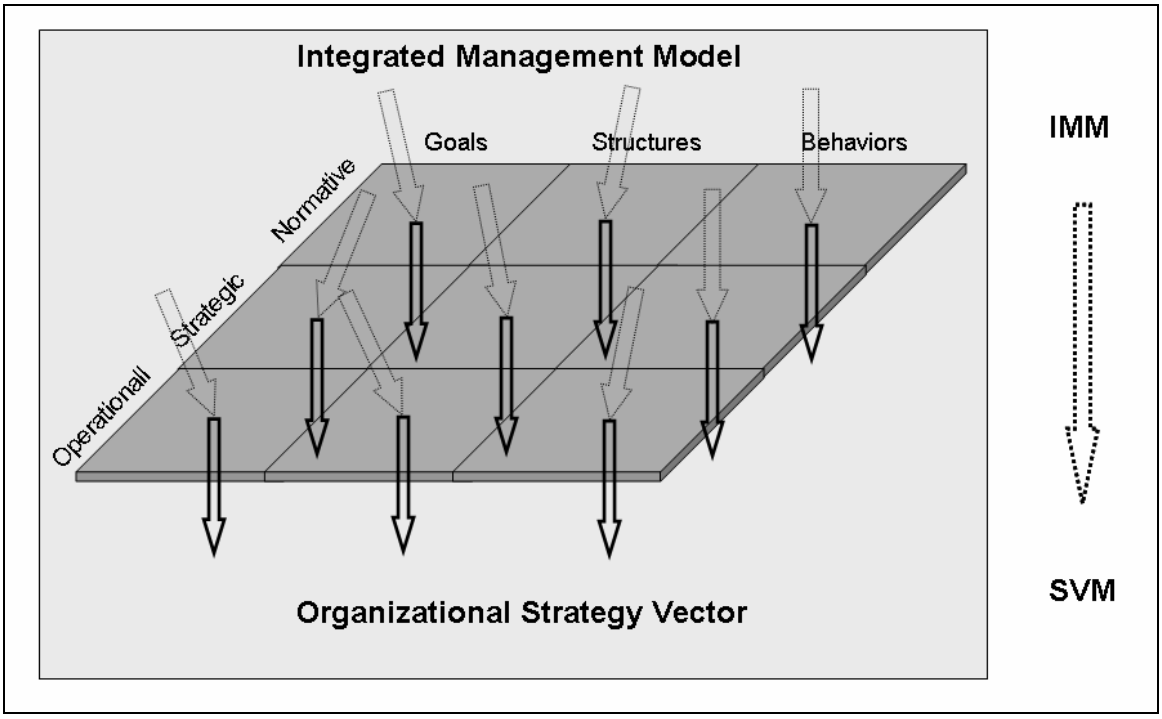


Figure 62 Conceptual Sequence from IMM to SVM

For the development of questionnaire different approaches are used for the types of parameters: *Individual strategy direction, individual strategy magnitude, and (organizational) power difference*.

Constructs (and corresponding survey questions) for the measurement of *strategy vector* (including *strategy direction* and *strategy magnitude)* and *power difference* are analyzed in section 4.6. But, before proceeding to the constructs, the procedures for the development of questionnaires for the measurement of three parameters are explained in the following paragraphs.

4.5.1 Individual Strategy Direction Questions

As explained in section 3, a strategy vector is expressed on a 2D (two dimensional) "circular coordinate system" where angle (θ) is represented with *strategy direction* and radius (r) is represented with *strategy magnitude*.

In mathematics it is possible to make conversion between "Circular coordinate system" and "Cartesian coordinate system".

The formulas for the conversion from “Circular coordinate system” to “Cartesian coordinate system” are as follows:

$$x = r \text{ Cos } (\theta)$$

$$y = r \text{ Sin } (\theta)$$

Similarly, the formulas for the conversion from “Cartesian coordinate system” to “Circular coordinate system” are as follows:

$$r^2 = x^2 + y^2$$

$$\theta = \text{atan}(x/y)$$

A sample conversion between “Cartesian coordinate system” and “Circular coordinate system” is illustrated in Figure 63.

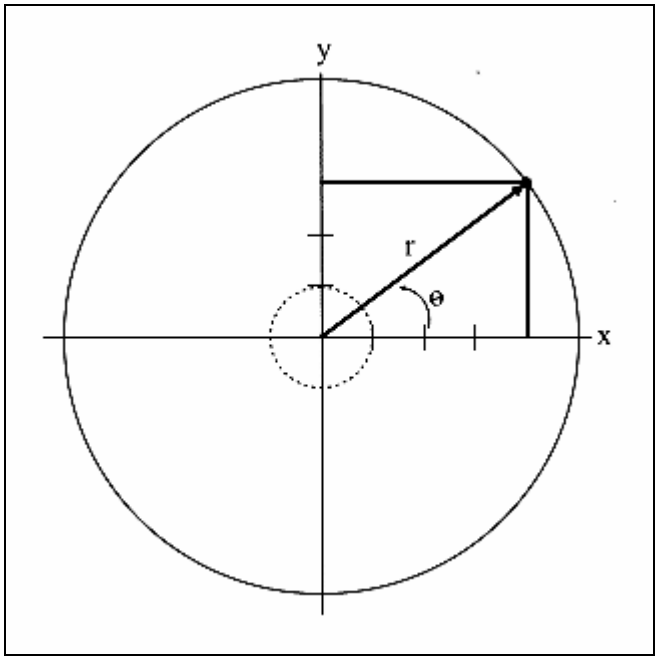


Figure 63 Conversion Between Cartesian and Circular Coordinate Systems

In the illustrated example, the location of the dot (which is the ending point of the vector) may be expressed in a two separate but actually identical ways. On Cartesian coordinate system the location of the dot is (x,y) = (4,3) whereas on circular coordinate system it is (r,θ)=(5, atan(3/4)) or (r,θ)=(5,37°).

For the measurement of individual strategy vector it might be more appropriate to use Cartesian coordinate system instead of circular coordinate system. Besides mathematical conversion, a conceptual conversion (from circular to Cartesian) is also necessary to be consistent with the basis of this study.

Due to some difficulties in (conceptual) matching between coordinate systems only the angle (*strategy direction)* is used for conversion. By using unit vector the necessity for the measurement of radius is eliminated.

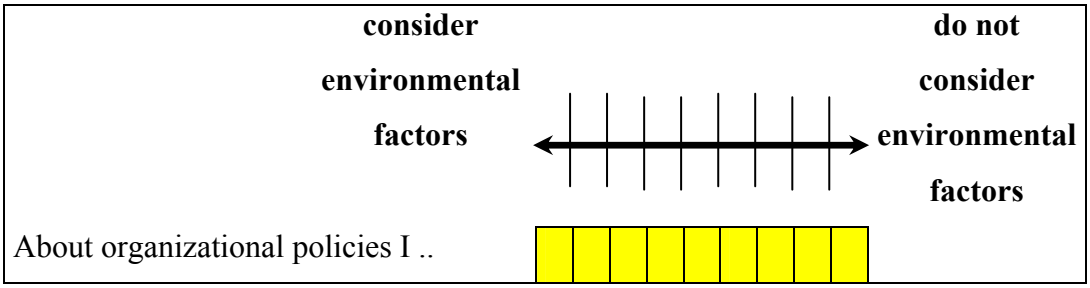
As a summary, the purpose of the *strategy direction* questions is to measure only the directions of *the individual strategy vectors* (not magnitudes).

In two dimensional Cartesian coordinate systems (also called as rectangular coordinate systems), two axes are defined. The horizontal axis is generally labeled as "x*"*, and the vertical axis as "y*"*. In the strategy direction questionnaire, two questions are developed for each construct: one for "x" axis and one for "y" axis.

From the perspective of proposed model (SVM), "x" axis states the consciousness level on the dependency to the external (or environmental) parameters and corresponding adjustment activities.

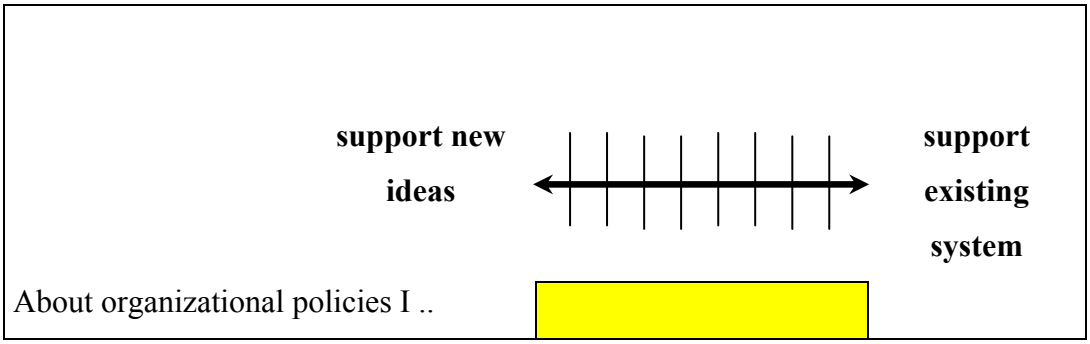
The margins of "x" axis are "Adaptive" and "Erratic". As an adjective, adaptive means "*showing or having a capacity for or tendency toward adjustment to environmental conditions* (Merriam-Webster, 2007)". From this definition it is clear that the level of consciousness is high for adaptive individuals (or organizations). On the contrary, erratic individuals (or organizations) are "*characterized by lack of consistency, regularity, or uniformity* (Merriam-Webster, 2007)" due to the low consciousness level.

Survey questions for the measurement of "x" dimension of constructs tries to measure the location of the individual between the two margins. An expression (related to each *strategy direction* construct) is provided as an incomplete sentence and individuals are expected to select an appropriate box, on a scale of nine boxes, to represent their answer between two extremes as demonstrated in the following sample.



SVM introduces "y" axis as the dimension where the willingness level of individuals (or organizations) on innovations. The margins are "Innovative" and "Conservative". Innovative individuals (or organizations) are characterized by being productive of new things or new ideas (Merriam-Webster, 2007). On the other hand, conservatives favor traditional views or values and tend to oppose change or innovations.

For the measurement of "y" dimension of constructs, similar (to the questions of "x" dimension) survey questions are used. The same expression that we used for "x" dimension is provided as an incomplete sentence and individuals are again expected to select an appropriate box between two extremes to represent their answer. A sample question is demonstrated below.

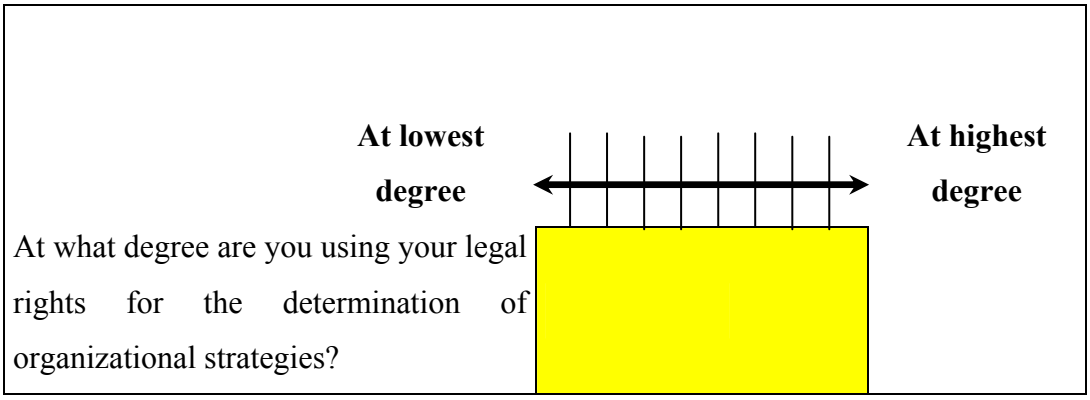


4.5.2 Individual Strategy Magnitude Questions

The questions that are used for the measurement of strategy magnitude are similar to the ones that are used for the measurement of strategy direction. But there are some differences. First, instead of incomplete sentences full expressions are provided to the individual. Second, there

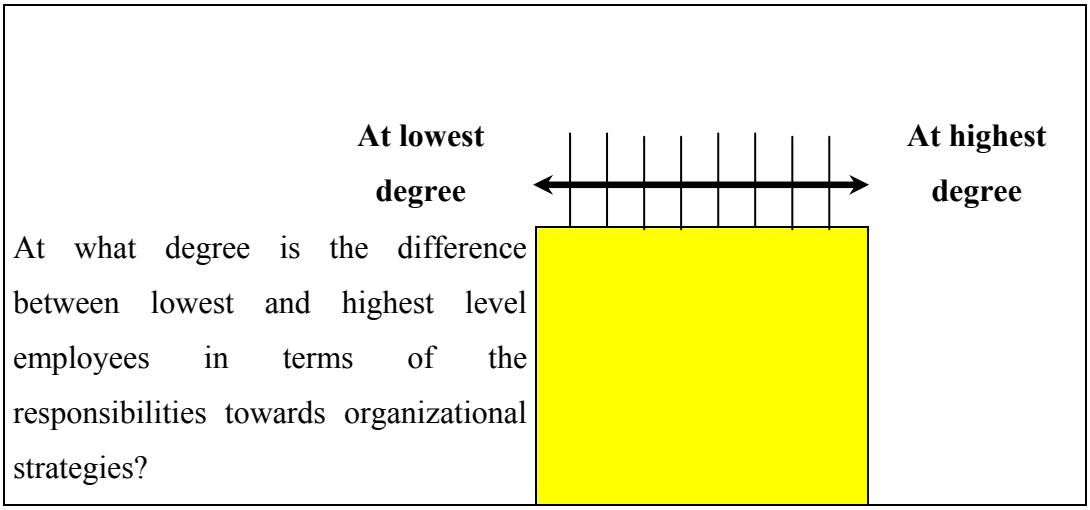
is only one question for each construct instead of two. Third, and finally, there is no need to make a conversion from circular coordinate system to Cartesian coordinate system thus *the strategy magnitude* is measured directly.

A sample question is demonstrated below.



4.5.3 Power Difference Questions

"Nine box scale" approach that is used for the development of *strategy direction* and *strategy magnitude* question is also used for the measurement of *power difference* parameter. A sample question is demonstrated below.



4.6 Strategy Vector Constructs

For the measurement of *the individual strategy vector* (and for the calculation of *organizational strategy vector*) this study proposes to benefit from 36 different constructs. 27

of these constructs are for the measurement of *the strategy direction* of the *individual strategy vector*s. The remaining 9 constructs are for the measurement of *the strategy magnitude* of *the individual strategy vectors*.

36 constructs are distributed among the 9 cells of IMM so that each cell includes 3 (three) *strategy direction* and 1 (one) *strategy magnitude* construct. This distribution is illustrated in two tables. First table is the distribution of 27 *strategy direction constructs* on IMM cells. Second table is the distribution of *strategy magnitude constructs* on IMM cells.

Table 2 Distribution of *Strategy Direction* Constructs on IMM Cells

	Goals	**Structure**	**Behavior**
Normative	Organizational policy (Vision) Big picture Mission	Constitution of the organization Regulations Management style	Culture Institutionalization Consistency
Strategic	Risk taking Values Strategic change	Strategy Process Focus Competency	Problem Behavior Leadership Participation
Operational	Operational actions Individual progress Roadmapping	Hierarchy Communication Use of technology	Performance evaluation Internal cooperation Learning management

Table 3 Distribution of *Strategy Magnitude* Constructs on IMM Cells

	Goals	**Structure**	**Behavior**
Normative			

	Control of resources, information and communication	Coalition and network	Prestige, status and social approval
Strategic	Personal appeal and affection	Associate and referent power	Rewards and sanctions
Operational	Expertise, knowledge and confidence	Legitimacy	Coercive power

Each cell of IMM and constructs allocated in these cells in previous two tables will be evaluated separately in the following paragraphs.

4.6.1 Normative Goals

The cell of normative goals in IMM is the field where obvious long-term objectives are established for the survival and development (Oner and Saritas, 2005). Normative goals develop a clear and brief description of what the organization or community should look like as it successfully implements its strategies and achieves its full potential (Bryson, 1998, as cited in Oner and Saritas, 2005) In other words, normative goals are the fundamental strategies of business and require the action commitments through which the mission of a business is to be carried out, and the standards against which performance is to be measured (Drucker, 1974, as cited in Oner and Saritas, 2005).

The cell of normative goals is located at the left upper corner of IMM schematic display. *Strategy vector* (both *strategy direction* and *strategy magnitude*) constructs related to this cell are organizational policy, vision, and mission, control of resources, information and communication. These constructs are demonstrated in Figure 64.

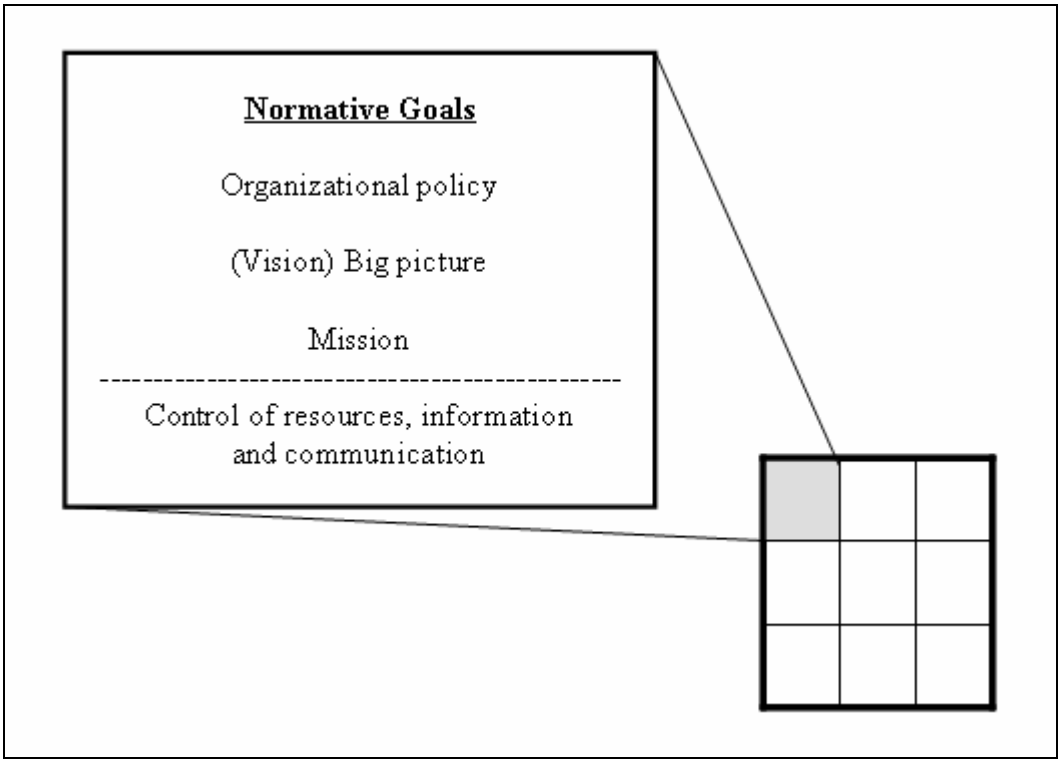


Figure 64 Constructs Related to Normative Goals

4.6.1.1 Organizational policy

Organizational policy may be defined as the "*overall direction and orientation for the strategic and operational management"* (Alsan and Oner, 2003). Organizational policy can be expressed at many different layers of the organization (Curtin, 2002). At the broadest level – which is in the main orientation of this study– (organizational) policy is a definition of the organization's objectives and guidelines for how to achieve those objectives (Curtin, 2002). Down into the tactical and operational parts of the organization, policy will get into specific practices and guidelines that will help people and the systems that they use to stay within the framework expressed at higher levels (Curtin, 2002).

"*Goal assumptions in normative models or goals advocated in policy decisions are often stated purely on the basis of one's conviction and preference, rather than on the basis of inductive study of the existing system* (Ijiri 1975, p. 28 as cited in Meredith et al., 1989)". This

approach basically analyze whether the determination of organizational policies are developed by dominant individuals (*individual strategy vectors*) or not. No matter how, this approach considers organizational policies as normative goals. From this perspective it might be convenient to allocate "organizational policies" to the IMM cell of Normative Goals.

Organizational policy delivers long-term and overall goals and a basic orientation for the strategic management of the strategic goals, depending basically on the organizational culture and constitution (Alsan and Oner, 2003). From this perspective it sounds also logical to allocate "organizational policies" to the IMM cell of Strategic Goals.

Alsan and Oner (2003) introduce organization policies as long-term and overall goals and a basic orientation for the strategic management. In other words they are crucial in the determination of *the organizational strategy vector*.

The corresponding parameters of organizational policies (with their extremes) are as follows (Alsan and Oner, 2003):

1. Supply of performance (broad/narrow);
2. Individuality of problem solving (standardized/individual);
3. Competitive posture (defensive/offensive);
4. Leader-follower behavior (imitation/innovation);
5. Value-added activities (cost oriented rationalization/customer focused optimization);
6. Dependency of value-added activities (independent/networking);
7. Deployment of resources (fixed/flexible);
8. Performance of resources (specialized/generalist).

Strategy direction questions related to organizational policy are listed below:

1. About organizational policies I (am aware of the influence of the environmental factors …. do not foresee any environmental influence).
2. About organizational policies I (support new ideas …. support existing system).

4.6.1.2 Vision (Big picture)

Merriam-Webster online dictionary (2006) defines vision as "*an act or power of imagination, a mode of seeing or conceiving, or an unusual discernment or foresight*". Yukl (2002) defines vision as an image of what can be achieved, why it is worthwhile, and how it can be done (pp. 283). Both definitions suggest that a vision is a portrayal of a desirable future state is related to organizational (normative) goals.

Although vision is expected to be determined by top management, frontline workers also understand the big picture (Behn, 1995). This understanding will influence the direction and magnitude of *the individual strategy vectors* of frontline workers.

Nanus (1992) claims that the "right vision" has five characteristics:

1. Attracts commitment and energizes people,
2. Creates meaning in workers' lives,
3. Establishes a standard of excellence,
4. Bridges the present to the future, and
5. Transcends the status quo.

According to Manasse (1986), "visionary leadership" includes four different types of vision: organization, future, personal, and strategic.

"Organizational vision involves having a complete picture of a system's components as well as an understanding of their interrelationships. 'Future vision is a comprehensive picture of how an organization will look at some point in the future, including how it will be positioned in its environment and how it will function internally'" (Manasse, 1986, p. 157).

"Personal vision includes the leader's personal aspirations for the organization and acts as the impetus for the leader's actions that will link organizational and future vision. 'Strategic vision involves connecting the reality of the present (organizational vision) to the possibilities of the future (future vision) in a unique way (personal vision) that is appropriate for the organization and its leader'" (Manasse, 1986, p.162).

All of these vision types will shape *the strategy vectors* of individuals and consequently determine *the organizational strategy vector*. Vision is also related to strategic and operational goals. But due to its broad influence on organizations future, the vision is considered to be in the (IMM cell of) Normative Goals.

4.6.1.3 Mission

Mission is defined as the underlying purpose of the organization, toward which all activities are ultimately directed (Cook, 2003). Missions describe the purpose of the organizations in terms of the types of activities to be performed for constituents or customers (Yukl, 2002, pp. 284-285) and are very appropriate for the properly separation of day-to-day activities from breakthrough activities (Babich, 1995).

Mission statements should describe the overall direction of the organization and will be reference for the strategic and operative management (Alsan and Oner, 2003). The parameters of mission statements (with their extremes), are as follows (Alsan and Oner, 2003):

1. Internal direction of these missions (individual economic/social economic)
2. Time perspective of the goal (short-term/long-term)
3. Chance perspective (keep it/progressive)
4. Risk perspective (disturbing/vulnerable)
5. Objective performance goals (weak/strong)
6. Financial value goals (weak/strong)
7. Ecological goals (weak/strong)
8. Social goals (weak/strong)

The (declaration of the) mission statement is a key contributor to the overall success of the strategic plan and it highlights the goals and objectives (Karababas and Cather, 1994) of an organization. Due to this fact “mission” is considered to be in the Normative Goals cell of IMM.

Having a clear and unambiguous strategic mission is crucial for all organizations but in order to be effective every organization requires the confidence that its top management has the authority and ability to carry out previously determined missions (Donaldson, 1995). This might be accomplished in two ways:

1. *The individual strategy vectors* of top managers may be dominant enough to determine *the organizational strategy vector*.
2. Top management may influence and convince all employees to arrange their *individual strategy vectors* to fit with the organizational missions.

4.6.1.4 Control of resources, information, and communication

Earlier studies accepted that control of money (Bierstedt, 1950 as cited in Filley and Grimes, 1967), general information (Cartwright, 1959 as cited in Filley and Grimes, 1967), procedures, or other resources are all included in control of resources (Filley and Grimes, 1967) which is considered to be one of the basis of power (French and Raven, 1959). Communication is also accepted as a type of resource and consequently its control is a source of power as well (Filley and Grimes, 1967).

"Control of resources" may be used as an umbrella term to cover all kinds of resources including information and communication. The focus of this study is related to the control of resources by individuals only within the organization. Broader perspective, where the control of resources in the outer environment by a particular organization is interpreted is not in the scope of the measurement of *the individual strategy vectors*.

As explained before, the strategy magnitude -although not totally identical- is closely related to the sources of power in organizations. The term "control of resources" is considered to be important for the measurement of *individual strategy magnitudes* and allocated in the normative goals cell of IMM.

Once a person has control of critical resources, he or she might also have personal desire to use them to influence others (Brass, 2002). This influence will be expressed in the measurement of the individual strategy vectors of employees that have control over resources.

Normative goals are both crucial for the survival and growth of an organization and related to activities such as forming, steering and development of qualitative or quantitative goals. From this perspective control of resources, information and communication may also be accepted as a component of normative goals since it provides individuals a kind of power (strategy magnitude) which is predominant in the survival and growth of the organization. Although deployment of resources is performed at strategic level (Alsan and Oner, 2003; Besli, 2006) and allocation of resources are managed at operational level (Alsan and Oner, 2003; Besli, 2006), these are just the implementation of resource allocation plans developed at normative level.

4.6.2 Normative Structures

Normative structures are the values and principles that provide the overall direction for the organization (Oner and Saritas, 2005). The particularities of normative structures may be listed as follows (Oner and Saritas, 2005):

1. Balancing present and future as well as internal and external perspectives
2. Moderation of interaction with strategic and operational levels
3. Ascertaining the identity of the organization and its role in its environment
4. Embodiment of supreme values, rules, and norms

The cell of normative structures is located at the upper centre of IMM schematic display. Strategy vector constructs related to this cell are constitution of the organization, order and regulations, management style, coalition and network. These constructs are demonstrated in Figure 65.

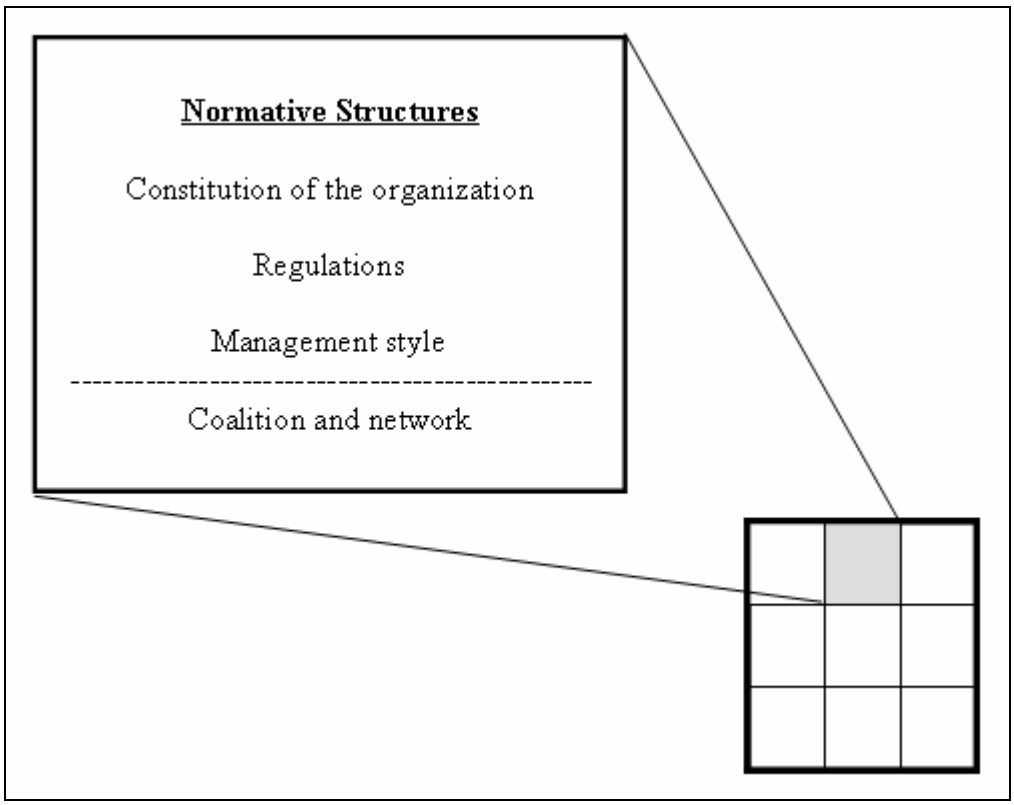


Figure 65 Constructs Related to Normative Structures

4.6.2.1 Constitution of the organization

Constitution of an organization is basically composed of (but not limited to) the values and principles that provide an overall direction to the organization. It includes (Alsan and Oner, 2003)

- Supreme values and norms
- Order and regulations
- Rights and relations of the owners
- Rules of conflict management
- Legal design tools
- Humanistic social system

The constitution of the organization is developed at normative level and is the basis for activities that are realized at the strategic level (Alsan and Oner 2003).

While the rights and relations of the owners are important for the constitution of the organization, the rules of conflict management are also important and play a vital role in order to pursue the economic goals (Alsan and Oner, 2003). The corresponding parameters related to the constitution of an organization (with their extremes) are as follows (Alsan and Oner, 2003):

1. Representation of interests in board (shareholder/stakeholder)
2. Art of conflict resolution (confrontation/consensus)
3. Economical, legal and social structure (nondifferentiated/differentiated)
4. Distance of the management to real life (close-operative/far-strategic)
5. Competence distribution of management (single-level/multiple-level)
6. Division of executives (directorial, CEO/staff, team)
7. Sense of responsibility of the top team (focusing on existing business potentials, short-term/multiplying business potentials, long-term)
8. Rationale of the top team (monitoring/consulting)

Despite shifts in leadership and continual adjustments in short-term business priorities, the reservation of the core set of strategic objectives and organizational values (the constitution of the organization) is crucial for the development of a shared vision (Bartlett and Ghoshal, 1990) and consequently for the survival of the organization.

Constitution of the organization is expected to determine the shared standards which govern the behavior of individuals within the organization (Seevers, 2000). Due to this fact it is expected to have significant effect on the formation of *individual strategy vectors* and *organizational strategy vector*.

Since constitution of the organization is essential in the identification of the overall direction of the organization, in this study we have considered it to be related to the Normative Structure cell of IMM.

4.6.2.2 Regulations

Managers are expected to renew organizational strategies if the environment is undergoing profound transformations (Zuniga-Vicente and Vicente-Lorente, 2004). Thus, the aimed organizational strategy vector will change as well.

In the past (1960s and early 1970s), situations facing an organization were thought to be the primary determinant of managerial behaviors and organizational outcomes. Consequently, compared with the influence of conditions in the firm's external environment, managers were believed to have little ability to make decisions that would affect the organization's performance (Ireland and Hitt, 2005). But some other theories and applications have claimed that top-level managers have the discretion to make choices, or in other words, determine organizational strategy vector (Ireland and Hitt, 2005). Different levels of environmental uncertainty may require different organizational strategies (Spencer, 1986) and top managers may arrange organizational strategies (*aimed organizational strategy vectors*) to fit new requirements.

Following the strategic choice perspective (Child, 1972, as cited in Priem, 1992), one would expect that the firms of those CEOs whose configural decision rules are consistent with normative configuration theory should exhibit an appropriate multivariate strategy-structure-environment alignment (Priem, 1992). This approach supports the idea that environment (and environmental regulations) is related to the Normative Structure of an organization.

Environmental regulations also affect *organizational strategy vectors*. The environmental regulations have prompted a new role for organizations. Improved productivity has taken on new meaning as organizations seek new production processes to comply with environmental regulations while increasing overall efficiency (Coffin, 1994).

Just like the internal order and internal regulations determined by the constitution (Alsan and Oner, 2003), appropriate reactions to external regulations are also determined at the normative structures cell.

4.6.2.3 Management style

Management style is basically an individual's beliefs about how one should manage an organization. Management style is strongly influenced by the values that the person holds (Cox and Cooper, 1989). Management style "*denotes an underlying mode of thinking and behaving that in turn promotes a specific repertoire of actions that managers draw upon in contexts of varying complexity and uncertainty* (Lewis et al., 2002)".

Historically, the research literature has polarized management styles, framing them in terms such as (Lewis et al., 2002):

1. Convergent/divergent thinking,
2. Transactional/transformational leadership,
3. Theory X/Theory Y.

Likewise, product development researchers often stress divergence between an emergent (experiential) (Lewis, Welsh, and Dehler, 2000) and a planned style (Lewis et al., 2002). These two polarized management styles (emergent and planned) of project management may be generalized (Bouncken, Teichert, and Koch, 2006).

Management styles at normative structures may influence items such as following (Bleicher, 1999; Alsan and Oner, 2003; Besli, 2006):

1. Representation of interests in board (shareholder/stakeholder)
2. Art of conflict resolution (confrontation/consensus)
3. Economical, legal and social structure (non-differentiated/ differentiated)
4. Distance of the management to real life (close-operational/ far-strategic)
5. Competence distribution of management (single-level/multiple-level)

6. Division of executives (directorial, CEO/staff, team)
7. Sense of responsibility of the top team (focusing on existing business potentials, short-term/multiplying business potentials, long-term)
8. Rationale of the top team (monitoring/consulting)
9. Intensity of participation in external cooperation (low/high)
10. Influence on the cooperative behavior (high/low)
11. Duration of the external cooperative relations (short/long)
12. Conflict handling of partnership (contractual/consensual)
13. Intensity of cooperative teamwork (low/high)
14. Art of influence on the internal cooperative relations (authoritative/ participative)
15. Durability of the internal cooperative relations (stabilization/ dynamization)
16. Conflict handling of internal cooperative relations (ignoring/agreeing)

It is clear that the management style has a prominent impact on both *individual* and *organizational strategy vectors*. In this study, management style is accepted to be appurtenant to Normative Structures cell of IMM.

4.6.2.4 Coalition and network

A coalition is defined as an alliance between several managers who agree about organizational goals and problem priorities (Stevenson, Pearce , and Porter, 1985). One of the coalition formation incentives is that organizational goals are often ambiguous and that the operative goals of departments often are inconsistent, since differences might exist concerning problem priorities (Broek, 2001). This notion of ambiguous goals is in contrast with the conventional view of organizations as having goals, from which follows that the problem of management is to recruit, train, control, and motivate organizational participants so as to achieve the organization's goal or goals (Broek, 2001) .

A coalition is defined as “people from a variety of position, who share a particular belief system – i.e. a set of value, causal assumptions and problem perceptions – and who show a non-trivial degree of coordinated activity over time” (Sabatier, 1988).
Coalitions may also be viewed in the game-theoretic, sense as a type of defection at the group-level, where some organization members obtain short-term gains and other organization members are left without resources. Therefore, departments outside the winning coalition may be less able to be productive (Mannix, 1991).

Although constrained by a variety of structural factors, policies are conceived and implemented by groups of individuals possessing both resources and beliefs from different parts of the political universe (Davis, 2006). Due to this fact, the influence of “coalition and network” on *the individual strategy vectors* deserves special attention.

Both internal and external cooperative relations, which include coalitions and networks, are considered as constructs of normative structures (Alsan and Oner, 2003).

4.6.3 Normative Behaviors

The cell of normative behaviors is related to the desired innovative social, economic, political, technological, and environmental behavioral systems that an organization is expected to reach. Consequently, normative behaviors include the transformations in the organizational (at country level the national) culture to achieve these behavioral goals (Oner and Saritas, 2005) and shape the perceptions and preferences against events and developments in an organization (Alsan and Oner, 2003)

The cell of normative behaviors is located at the right upper corner of IMM schematic display. Strategy vector constructs related to this cell are culture, leadership, consistency, prestige, status and social approval. These constructs are demonstrated in Figure 66.

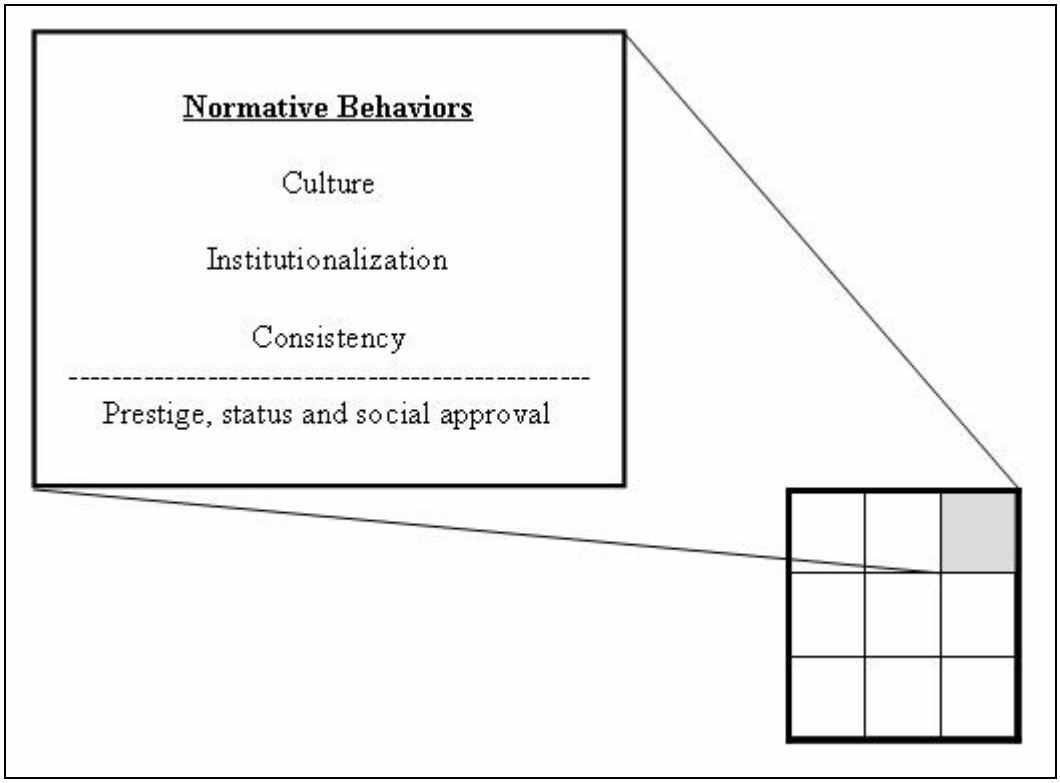


Figure 66 Constructs Related to Normative Behaviors

4.6.3.1 Culture

Organizational culture is defined as "*the mores and norms, both implicit and explicit, that defines all levels of behavior within an organization* (Cook, 2003)". *Organizational culture refers to the complex set of ideologies, symbols, and core values shared throughout the* organization (Ireland and Hitt, 2005).

In other words organizational culture is a set of shared mental assumptions (Ravasi and Schultz, 2006). These shared assumptions are useful to guide interpretation and action in organizations by defining appropriate behavior for various situations (Ravasi and Schultz, 2006).

Organizational culture establishes a connection between past-oriented values and forward-based behavior in the social evolution (Alsan and Oner, 2003). As a result of this connection, organizational culture forms the normative behavior of an organization which is composed of

the cognitive abilities of the organization and the attitudes of its members towards duties, tasks, products, fellow members, management and organization (Alsan and Oner, 2003).

Parameters related to organizational culture (with their extremes) are as follows (Alsan and Oner, 2003):

1. Cultural openness (clear limits to outside/open outside oriented)
2. Attitude towards change (hostile/ready and open)
3. Orientation of management (change from top-down/change from bottom-up)
4. Subcultural differentiation (uniform value system/functionally different, but joint value system confined to division)
5. Understanding of cultural change tools (tools, technocratic structures and processes/evolution, rewarding of creative developments)
6. Value added orientation of management (cost saving/ focus on new application potentials);
7. Membership (praising loyalty/praising individual performance)
8. Culture leverage (collective, us/individual, hero)

Organizational identities (cultures) are also influenced by environmental changes that induce reevaluation of shared definitions (Ravasi and Schultz, 2006).

4.6.3.2 Institutionalization

Institutionalization is a political process (Zilber, 2002) and is defined as the process of "*embedding learning that has occurred by individuals and groups into the organization*" (Crossan et al., 1999).

One of the most effective strategies for institutionalization is domination which addresses potential resistance to change (Lawrence et al., 2005) or in other words opposition of individual strategy vectors.

Organizations need active, interested members who are willing to engage in political behavior that pushes ideas forward and ensures their interpretation, integration, and institutionalization

(Lawrence et al., 2005). This requirement addresses *individual strategy vectors* that have same identical or akin *strategy directions*. If all individuals (actors) enact the same institutional practices and associate them with the same corresponding institutional meanings, (*if they have alike individual strategy vectors*) institutionalization will be stronger (Zilber, 2002).

Three mechanisms may be listed as the drivers of institutionalization (DiMaggio and Powell, 1983): coercive, mimetic, and normative pressures. This study is focused on the normative pressures that usually stem from cultural expectations (Lawrence, Winn, and Jennings, 2001).

4.6.3.3 Consistency

Consistency is assumed to be a by-product of the dominant logic of an organization and may serve as a means of measuring the manifestation of dominant logic (Harveston, Kedia, and Francis, 1997) or *organizational strategy vector*.

In terms of corporate performance, strategic consistency, especially in resource allocation across lines of business, is critically important for firms with low environmental diversity (Harveston, Kedia, and Francis, 1997).

Strategic choices have been well studied in the literature (Hayes and Wheelwright 1984; Hill 1985; Brunsman and Sharfman, 1993; Peng, 2003). They have usually been stated in terms of choice in process and infrastructure (Voss and Winch, 1996). These choices need to be both consistent with each other and with the company's strategy (Voss and Winch, 1996)

4.6.3.4 Prestige, status and social approval

Prestige is defined as the commanding position in people's minds (Merriam-Webster, 2007) and expressed as a source of power in early studies (Biersted, 1950). Status stands especially for high prestige and addresses rank in a hierarchy of prestige (Merriam-Webster, 2007). Status, just like prestige, is also expressed as a source of power (Filley and House, 1967). With slightly different meaning social approval is also introduced as a source of power (Simon, 1957).

The normative dimension is expected to establish behaviors to lead strategic and operational activities. Prestige, status and social approval are usually related to high level managers who

are capable to develop "*the cognitive abilities of an organization and the attitudes of its members which shape the perceptions and preferences against events and developments* (Alsan and Oner, 2003)*"*.

4.6.4 Strategic Goals

The cell of strategic goals is related with the creation, use, and development of success potentials. The strategic management process is about moving the organization from its present position to a future strategic position, in order to exploit new products and markets (Oner and Saritas, 2005).

The cell of strategic goals is located at the left side of middle line of IMM schematic display. Strategy vector constructs related to this cell are risk taking, values, strategic change, personal appeal and affection. These constructs are demonstrated in Figure 67.

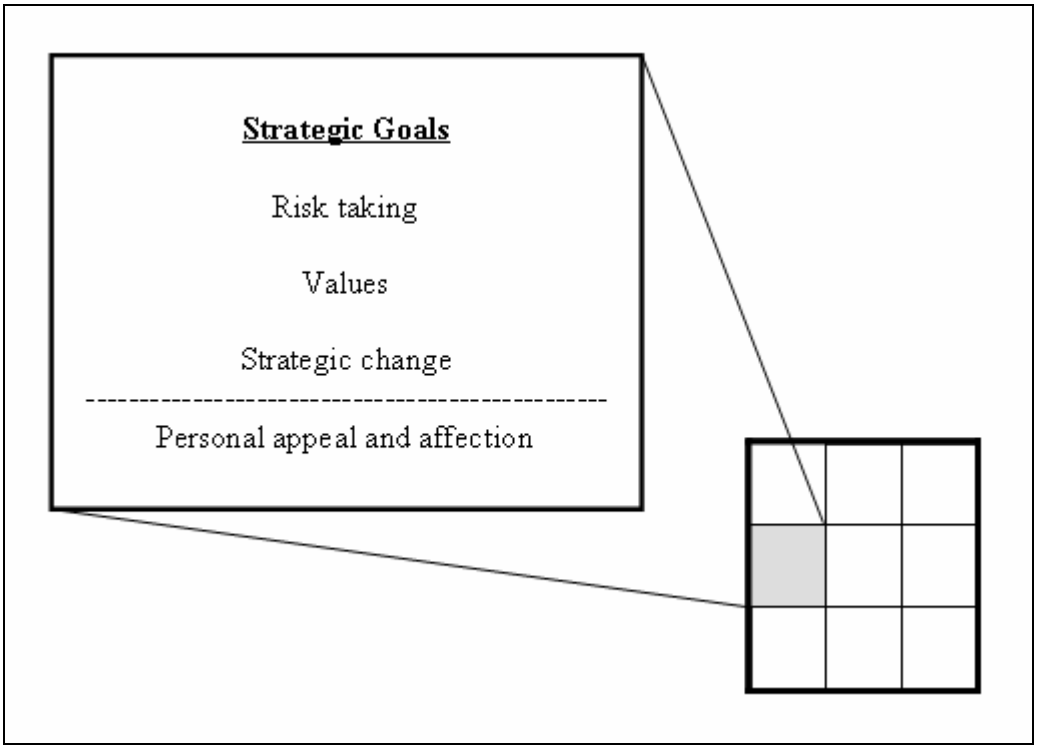


Figure 67 Constructs Related to Strategic Goals

4.6.4.1 Risk taking

Risk taking is the basis of creative thinking (Morreall, 1991) and risk taking characteristics of organizations determines the organizational goals that steer the problem, management and cooperation behavior towards the desired direction (Alsan and Oner, 2003).

IMM introduces "risk taking" at normative level (Alsan and Oner, 2003). Efforts to secure the survival and growth of an organization will naturally include risk perspective but not the detailed actions. Risk taking on the other hand is more like an action than a perspective.

Additionally risk-taking behavior will be affected by a feeling of responsibility (Charness and Jackson, 2006) and people at normative level have limited responsibility and show less appreciation for certain opportunities requiring some risk taking behavior (Perner and Shani, 1989) when compared with managers who are responsible for strategic actions. Due to these facts, in this study, risk taking is allocated in "strategic goals" cell instead of "normative goals" cell.

4.6.4.2 Values

Values may be defined as *a list of the key values or ideological themes considered important for an organization* (Yukl, 2002, pp. 285-288) or *the underlying principles that are commonly subscribed to and are employed (or not employed) to fulfill the mission* (Cook, 2003).

Just like the specific knowledge, experience, and preferences, values of top managers or all individuals in an organization, are also reflected in their decisions (Ireland and Hitt, 2005) which are usually related to strategic goals. Due to this fact "values" might be addressed as a significant indicator of strategy vectors.

Leaders are expected to communicate organizational norms and values (Vera and Crossan, 2004) and *"new hires" who, being unfamiliar with the organization, are expected to use orientation programs, procedure manuals, and direct observation of organizational practices and values* (Vera and Crossan, 2004). This action is crucial for the spreading of strategic goals among individuals in an organization.

Values are considered at strategic goals cell because it is closely related to the forming, steering and development activities of construction, maintenance and utilization of success potentials (Alsan and Oner, 2003).

4.6.4.3 Strategic change

Organizations are expected to "*impose form and social coherence upon human activity, through the production and reproduction of settled habits of thought and action*" (Burns and Scapens, 2000, p.6, as cited in Soin, Seal, and Cullen, 2002) and "*institutional theory tends to concentrate on patterns and configurations that persist* (Soin, Seal, and Cullen, 2002)". Thus organizational change is expected to show changes in routines or new patterns of behavior (Soin, Seal, and Cullen, 2002). Those changes in routines or new patterns of behaviors may be addressed as strategic change if they have significant influence on the issues that are "*occupied with the construction, maintenance and utilization of success potentials"* (Alsan and Oner, 2003).

Strategic change may be explained by using four theoretical models that reflect different views of driving forces and performance outcomes of change (Ginsberg and Grant, 1985):

(1) **The linear model**, in which the driving force behind strategic change is the goal-momentum gap (i.e., the difference between the desired level of achievement and the likely level of achievement if no changes are made), and the performance outcomes of strategic change are viewed mainly in terms of goal achievement;

(2) **The interpretive model**, in which strategic change is triggered by dissatisfaction with ruling norms and values that reflect change in stakeholders' attitudes and perceptions, and the performance outcomes of strategic change are viewed mainly in terms of stakeholder satisfaction;

(3) **The adaptive-deterministic model**, in which strategic change is triggered by an environment-organization alignment gap that is generally caused by environmental changes, and performance outcomes of strategic change are generally viewed in terms of environment-organization alignment;

(4) **The adaptive-choice model** in which strategic change is triggered by perceived environmental uncertainty and resource tension that reflect dissatisfaction with present environment-organization alignment patterns, and performance outcomes of strategic change are generally viewed in terms of stakeholder satisfaction with the new environment-organization alignment.

4.6.4.4 Personal appeal and affection

Personal appeal and affection is influential in the development and implementation of strategic goals. It plays an active role in the selection of alternatives for parameters such as synergy orientation (central or decentral) and hierarchy (high or low). (Alsan and Oner, 2003).

Personal appeal is introduced as one of the nine tactics of influencing people (Yukl and Tracey, 1992). Other tactics are pressure, legitimation, exchange, coalition, ingratiation, rational persuasion, inspirational appeal, and consultation (Yukl and Tracey, 1992). From this perspective personal appeal is defined as "*the actor appeals to the target's sense of loyalty or friendship before requesting compliance* (Yukl and Tracey, 1992)".

The reason to select personal appeal as an indicator of *strategy vector* (actually *strategy magnitude*) is that in early studies it is also introduced as a source of power (Cartwright, 1959; Presthus, 1960; Filley and House, 1967) and plays an active role in the development of organizational strategies.

4.6.5 Strategic Structures

Strategic structures may be considered as supports of long-term adaptations and organizational strategic goals. The cell of strategic structures is the field where the organization deals with the future—especially the long term— and, with the overall outside environment, defines the strategies and models the organization (country) in its environment (Oner and Saritas, 2005).

The cell of strategic structures is located at the centre of IMM schematic display. Strategy vector constructs related to this cell are strategy process, focus, competency, associate and referent power. These constructs are demonstrated in Figure 68.

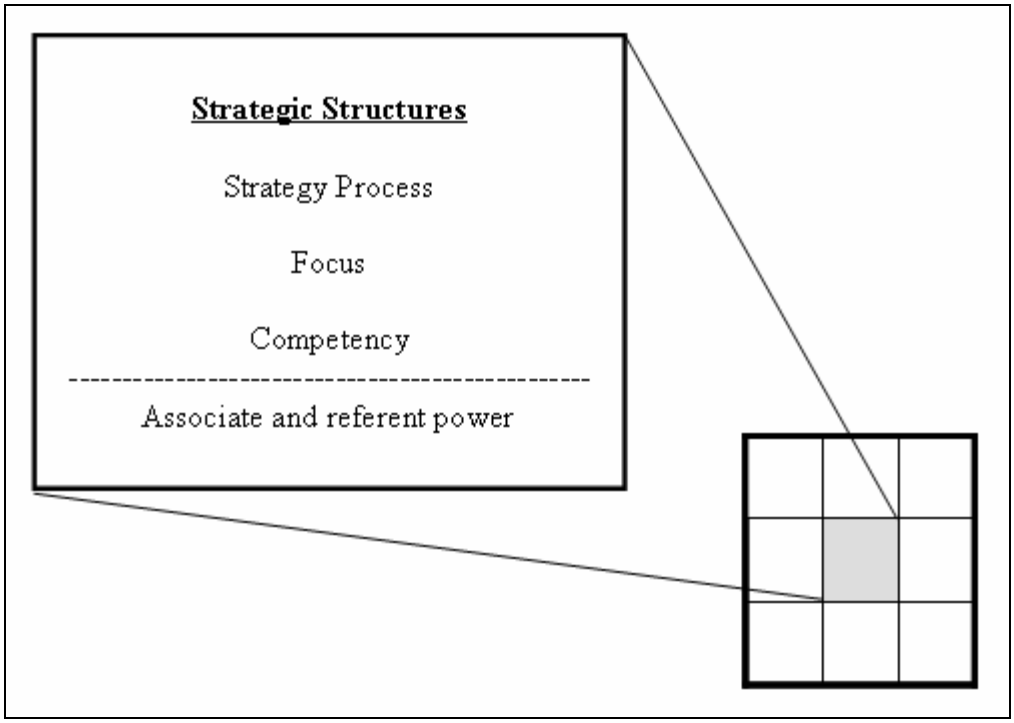


Figure 68 Constructs Related to Strategic Structures

4.6.5.1 Strategy Process

Strategy process is defined as the activities that aim at strategy formation and realization (Ala-Mutka, 2005). The strategy process deals with managerial issues such as analyses, decision-making, implementation and control as well as the persons involved during the process (Ala-Mutka, 2005). The strategy process is pertinent to the resource-committing actions taken by managers in different parts of the organization (Andersen, 2000). Thus it has close connection with the strategic structure of organizations.

The majority of the mature companies have explicit and fairly extensive strategy processes (Ala-Mutka, 2005). Those processes have to start and remain continuously focused on the interfaces with external environment (Gadde, Huemer and Hakansson, 2003). Due to this fact strategy processes must be *interactive, evolving, and responsive, instead of independently developed and implemented* (Gadde, Huemer and Hakansson, 2003). In other words the

organizational strategy vectors of firms are influenced by the organizational strategy vectors of other firms in the environment.

4.6.5.2 Focus

It might be convenient to analyze focus as internal and external focus. Internal focus is the degree of attention to internal factors, past performance, and analysis of strengths and weaknesses (Ramanujam, Venkatraman, and Camillus, 1986). External focus is the level of emphasis given to monitoring environmental trends (Ramanujam, Venkatraman, and Camillus, 1986). The primary concern of this study is internal focus which is accepted to be an indicator of *strategy direction*.

A focus on the content of strategic actions provides flexibility and enables managers to take advantage of competitive opportunities that develop rapidly in the new competitive business environment (Ireland and Hitt, 2005).

Negligence of external focus and concentration on only internal focus may prevent mangers from understanding the actual causes of specific events and may harm the strategic flexibility of the organization (Nadkarni and Narayanan, 2004).

4.6.5.3 Competency

Any kind of planning effort is supposed to consider an organization's core competencies and capabilities (Marino, 1996). The concept of "core competence", is based on a series of tests that identify organizational resources offering the greatest strategic value.

Competency exists at several levels such traits, motives, self-image, social roles, skills, specific actions or behaviors, and environmental factors and indicates a catch-all term that describes the characteristics that lead to success at a job or task (Boyatzis, 1982:35).

Core competencies often result from a blending of technology and production skills (Marino, 1996) are expected to (Prahalad and Hamel, 1990):

(1) Offer real benefits to customers,

(2) Be difficult for competitors to imitate, and

(3) Provide access to a variety of markets.

Behaviors deal with the internal social and cultural aspects and the integration of the organization with its environment. From this perspective competency potential of an organization may be addressed as a parameter of strategic behavior (Alsan and Oner, 2003). However the focus of this study is on the structural elements of competency as well as the instruments for the generation of competencies. Thus, it should be located in strategic structures cell of IMM.

4.6.5.4 Associate and referent power

Referent power means the power or ability of individuals to persuade and influence others and derives from qualities and characteristics that inspire trust, liking, and identification (French and raven, 1959). It is based on the charisma and interpersonal skills of the power holder. Here the person under power desires to identify with these personal qualities, and gains satisfaction from being an accepted follower (French and Raven, 1959). Associate power is also used with similar meaning (Filley and House, 1967).

Strategic structure, deals with parameters such as individuality of problem solving and leader-follower behavior (Alsan and Oner, 2003). Those parameters are closely related with associate and referent power especially among top and middle managers.

Strategic structure (just like associate and referent power) deals with dependency of value added activities whether they are independent or networking (Alsan and Oner, 2003). Dependency of value added activities addresses the relationship among individuals which is the basis of associate and referent power.

Studies proved that referent power is closely related with monetary rewards and suggest that those who no longer control monetary rewards experience a loss in referent power (Greene and Prodsakoff, 1981). Although this elaboration is not in the main scope of this study it is still crucial for the understanding of power sources in organizations.

4.6.6 Strategic Behaviors

Strategic behavior may be defined as *the cognitive, emotional, and territorial interplay of managers within (or between) groups when the agenda relates to strategic issues* (Grundy and Wensley, 1999, as cited in Oner and Saritas, 2005) is concerned with the development of the problem-solving skills of the members of the organization (Alsan and Oner, 2003). In other words strategic behavior is relevant to the development of the members of the organization in the light of the values and norms supplied by the organizational culture (Oner and Saritas, 2005).

The cell of strategic behaviors is located at the right side of middle line of IMM schematic display. Strategy vector constructs related to this cell are problem behavior, institutionalization, participation, rewards and sanctions. These constructs are demonstrated in Figure 69.

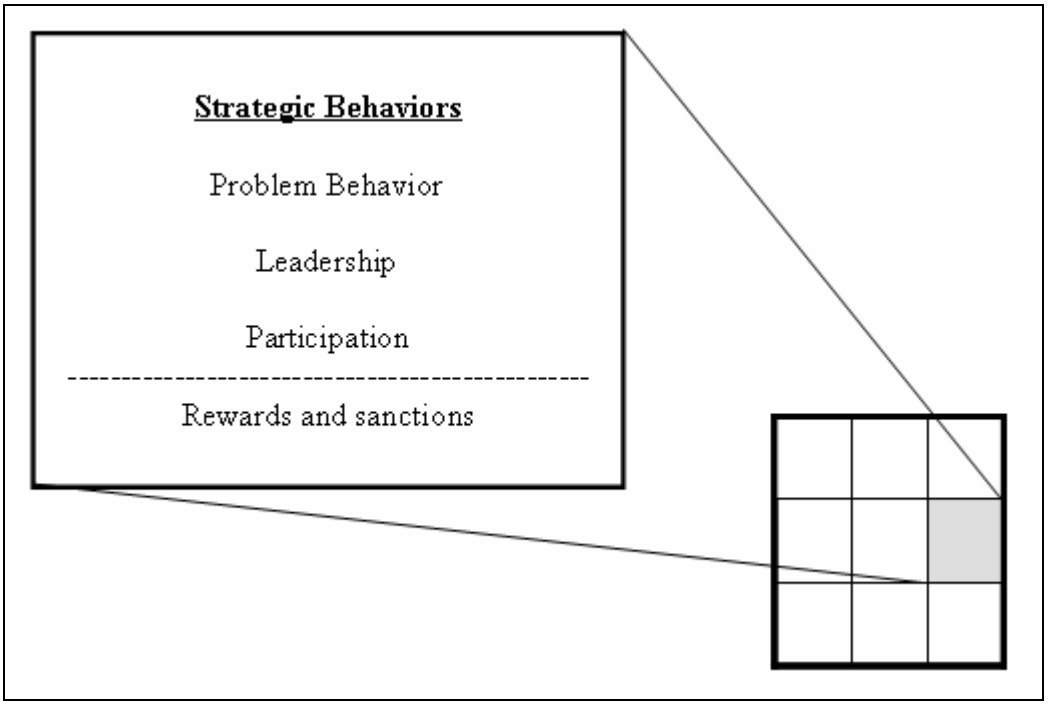


Figure 69 Constructs Related to Strategic Behaviors

4.6.6.1 Problem Behavior

Problem behavior includes the development of the problem-solving skills of the members of the organization in the light of values and norms supplied by the organizational culture (Besli, 2006). Problem behavior is developed at strategic level and than transformed into the problem-solving process of operative management which mainly deals with the following items (Alsan and Oner, 2003):

1. Controlling of single orders and tasks
2. The adaptation of the structures and management systems
3. The behavior of the members to the demand of the current situation.

4.6.6.2 Leadership

With a broader perspective one may claim that leadership has contributions on –and related to- all three levels (normative, strategic and operational) even all nine cells of IMM. But due to the focus of this study, the perspective of SVM proposes to allocate "leadership" in the IMM cell of strategic behaviors. In other words this study intends to analyze the strategic effects of leadership and consequently will concentrate more on strategic perspective of leadership than the other dimensions of leadership.

There are two distinctions between the terms "leadership" and "strategic leadership" (Hambrick and Pettigrew, 2001):

1. Leadership refers to leaders at any level in the organization, whereas strategic leadership refers to the study of people at the top of the organization. In this study the author tries to focus on the strategic dimensions of leadership at all levels of organizations (Hambrick and Pettigrew, 2001).
2. Leadership research focuses particularly on the relationship between leaders and followers. In contrast, strategic leadership research focuses on executive work, not only as a relational activity but also as a strategic activity and a symbolic activity (Hambrick and Pettigrew, 2001). In this study the author tries to include both approaches.

Strategic leadership is defined as a person's ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organization (Ireland and Hitt, 2005). Strategic leadership has a critical role on the determination of both *the individual strategy vectors* of employees and *the organizational strategy vectors*. Effective strategic leadership might be useful for an organization to be mobilized so that it can adapt its behaviors and exploit different growth opportunities (Ireland and Hitt, 2005).

Strategic leadership theory claims that companies are reflections of their top managers, and, in particular, of the chief executive officers (Ireland and Hitt, 2005). However this might be valid only when *the individual strategy vectors* of the top managers are dominant in *the organizational strategy vector*.

Generally employees, especially frontline workers, tend to think that leadership is on their side (Behn, 1995) and they try to arrange their individual strategy vectors according to their managers. However in some cases opposite situations may be observed. If *the strategy magnitudes of the individual strategy vectors* of top managers are not relatively much greater than the one of other employees, top managers may not reflect the whole organization.

Conditions -such as shorter product life cycles, ever accelerating rates and types of change, the explosion of data and the need to convert it to useable information- associated with the global economy's new competitive landscape might prevent single individuals from having all of the insights necessary to chart a firm's direction (Ireland and Hitt, 2005). Depending on the characteristics and environment of an organization the relative difference between *the strategy magnitude* of employees and top managers may vary. This variation is coined as *power difference* and analyzed in detail in Chapter 3. One thing that is demonstrated with *power difference* is that the relative magnitude differences between *the individual strategy vectors* may not be such significant in certain type of organizations.

Another approach claims that having strategic leadership centered on a single person or a few people at the top of a hierarchical pyramid may even be counterproductive (Bennis, 1997, cited in Ireland and Hitt, 2005). In other words having one dominant *individual strategy vectors* may not be preferred in some cases.

4.6.6.3 Participation

Herman (1994) believes that participative management has three advantages:

(1) More heads are better than one. Participation can improve the quality of the decision making, especially since employees are closer to the action.

(2) Consensus decision making is likely to be followed up more enthusiastically because people who take part in the decision are more motivated to implement it.

(3) Participation in decision making is effective on-the-job training for subordinates.

The participative management technique should not be used, says Herman (1994):

(1) When radical changes are needed quickly;

(2) If the team only interacts occasionally;

(3) If the power is not there to implement the group decision; and

(4) If the decision has already been made.

4.6.6.4 Rewards and sanctions

Reward Power depends upon the ability of the power wielder to confer valued material rewards, it refers to the degree to which the individual can give others a reward of some kind such as benefits, time off, desired gifts, promotions or increases in pay or responsibility (French and Raven, 1959).

Rewards and sanctions are also related with referent power. The managers associated with less reward power will have less ability to influence subordinates on the basis of his perceived referent power (Greene and Prodsakoff, 1981). Or in other words "*one's liking or attraction for individuals associated with rewards tends to increase, and our liking or attraction for individuals associated with punishers tends to decrease"* (Greene and Prodsakoff, 1981).

4.6.7 Operational Goals

The cell of operational goals includes the goal and success criteria established on higher logical levels (Oner and Saritas, 2005).

The cell of operational goals is located at the left lower corner of IMM schematic display. Strategy vector constructs related to this cell are Operational actions, individual progress, road mapping, expertise, knowledge and confidence. These constructs are demonstrated in Figure 70.

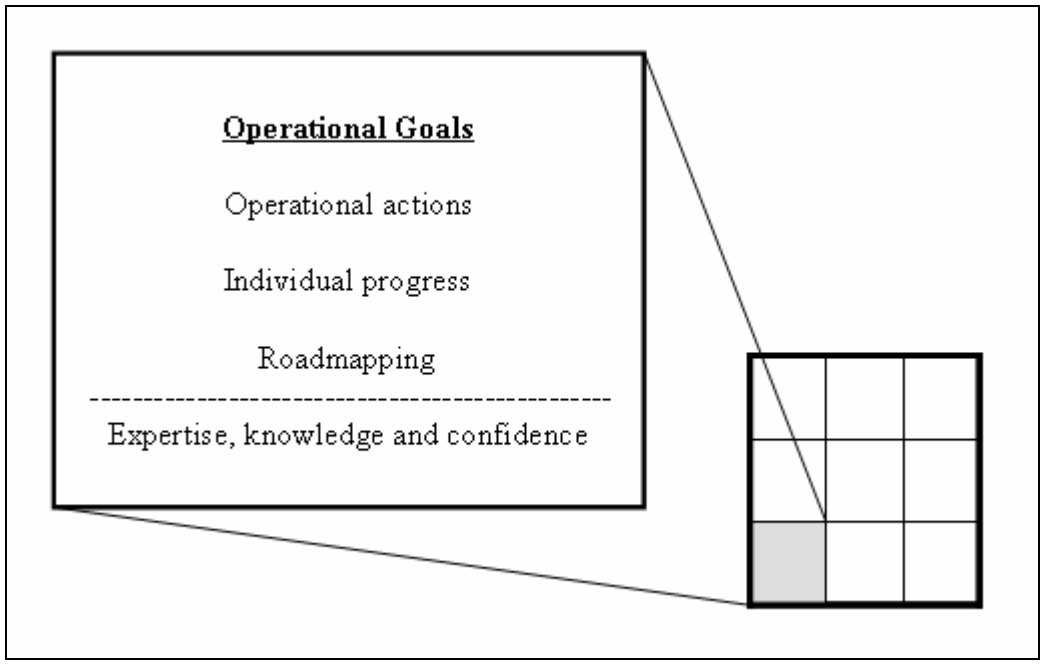


Figure 70 Constructs Related to Operational Goals

4.6.7.1 Operational actions

Operational actions are basically the result of all normative and strategic goals transferred to operational level (Alsan and Oner, 2003). Organization's actions are usually influenced by executives' perceptions (Chattopadhyay, Glick, and Huber, 2001). But other individuals in an organization influence the organizational actions as well.

Individuals are responsible for initiating and implementing the routines of organizations and allocating the resources and these activities interact with executives' perceptual processes (March, 1981) thus whether directly or indirectly individuals also influence the organizational actions.

Organizational actions may be interpreted in two dimensions:

- **Externally directed actions:** Externally directed actions *are aimed more at modifying the environment (by, for instance, developing a new market niche or altering regulatory legislation), may require managers to operate in domains where they have less control than they have within their organizations* (Chattopadhyay, Glick, and Huber; 2001).
- **Internally directed actions:** Internally directed actions *are aimed more at adapting an organization to the pressures of the environment (by, for instance, modifying organizational structure or setting up an interdepartmental committee), are often favored by executives, because they are generally less risky and easier to implement and control* (Chattopadhyay, Glick, and Huber; 2001).

The focus of this study is more on internal directed actions. But interpretation of measured *organizational strategy vector* may be extended to cover external directed actions as well.

4.6.7.2 Individual progress

Progress is defined as: "*Movement forward or onward; gradual development or improvement of something"* (Merriam-Webster, 2006). Similarly, individual progress refers to the gradual development of individuals.

Individual progress might also be possible in teams (Cianni and Wnuck, 1997) and deserves special attention. In a team model, the responsibility for individual progress is shared among three contributors (Cianni and Wnuck, 1997):

1. **The individual:** Individual is the one who is primarily responsible for (his/her own) individual progress including career planning, career goal setting, education and training (Cianni and Wnuck, 1997).
2. **The team:** Team is responsible *to acquire the roles of supervisors, help individuals by providing feedback on skills, identifying opportunities for growth and development, coaching and mentoring, and serving as training grounds for the acquisition of new skills and knowledge areas* (Cianni and Wnuck, 1997).

Team is also expected to *periodically review both team and individual progress toward attaining and demonstrating the competencies* such as the knowledge that underpins effective task performance, the range of skills necessary to perform the task, and the appropriate attitudes of team members that foster effective performance (Cianni and Wnuck, 1997).

3. **The organization:** Organization is responsible to *provide job-related training, an environment in which growth and development are valued, and human resource systems supportive of career development* (Cianni and Wnuck, 1997).

This study primarily focus on individual thus will use individual's perspective. However the evaluation of *individual strategy vectors* in a team will enable to better understand the dynamics of the team.

4.6.7.3 Roadmapping

Roadmapping is an effective tool *to capture, visualize, manipulate and manage information to decrease complexity in foresight by constructing roadmaps* (Saritas and Oner, 2004). Roadmaps may be constructed at four levels (Oner and Saritas, 2004):

(1) Research,

(2) Development,

(3) Capability, and

(4) Requirement.

In order to decrease the level of complexity of the implementation of normative and strategic goals at operational level, roadmapping might be used. Carefully developed and clearly introduced roadmaps will also overcome the restricted information processing capability of individuals (Oner and Saritas, 2004) and increase the performance of organization in terms of the implementation of organizational strategies.

The perspectives of organizations on roadmapping procedures, plays a critical role especially in the implementation of organizational strategies. Due to this fact roadmapping is considered to be one of the constructs of *strategy vectors* and included in the questionnaire.

4.6.7.4 Expertise, knowledge and confidence

Expertise, knowledge and confidence may all be summarized and included in the term of "expert power". Expert power is evaluated as a source of power even in early studies (Bierstedt, 1950; Simon, 1957; French and Raven, 1959; Presthus, 1960; Filley and House, 1967).

Expert power is basically an individual's power deriving from the skills or expertise of the person and the organization's needs for those skills and expertise (French and Raven, 1959).

Unlike the other sources of power, expert power is usually highly specific and limited to the particular area in which the expert is trained and qualified (French and Raven, 1959). Routinized organizational systems and structures support the development of such expertise by providing individual members with deep levels of substantive experience in a domain (Lawrence et al., 2005). As a consequence, individuals develop expertise that reflects their domain or the functional departments in which they have had experience (Bunderson, 2003).

Expertise (and expert power) is not always related to the acquisition of particular skills or knowledge but sometimes also to the legitimation of the community (Lawrence, 1995)

No matter how it is developed or how it is interpreted by others, expert power is one of the factor that effect the organizational strategy vector and will be evaluated in this section how it influences the direction of *the individual strategy vectors*.

4.6.8 Operational Structures

The operational structures support organizations for (Oner and Saritas, 2005);

(1) Autonomous adaptation to their environment,

(2) Optimization of ongoing business, attenuation, and amplification to damp oscillations and coordinate activities via information and coordination, establishing an overall optimum among basic units, and providing for synergies, resource allocation, investigation,

(3) Validation of information flowing between systems.

The cell of operational structures is located at the lower centre of IMM schematic display. Strategy vector constructs related to this cell are hierarchy, communication, use of technology, legitimacy. These constructs are demonstrated in Figure 71.

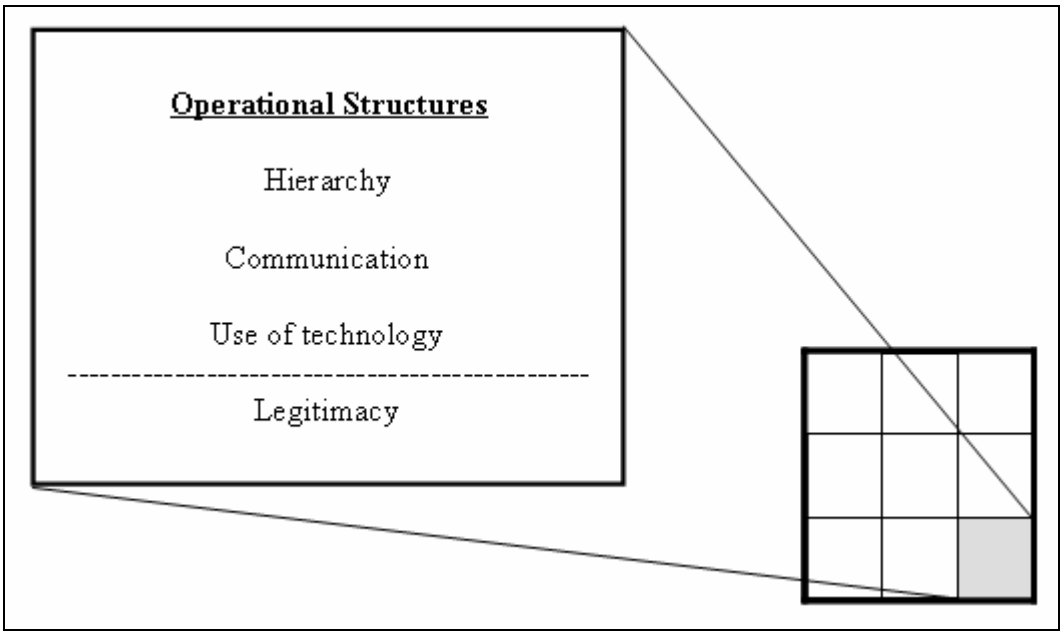


Figure 71 Constructs Related to Operational Structures

4.6.8.1 Hierarchy

A hierarchy is a system of ranking and organizing people, where each person in the system is subordinate to a single other person (Oxford English Dictionary, 2007).

Hierarchy is excelled at managing the routine tasks of manufacturing and an uneducated work force and due to this fact it dominated the Industrial Age (Halal, 1994). But the recent explosion of environmental turbulence has dramatically altered the situation (Halal, 1994). Currently the world is inherently an unpredictable flux of complexity and chaos (Waldrop, 1992; Halal, 1993).

But here are still benefits of using hierarchical systems. For example, under the cover of the hierarchy, communication can be easier and disagreement can easily be settled through authority (Garrouste and Saussier, 2005).

Hierarchical relationships are perceived as instrumental in the coordination of efforts and as determinants of power and status in social relationships (Mahoney, 1979) thus it will influence the magnitude of individual strategy vectors and shall be evaluated as one of the constructs.

4.6.8.2 Communication

Communication is defined as "*a process by which information is exchanged between individuals through a common system of symbols, signs, or behavior*" (Merriam-Webster Online Thesaurus, 2007). From the perspective of organizational strategies organizational and corporate communication shall be analyzed.

Organizational communication is defined as the "*flow and impact of messages within a network of interactional relationships*" (Tortoriello, Blatt and DeWine, 1978).

Corporate communication is defined as the company's announcements through all kinds of media. Or in other words corporate communication is how the company communicates with its surrounding (Fleischer, 2003, cited in Duszyiska and Trojanowski, 2006). But it is crucial to underline that corporate communication is not how organizations advertise themselves and their products (Fleischer, 2003, cited in Duszyiska and Trojanowski, 2006).

Corporate communication is strategically planned, free from contradictions, consequent communication inside and outside the organization based on the core goals (Fleischer, 2003, cited in Duszyiska and Trojanowski, 2006). It is also one of the most important metrics of strategy alignment (Luftman, 2003, 2003, 2005). From this point of view communication is accepted one of the constructs of strategy vectors and evaluated in operational structures cell of IMM

4.6.8.3 Use of technology

The performance of an organization especially in a developed economy depends heavily on technological progress (Chesbrough, 2003) and the use of technology.

Organizations may achieve global first mover advantage through the strategic use of technology. Acquiring technology would give organizations dominance in their environment (Hipkin, 2004). Especially in developing countries:

"Firms do not perceive technology as a long-term strategic competency. The use of technology has been to meet immediate operational needs. A technology-based strategy will require futuristic thinking with technology as a core competency, which can be controlled by managers" (Hipkin, 2004).

Organizations can also support individuals and knowledge work "*by the use of technology to create knowledge bases and telecommunications infrastructure and applications"* (Davenport, Jarvenpaa, and Beers, 1996).

It is pretty clear that the intense of the usage of technology will both influence individuals and organizations as well as their strategy vectors. However, in this study the focus is not primarily on the level of technology used by the individuals or organization but on the perceptions of individuals. It deals how technology is connected to the development and implementation of organizational strategy.

4.6.8.4 Legitimacy

Legitimate power refers to power of an individual because of the relative position and duties of the holder of the position within an organization (French and Raven, 1959). According to Drucker (1942, pp 34-35) "*power is legitimate when it is justified by an ethical or metaphysical principle that has been accepted by society*" and is heavily evaluated in early studies (Simon, 1957, p 103; French and Raven, 1959, p. 607; Cartwright, 1959, p. 607; Presthus, 1960, p. 86; Gilman, 1962; Losee and Hunzicker, 1967; Filley and House, 1967; Filley and Grimes, 1967). Legitimate Power is formal authority delegated to the holder of the position (French and Raven, 1959).

The distribution of legitimate power to organization units and positions determines the formal organization (Filley and Grimes, 1967) and plays a critical role in operational structures.

The formal organization is considered to refer to the structure designed by top managers in the organization (Filley and Grimes, 1967). However informal organization may be breed and feed by individuals both with and without legitimate power.

Special attention need to be allocated to legitimacy for the measurement of the magnitudes of *individual strategy vectors*. Legitimacy is related to the order of people in an organization and their relationships (Alsan and Oner, 2003) and is critical for the implementation of normative and strategic aims of the organizations (Alsan and Oner, 2003). Therefore it will be evaluated as a construct of operational structures in IMM.

4.6.9 Operational Behaviors

The operational behaviors field concerns with the development of attitudes in operational level in order to increase the performance of work processes and includes the creation of appropriate behaviors, motivation, coherency, and synergy among employees (Oner and Saritas, 2005).

The cell of operational behaviors is located at the right lower corner of IMM schematic display. Strategy vector constructs related to this cell are performance evaluation, internal cooperation, learning management, and coercive power. These constructs are demonstrated in Figure 72.

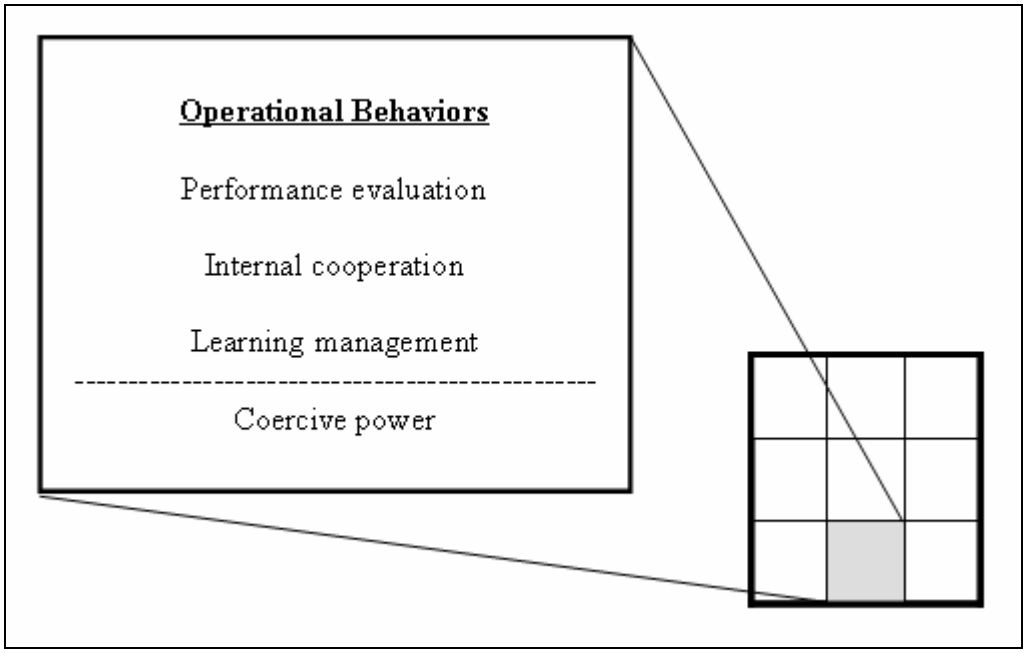


Figure 72 Constructs Related to Operational Behaviors

4.6.9.1 Performance evaluation

Performance evaluation includes the monitoring of qualitative and quantitative performance measures (Kettinger and Teng, 1998) of individuals in an organization. Three instinct classes of performance evaluation techniques can be identified. In order of decreasing specifity of performance expectations, these classes are listed as follows (Keeley, 1978):

(1) Behavior based procedures, which define performance in terms of observable, physical action.

(2) Objective based procedures, which define performance in terms of end results.

(3) Judgment-based procedures, which define performance in terms of the opinions of knowledgeable observers.

Despite the crucial role of performance evaluations, there still is limited understanding of the kinds of information supervisors use in reaching performance judgments (Ivancevich, 1983). Moreover, the performance evaluation data used to make judgments often do not correlate with objective measures of subordinates' performance (Anderson, Roush, and McClary, 1973).

Undoubtedly performance evaluation is one of the most critical operational behaviors that influence the organizational strategy as well as the organizational performance.

4.6.9.2 Internal cooperation

Internal cooperation is defined as the "propensity of the organization to engage in non-competitive activities internally among employees" (Anderson, Rungtusanatham and Schroeder 1994).

Internal cooperation is expected to improve coordination between departments (Smith, Carroll, and Ashford, 1995) and consequently the overall performance of the organization (Smith, Carroll, and Ashford, 1995; Anderson et al., 1995).

The execution of job responsibilities often requires the cooperation of co-workers. In these instances a co-worker could well perceive that authority to enlist his or her aid could be an integral part of the job itself (Cobb, 1980). This perception may first be developed via work socialization and maintained via supervisory and organizational practices (Strauss, 1962; Patchen, 1974).

4.6.9.3 Learning management

Learning management may be defined as the ability to design strategies that achieve specific, desired learning outcomes in organizations. A learning management strategy enables the organization to plan, apply, and evaluate various learning initiatives for employees.

Learning is an intentional process of testing acquired facts and accepting possible failures to determine whether these facts are congruent with existing knowledge. The difference between knowledge and learning is a matter of accurate and agreeable application on practice. Consequently, for a congregate of acquired facts to transform into knowledge, learning needs to occur (Georgievsky, 1997).

Not just individuals but also organizations hold knowledge (Senge, 1990) and actually learn (McElroy, 2000). Moreover, organizational improvement depends upon management's commitment to learning, its ability to learn, and its ability to continuously improve the learning process (Georgievsky, 1997).

Learning plays an active role both individual and organizational performances. Accordingly the management of learning is one of constructs that influence *the strategy vectors of individuals* and organizations.

4.6.9.4 Coercive power

Coercive Power means the application of negative influences onto employees. It might refer to the ability to demote or to withhold other rewards. It is the desire for valued rewards or the fear of having them withheld that ensures the obedience of those under power (French and Raven, 1959). In other words coercive power is *the A's ability to punish B if B does not comply with A's wishes* (French and Raven, 1959).

The basis of coercive power is significantly intercorrelated with the basis of expertise, reward, and referent power (Cobb, 1980). These bases are thought to be useful for the determination of *organizational strategy vector*. Cobb (1980) analyzed the correlation between coercive power and two types of informal influence:

1. informal influence expressed laterally between work unit peers
2. informal influence expressed up the chain of command

He come with the result that *coercive power was not significantly related to either direction of influence* (Cobb, 1980).

Coercive power is accepted to be in the operational behaviors cell because it is closely related with the implementation of normative or strategic goals coercively and comprises internal social and cultural aspects of the organization (Alsan and Oner, 2003).

4.6.10 Power Difference

Hawley accepts every social act as an exercise of power, every social group as a power equation and every social group as an organization of power (1963). Similarly every instance of interaction in organizations might be expected to involve an exercise of power, because actors clearly affect one another all the time they are interacting (Astley and Sachdeva, 1984).

As a consequence it is also possible to claim that the role of individuals in the existing organizational strategy vector might be expressed as a derivative of power. SVM claims that all individuals in organizations have either significant or negligible - but not zero -influence on the overall strategy vector of the organization. The amplitude of this influence is called as *strategic magnitude* in SVM. At first glance it might be accepted as directly proportional to hierarchical levels. Not surprisingly individuals from upper hierarchical levels are expected to have more influence on the organizational strategy and more contribution on the determination of *strategy vector*, than the ones from lower hierarchical levels.

In most of the organizations *the strategic magnitudes* of individuals might not be related only to hierarchical levels but also to some additional parameters explained in the previous section.

Either depending on hierarchical levels or to some other parameters *the strategic magnitudes* of individuals will not be the same. Actually there will be several levels of *strategic magnitude*. As introduced before SVM foresees five levels of *strategic magnitude* between 1 and 5 where 1 is the weakest and 5 is the strongest as explained in Chapter 3.

But this scaling will not be enough to express all types of organizations. In some organizations *the strategic magnitudes* between levels might be quite less than some other organizations.

To be able to normalize the difference between organizations, SVM proposes a parameter called *power difference* which helps us to determine the actual magnitude values of strategy vectors.

As explained Chapter 3 *power difference* is expressed with letters pd and is a parameter which indicates the down to earth and measurable difference between *the strategy magnitudes*. Although it is accepted as linear in this study there might be some cases where it is not. In such cases *the power difference* must be measured separately for each level.

Only one *pd valu*e will be measured in this study and it is assumed to be valid among all *strategic magnitude levels*. Some might argue that the power difference between strategic magnitude levels might not be linear. Although this argument is accepted to be significant the author will not cover it in this research. A focused future study might be established to determine the linearity of power difference among strategic magnitude levels.

Power distance parameter, which is widely used to highlight the cultural differences of countries (Hofstede, 1980) has similar characteristics with power difference, but with one significant difference. First is for the comparison of countries and latter is for the comparison of companies. In spite of this difference most of the parameters used for the measurement of *power difference* is derived from Hofstede's (1980) study.

For the measurement of *power difference,* following nine constructs are used:

1. **Responsibility:** Responsibility is shared among diverse individuals in the organization who try to develop organizational strategies to compose a viable future for their firm (Ireland and Hitt, 1999). The distribution of responsibility in organizations, influence the difference between employees from different hierarchical levels.
2. **Inequality:** How equality or inequality is emphasized among employees in the organization is one of the critical topics in organizations (Van Der Vegt, Van de Vliert, and Huang, 2005) and is closely related with *power difference*.
3. **Dependency:** Dependency of value-added activities is one the crucial parameters of organization policies which, "*deliver long-term and overall goals and a basic orientation for the strategic management*" (Alsan and Oner, 2003) and affect the level of *power difference* in the organization.
4. **Hierarchy:** The level of hierarchy determines the strategic structure of organizations (Alsan and Oner, 2003) and basically is dependent to the willingness of managers to delegate responsibility to others (Roberts, 1989).
5. **Vertical relationships:** Poor vertical relationships or communication generate problems during the implementation of the strategy (Maus, 1999).
6. **Legitimacy:** Just like other sources of power legitimacy is also not concrete but socially constructed, in other words *it is not objective but is created through management of meaning* (Voronov and Yorks, 2005)
7. **Rights:** Appreciation of links between individual rights and social responsibilities eliminates the conflict in the organization (Dunbar and Ahlstrom, 1995). The

balance between responsibilities and rights is dependent to the characteristics of the organization.

8. **Centralization:** Centralization causes managers to focus their attention, usually around a narrow set of core strategy concepts (Lyles and Schwenk, 1992 as cited in Nadkarni and Narayanan, 2004). In other words, "*centralized frames mainly promote a single dominant logic*" (Nadkarni and Narayanan, 2004). The level of centralization influences the organizational strategy.

9. **Decision making:** In decision making process, the level of participation plays a vital role. Participation introduces three advantages: "*Participation can improve the quality of the decision making, consensus decision making is likely to be followed up more enthusiastically and finally participation in decision making is effective on-the-job training for subordinates*" (Herman, 1994).

5 EMPIRICAL STUDY

The purpose of this section is to introduce the empirical study of the proposed model.

5.1 Sample

For the pilot study 44 participants from 15 different organizations are selected. For the actual study, the intention was to apply the model to at least three big sized organizations listed on National Stock Exchange Market. But due to various reasons this was not managed. Instead three organizations from three different industries are selected. 46 employees from SYK Custom Brokerage, 45 employees from SeaBank, and 18 employees from Teknoden have participated in the research. Number of total participants including pilot study was 154.

5.2 Structure of the Empirical Study

The overall *strategy vector of the organization* is obtained through two steps. First the *strategy vector of individuals* are measured and then summed up to calculate the *organizational strategy vector*. As illustrated in the Figure the process includes measured and calculated parameters.

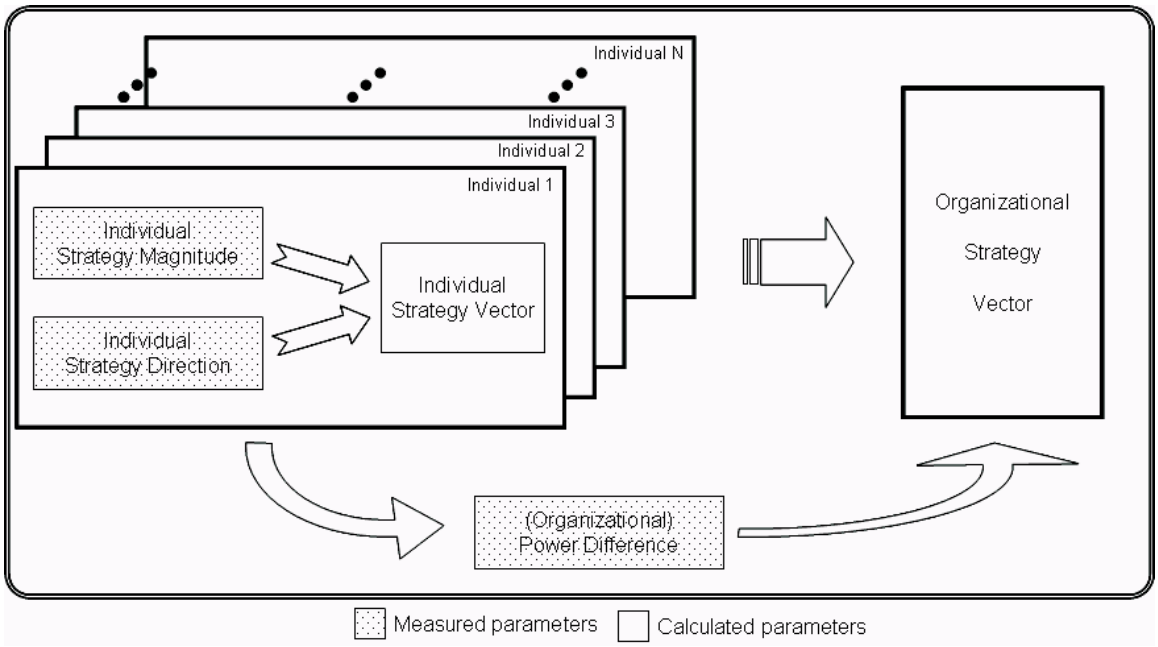


Figure 73 Schematic Display of SVM

As explained before, *Individual strategy vector* is composed of two vector components: *Strategy direction* and *strategy magnitude*. *Strategy direction and strategy magnitude* of each individual in the organization will be measured separately and their combination will generate *the individual strategy vector*.

The summation of *individual strategy vector* will give *the organizational strategy vector*. But the summation process has to be done after the measurement of *power difference* which determines the relative magnitudes of *individual strategy vectors* from different levels.

5.3 Questionnaire

To benefit from the advantages of local computer network systems the questionnaire is developed on computer environment as a MS Excel file. Local computer network is expected to be available in most of the medium-big sized organizations.

Questionnaire is composed of 5 sections and 77 questions. These are marked as **SECTION 1**, **SECTION 2**, **SECTION 3**, **SECTION 4**, and **SECTION 5**. Questionnaire in Turkish in Appendix 1.

The first part of the questionnaire consists of five questions requesting demographic information. The second section includes questions which measure vertical components of the participants' strategy direction and consist of 27 questions. Similarly, the third section also includes 27 questions and measures the horizontal components of the participants' strategy direction. Fourth section measures the strategy magnitude and includes 9 questions. Finally, the fifth section also includes 9 questions and measures the *power difference* in the organization.

Each section is developed as a separate sheet in the same MS Excel file and participants are asked to fill in all sections. The routing instructions for each section are provided on the top of the sheet which includes related questions.

5.4 Pilot Study

This pilot study might be accepted as a kind of feasibility study which is a small scale version, or trial run, done in preparation for the major study (Polit, Back and Hungler, 2001: 467)". Reasons for conducting such a pilot study are as follows (Van Teijlingen and Hundley, 2001):

1. Developing and testing adequacy of research instruments,
2. Assessing the feasibility of a (full-scale) study/survey,
3. Designing a research protocol,
4. Assessing whether the research protocol is realistic and workable,
5. Establishing whether the sampling frame and technique are effective,
6. Assessing the likely success of proposed recruitment approaches,
7. Identifying logistical problems which might occur using proposed methods,
8. Estimating variability in outcomes to help determining sample size,
9. Collecting preliminary data,
10. Determining what resources are needed for a planned study,
11. Assessing the proposed data analysis techniques to uncover potential problems,

12. Developing a research question and research plan,
13. Training a researcher in as many elements of the research process as possible,
14. Convincing funding bodies that the research team is competent and knowledgeable,
15. Convincing funding bodies that the main study is feasible and worth funding, and
16. Convincing other stakeholders that the main study is worth supporting.

Except item 15 and 16 all other items listed above, are valid for the pilot study conducted for this research.

The pilot study is performed on 44 participants from 15 different organizations and at various hierarchical levels (level 5=3, level 4=4, level 3= 12, level 2= 2, and level 1=23) as illustrated below.

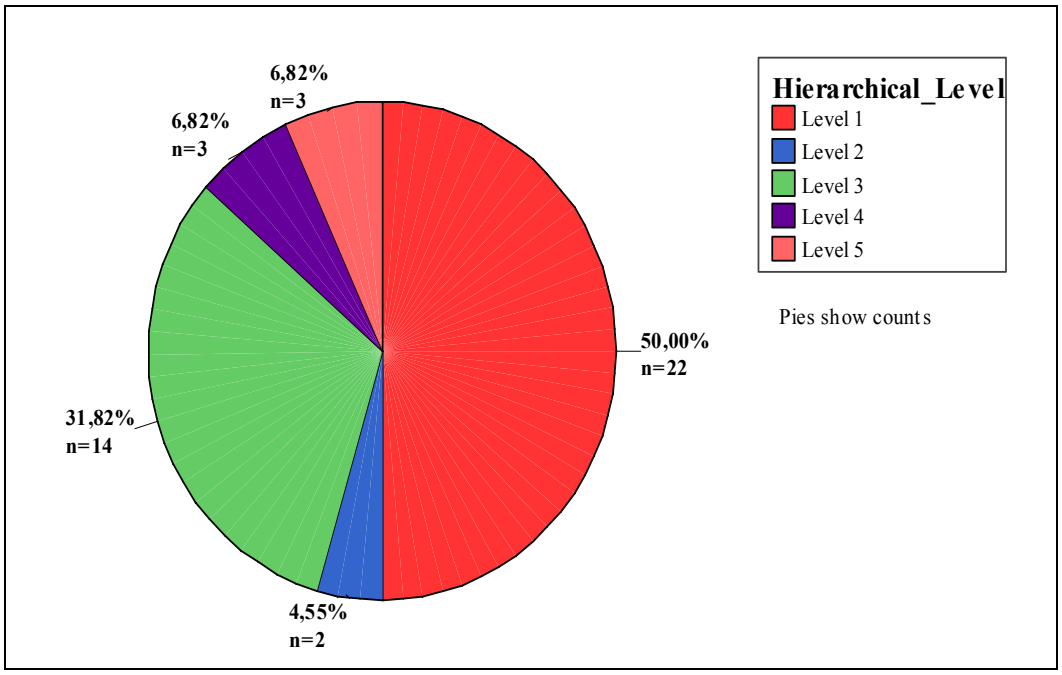


Figure 74 Statistics of Hierarchical Levels

Demographic information related to the sample group used for pilot study are shown below.

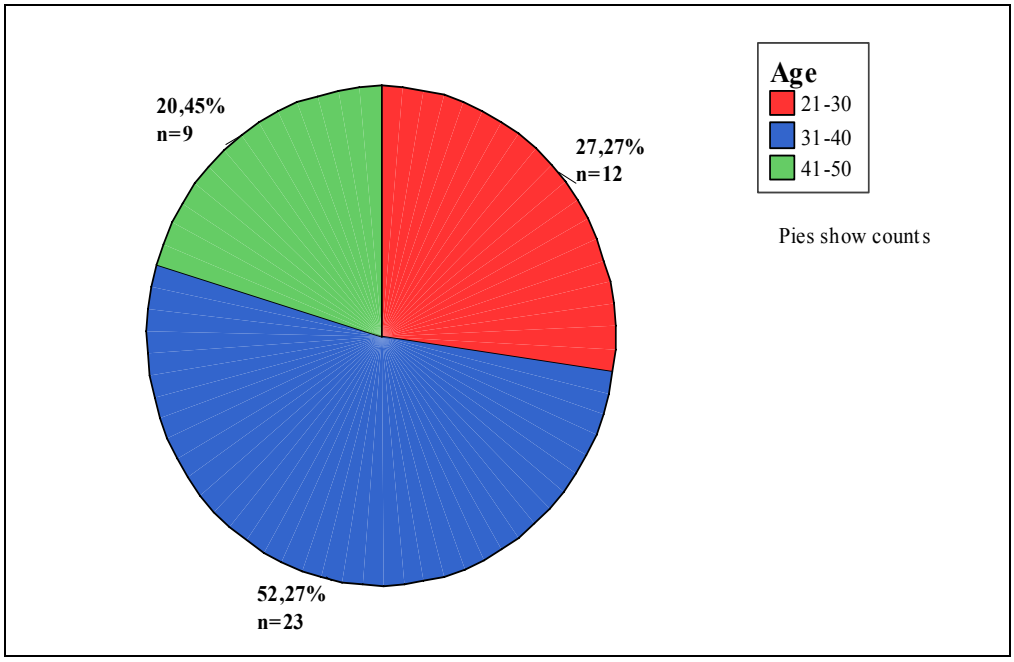


Figure 75 Age Statistics

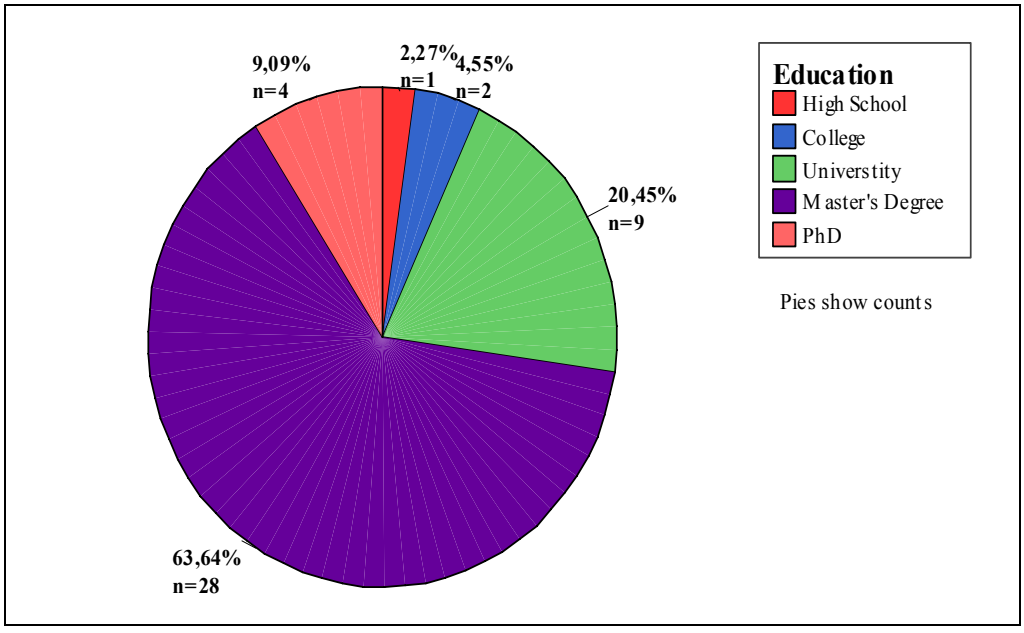


Figure 76 Statistics of Education Levels

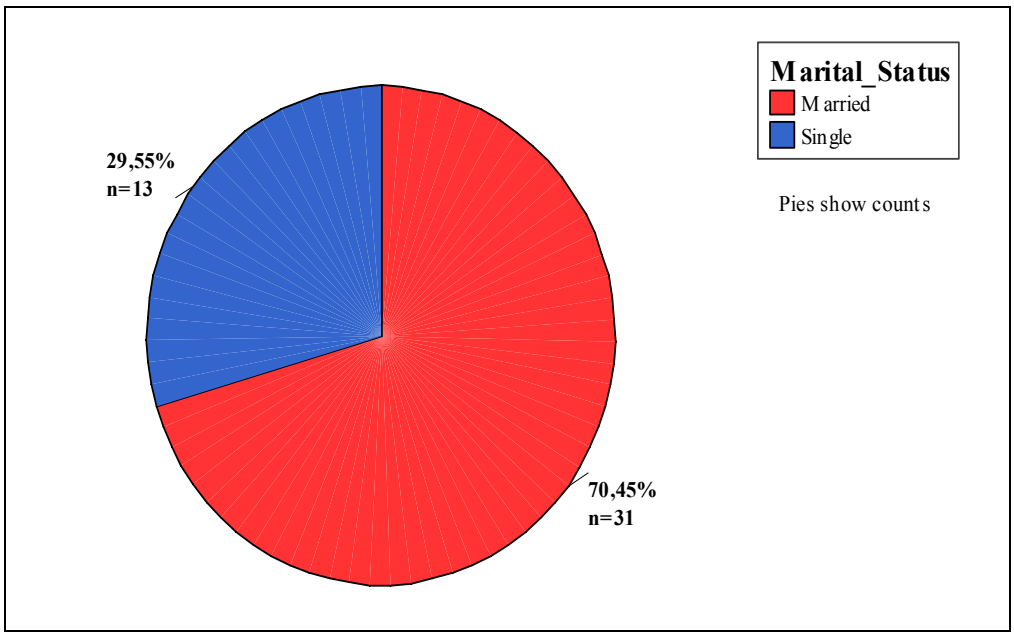


Figure 77 Statistics of Marital Status

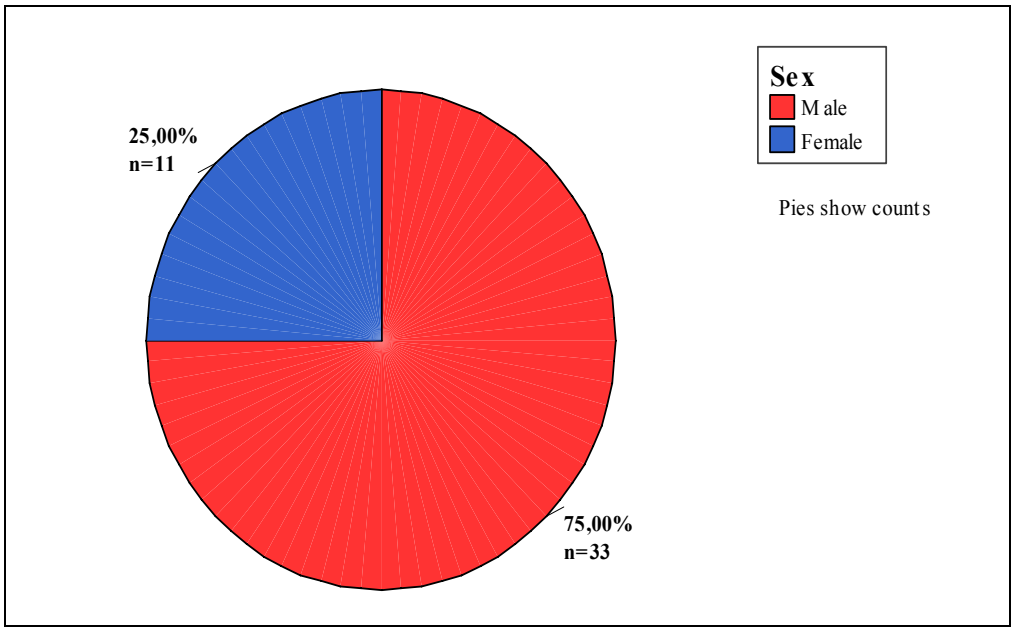


Figure 78 Sex Statistics

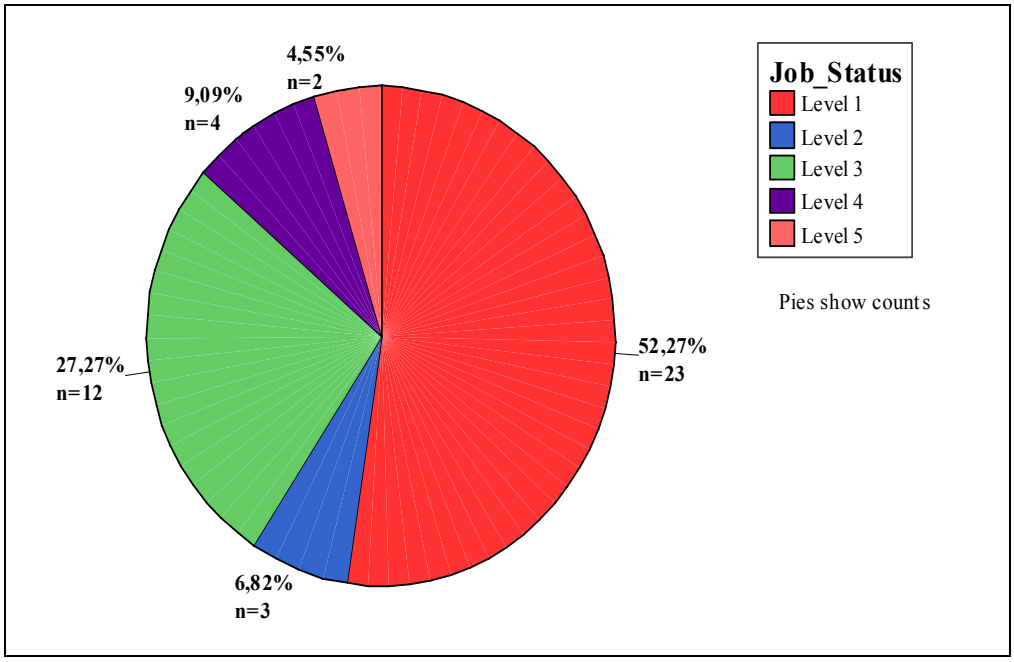


Figure 79 Statistics of Job Status

Participants expressed that the questionnaire was easy to understand. Common belief was that the margins of answers were demonstrated clearly and there was no confusion in answering the questions.

The questionnaire was applied two times, with 2-4 week time difference, for reliability and validity analysis. The two sets of raw data obtained by pilot study are shown in table 15 and 16.

Table 15 First Set of Pilot Study Raw Data

Part. #	Hie.Level	Str.Dir.Y	Str.Dir.X	Str.Dir.	R.Str.Mag.	R.Pow.Dif.
1	3	2,93	1,52	62,57	7,00	7,67
2	2	1,37	1,44	43,49	6,33	5,22
3	3	1,22	-0,96	128,23	6,33	4,67
4	3	-1,11	0,15	-82,41	6,67	6,11
5	1	3,70	3,70	45,00	1,00	8,78
6	4	1,85	2,19	40,28	3,22	8,00
7	1	2,89	2,15	53,37	4,78	6,56
8	1	1,19	2,00	59,35	3,89	8,11
9	1	-0,70	-0,93	-142,77	3,67	6,44
10	4	3,67	1,26	71,05	7,78	8,22
11	1	-2,07	-1,33	-122,74	5,44	4,56
12	5	1,00	0,33	71,57	7,22	6,11
13	4	0,70	2,56	15,40	4,00	4,44
14	3	3,85	0,44	83,42	7,22	7,22
15	3	0,33	-1,07	162,76	3,22	7,56
16	5	-3,56	0,41	-83,46	7,33	7,44
17	1	-1,67	-0,81	-116,05	3,78	7,22
18	1	2,81	1,93	55,62	4,11	5,44
19	5	0,81	-0,07	95,19	4,89	5,33
20	1	1,74	1,11	57,45	4,44	6,78
21	1	2,56	1,22	25,56	5,00	7,56
22	1	0,11	-0,04	-18,43	4,56	4,89
23	1	3,70	3,56	43,83	4,11	5,89
24	2	2,78	2,11	37,23	6,44	6,56
25	3	3,19	2,52	38,33	6,44	6,89
26	1	-1,19	0,22	-10,62	3,89	6,67
27	1	1,89	0,33	10,01	3,78	6,67
28	1	3,00	-2,00	-33,69	1,00	8,00
29	1	2,48	-1,81	-36,18	2,22	7,89
30	1	2,07	1,04	26,57	8,11	7,67
31	3	3,15	3,00	43,62	8,22	7,44
32	3	3,59	3,59	45,00	8,11	8,78
33	3	2,22	1,85	39,81	5,56	7,00
34	1	-1,96	1,22	-31,91	6,78	6,00
35	3	3,22	-0,11	-1,97	6,56	7,22
36	1	0,74	0,22	16,70	4,78	7,11
37	1	1,74	3,07	60,48	6,33	6,33
38	3	1,04	0,67	32,74	6,78	7,00
39	1	-0,11	-0,04	18,43	2,44	6,44
40	1	3,93	2,00	27,00	5,00	8,44
41	1	2,96	0,78	14,71	6,11	7,00
42	3	2,96	3,26	47,73	7,67	8,67
43	3	3,74	3,78	45,28	7,00	6,11
44	3	3,33	2,33	34,99	5,56	8,22

Table 16 Second Set of Pilot Study Raw Data

Part. #	Hie.Level	Str.Dir.Y	Str.Dir.X	Str.Dir.	R.Str.Mag.	R.Pow.Dif.
1	3	1,67	-2,59	147,26	4,78	6,00
2	2	1,37	1,44	43,49	6,33	5,22
3	3	1,48	-1,00	124,02	6,22	5,00
4	3	-0,81	0,30	-70,02	6,78	6,00
5	1	3,56	3,37	46,53	1,00	8,00
6	4	1,96	2,15	42,42	3,89	6,11
7	1	3,04	2,07	55,67	4,44	6,44
8	1	1,00	1,26	51,55	3,89	8,00
9	1	-0,78	-1,04	-143,13	3,44	6,89
10	4	3,11	2,59	50,19	6,89	6,89
11	1	-2,07	-1,41	-124,16	5,22	4,89
12	5	2,15	1,89	48,67	7,11	5,74
13	4	0,22	1,22	10,30	4,44	5,56
14	3	3,85	0,15	87,80	6,44	8,11
15	3	0,33	-1,00	161,57	1,89	7,22
16	5	-3,59	0,37	-84,11	7,56	7,11
17	1	-1,26	-0,74	-120,47	5,44	6,44
18	1	1,30	2,33	29,05	4,89	6,78
19	5	0,85	-0,44	117,55	5,44	4,67
20	1	1,56	0,85	61,29	4,00	7,11
21	1	2,59	1,22	25,24	4,44	7,56
22	1	2,04	1,70	39,91	4,78	5,00
23	1	3,48	3,56	45,60	4,11	5,56
24	2	3,07	2,48	38,91	6,33	6,67
25	3	3,33	2,33	34,99	6,33	7,22
26	1	-1,48	0,33	-12,68	3,89	7,44
27	1	1,93	0,41	11,94	3,22	7,22
28	1	3,89	-1,93	-26,35	1,00	8,00
29	1	2,37	-1,52	-32,64	1,44	8,11
30	1	2,04	1,93	43,39	8,56	7,44
31	3	3,15	3,00	43,62	8,22	7,44
32	3	3,04	3,59	49,79	8,11	8,78
33	3	2,19	1,44	33,47	5,78	6,78
34	1	-2,11	1,59	-37,03	6,56	7,00
35	3	3,22	-0,04	-0,66	5,56	6,78
36	1	1,07	0,44	22,48	5,11	7,33
37	1	0,81	2,59	72,55	5,56	6,44
38	3	2,00	1,22	31,43	6,78	7,00
39	1	-0,04	0,48	-85,60	2,11	6,44
40	1	3,93	2,22	29,51	5,56	7,89
41	1	2,85	0,56	11,02	4,11	7,33
42	3	2,74	3,37	50,88	7,56	8,67
43	3	3,81	3,78	44,72	7,11	6,56
44	3	3,41	2,19	32,67	5,22	8,22

The first column refers to the participant's number while the second refers to the hierarchical level of the participant. Third column of the table refers to the vertical component of the strategy direction and has the margins of "conservative" and "innovative". Similarly fourth column refers to the horizontal component of the strategy direction and has the margins of "adaptive" and "erratic". Fifth column refers to the direction of the strategy vector and is calculated with the following formula.

$$Strategy\ Direction = Arc\tan\left(\frac{Strategy Direction\ Y\ Component}{Strategy Direction\ X\ Component}\right) \qquad (32)$$

Strategic direction is the angle between the individual strategy vector and the horizontal axis to the right from the origin.

Sixth column of the table refers to the raw strategy magnitude. The outcomes of the questionnaire ignore the influence of power difference on the strategy magnitudes of individuals and due to this fact measured strategy magnitudes are addressed as raw values. To be able to calculate the actual strategy magnitude of each individual the impact of power difference has to be applied on measured values. The formula for this calculation is as follows:

$$Strategy\ Magnitude = RSM \cdot PD^{HL} \cdot NF \qquad (33)$$

RSM : *Raw Strategy Magnitude*

PD : *Power Difference*

HL : *Hierarchical Level*

NF : *Normalization Factor*[*]

[*] *NF will be explained later*

Finally the seventh column of the table refers to the raw numbers for the *power difference* which is the power difference perceived by an individual. The questionnaire developed for the measurement of power difference only measures the perception of each individual separately and the outcomes might be addressed as raw *power difference* values. For the calculation of organizational power difference the perceived raw *power difference* values need to be averaged. In the pilot study, the power difference of the organization is calculated to be 6,84 for the first data set and 6,87 for the second data set.

First and second data sets went through several processes to demonstrate information about the strategy of the organization. The process of transforming raw power difference to actual power difference was explained **above**. Second process is the transformation of raw *strategy magnitude* to actual *strategy magnitude* which is done by multiplying all raw *strategy magnitude* values by a factor called Normalization Factor.

Normalization Factor (NF) normalizes the strategy magnitudes to 100 thus the highest value of strategy magnitude will be 100. Normalization factor is obtained as follows:

$$NF = \frac{100}{PD^{5}\square 9} \tag{34}$$

For the first data set of the pilot study the NF is calculated to be 0.0113.

By using Formulas 33 and 34, the strategy magnitudes of participants for data set 1 and 2 are respectively as follows:

Table 17 Transformation From Raw Strategy Magnitude to Strategy Magnitude–Data set 1

Part. #	Hie.Level	R.Str.Mag.	Str.Mag.
1	3	7,00	1,13
2	2	6,33	0,22
3	3	6,33	1,48
4	3	6,67	1,61
5	1	1,00	0,01
6	4	3,22	6,32
7	1	4,78	0,02
8	1	3,89	0,02
9	1	3,67	0,02
10	4	7,78	11,19
11	1	5,44	0,03
12	5	7,22	79,00
13	4	4,00	7,21
14	3	7,22	1,53
15	3	3,22	0,45
16	5	7,33	84,00
17	1	3,78	0,03
18	1	4,11	0,02
19	5	4,89	60,49
20	1	4,44	0,02
21	1	5,00	0,02
22	1	4,56	0,02
23	1	4,11	0,02
24	2	6,44	0,22
25	3	6,44	1,50
26	1	3,89	0,02
27	1	3,78	0,02
28	1	1,00	0,01
29	1	2,22	0,01
30	1	8,11	0,04
31	3	8,22	1,95
32	3	8,11	1,92
33	3	5,56	1,37
34	1	6,78	0,03
35	3	6,56	1,32
36	1	4,78	0,03
37	1	6,33	0,03
38	3	6,78	1,61
39	1	2,44	0,01
40	1	5,00	0,03
41	1	6,11	0,02
42	3	7,67	1,79
43	3	7,00	1,69
44	3	5,56	1,24

Table 18 Transformation from Raw Strategy Magnitude to Strategy Magnitude–Data set 2

Part. #	Hie.Level	R.Str.Mag.	Str.Mag.
1	3	7,00	1,65
2	2	6,33	0,22
3	3	6,33	1,49
4	3	6,67	1,57
5	1	1,00	0,00
6	4	3,22	5,21
7	1	4,78	0,02
8	1	3,89	0,02
9	1	3,67	0,02
10	4	7,78	12,58
11	1	5,44	0,03
12	5	7,22	80,22
13	4	4,00	6,47
14	3	7,22	1,70
15	3	3,22	0,76
16	5	7,33	81,44
17	1	3,78	0,02
18	1	4,11	0,02
19	5	4,89	54,33
20	1	4,44	0,02
21	1	5,00	0,02
22	1	4,56	0,02
23	1	4,11	0,02
24	2	6,44	0,22
25	3	6,44	1,52
26	1	3,89	0,02
27	1	3,78	0,02
28	1	1,00	0,00
29	1	2,22	0,01
30	1	8,11	0,04
31	3	8,22	1,93
32	3	8,11	1,91
33	3	5,56	1,31
34	1	6,78	0,03
35	3	6,56	1,54
36	1	4,78	0,02
37	1	6,33	0,03
38	3	6,78	1,59
39	1	2,44	0,01
40	1	5,00	0,02
41	1	6,11	0,03
42	3	7,67	1,80
43	3	7,00	1,65
44	3	5,56	1,31

Now the problem was the relative difference between strategy magnitudes of the individuals. As seen in the table, the biggest strategy magnitude value is 92,56 while the smallest value is 0.01. Drawing all individual strategy vectors on the same graph might cause visual confusion and not be enough to display relative difference. Solution for this confusion is using decibels. Decibel might be expressed as "10 times the logarithm of a specific value". For strategy magnitude the formula becomes as follows:

$$Strategy\ Magnitude(dB) = 10 \cdot \log\left(\frac{Strategy\ Magnitude}{0,001^{*}}\right) \qquad (35)$$

$^{*}\ 0,001 is\ the\ reference\ value$

dB refers to decibel and Strategy Magnitude (dB) refers to the decibel of strategy magnitude. After applying this calculation to the regular values of strategy magnitude following values are obtained.

Table 19 Strategy Magnitude Decibel Values – Data Set 1

Part. #	Hie.Level	R.Str.Mag.	Str.Mag.	Str.Mag.(dB)
1	3	7,00	1,13	30,55
2	2	6,33	0,22	23,42
3	3	6,33	1,48	31,69
4	3	6,67	1,61	32,07
5	1	1,00	0,01	7,05
6	4	3,22	6,32	38,00
7	1	4,78	0,02	13,52
8	1	3,89	0,02	12,95
9	1	3,67	0,02	12,41
10	4	7,78	11,19	40,49
11	1	5,44	0,03	14,23
12	5	7,22	79,00	48,98
13	4	4,00	7,21	38,58
14	3	7,22	1,53	31,84
15	3	3,22	0,45	26,52
16	5	7,33	84,00	49,24
17	1	3,78	0,03	14,41
18	1	4,11	0,02	13,94
19	5	4,89	60,49	47,82
20	1	4,44	0,02	13,07
21	1	5,00	0,02	13,52
22	1	4,56	0,02	13,84
23	1	4,11	0,02	13,19
24	2	6,44	0,22	23,42
25	3	6,44	1,50	31,77
26	1	3,89	0,02	12,95
27	1	3,78	0,02	12,13
28	1	1,00	0,01	7,05
29	1	2,22	0,01	8,65
30	1	8,11	0,04	16,37
31	3	8,22	1,95	32,90
32	3	8,11	1,92	32,84
33	3	5,56	1,37	31,37
34	1	6,78	0,03	15,22
35	3	6,56	1,32	31,20
36	1	4,78	0,03	14,13
37	1	6,33	0,03	14,50
38	3	6,78	1,61	32,06
39	1	2,44	0,01	10,29
40	1	5,00	0,03	14,50
41	1	6,11	0,02	13,19
42	3	7,67	1,79	32,54
43	3	7,00	1,69	32,27
44	3	5,56	1,24	30,93

Table 20 Strategy Magnitude Decibel Values – Data Set 2

Part. #	Hie.Level	R.Str.Mag.	Str.Mag.	Str.Mag.(dB)
1	3	7,00	1,65	32,17
2	2	6,33	0,22	23,36
3	3	6,33	1,49	31,73
4	3	6,67	1,57	31,96
5	1	1,00	0,00	6,98
6	4	3,22	5,21	37,17
7	1	4,78	0,02	13,77
8	1	3,89	0,02	12,88
9	1	3,67	0,02	12,62
10	4	7,78	12,58	41,00
11	1	5,44	0,03	14,33
12	5	7,22	80,22	49,04
13	4	4,00	6,47	38,11
14	3	7,22	1,70	32,30
15	3	3,22	0,76	28,80
16	5	7,33	81,44	49,11
17	1	3,78	0,02	12,75
18	1	4,11	0,02	13,11
19	5	4,89	54,33	47,35
20	1	4,44	0,02	13,45
21	1	5,00	0,02	13,97
22	1	4,56	0,02	13,57
23	1	4,11	0,02	13,12
24	2	6,44	0,22	23,44
25	3	6,44	1,52	31,81
26	1	3,89	0,02	12,88
27	1	3,78	0,02	12,75
28	1	1,00	0,00	6,98
29	1	2,22	0,01	10,44
30	1	8,11	0,04	16,07
31	3	8,22	1,93	32,87
32	3	8,11	1,91	32,81
33	3	5,56	1,31	31,16
34	1	6,78	0,03	15,29
35	3	6,56	1,54	31,88
36	1	4,78	0,02	13,77
37	1	6,33	0,03	14,99
38	3	6,78	1,59	32,03
39	1	2,44	0,01	10,86
40	1	5,00	0,02	13,97
41	1	6,11	0,03	14,84
42	3	7,67	1,80	32,56
43	3	7,00	1,65	32,17
44	3	5,56	1,31	31,16

Assuming that all participants were in the same organization the author measured the organizational strategy vector by summing all individual strategy vectors for each data set. The results are provided below:

Table 21 Calculated Organizational Strategy Vector – Data set 1

Organizational Strategy Vector		
Str.Dir.	**Str.Mag. (dB)**	**Pow.Dif.**
56	54,31	6,84

Table 22 Calculated Organizational Strategy Vector – Data set 2

Organizational Strategy Vector		
Str.Dir.	**Str.Mag. (dB)**	**Pow.Dif.**
55,45	54,2	6,87

5.5 The Computer Model

The author developed a MATLAB based computer model for the evaluation of organizational strategy vectors and data sets. The purpose of the model is not only to calculate *the organizational strategy vector* and display *strategy status* of the organizations but also to highlight the strategy problems including *strategy deviation, strategy deficiency, and strategy anomalies.*

The computer model is composed of three sections. First section is the interactive part where the user asked to enter the aimed *strategy direction* and *strategy magnitude*. *Strategy deviation* and *strategy deficiency* are also calculated and displayed in this part.

Following is the screen snap shot of this section.

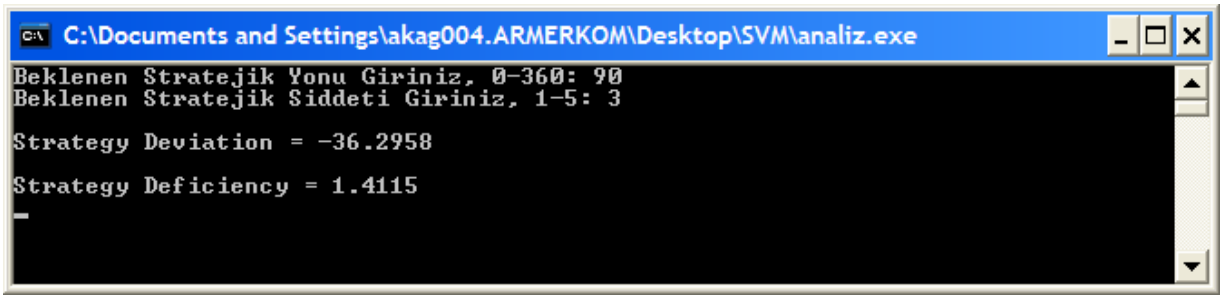


Figure 80 Interactive Section of The Computer Model

Second and third sections of the computer model are displayed on the same display as two separate graphs. Sample screen snap shots are demonstrated in Figure 76 and 77:

For demonstration purposes we accepted *the strategy direction* of the virtual organization to be 90°. Similarly *the strategy magnitude* is accepted to be 3.

The results of the model for two data sets are demonstrated below.

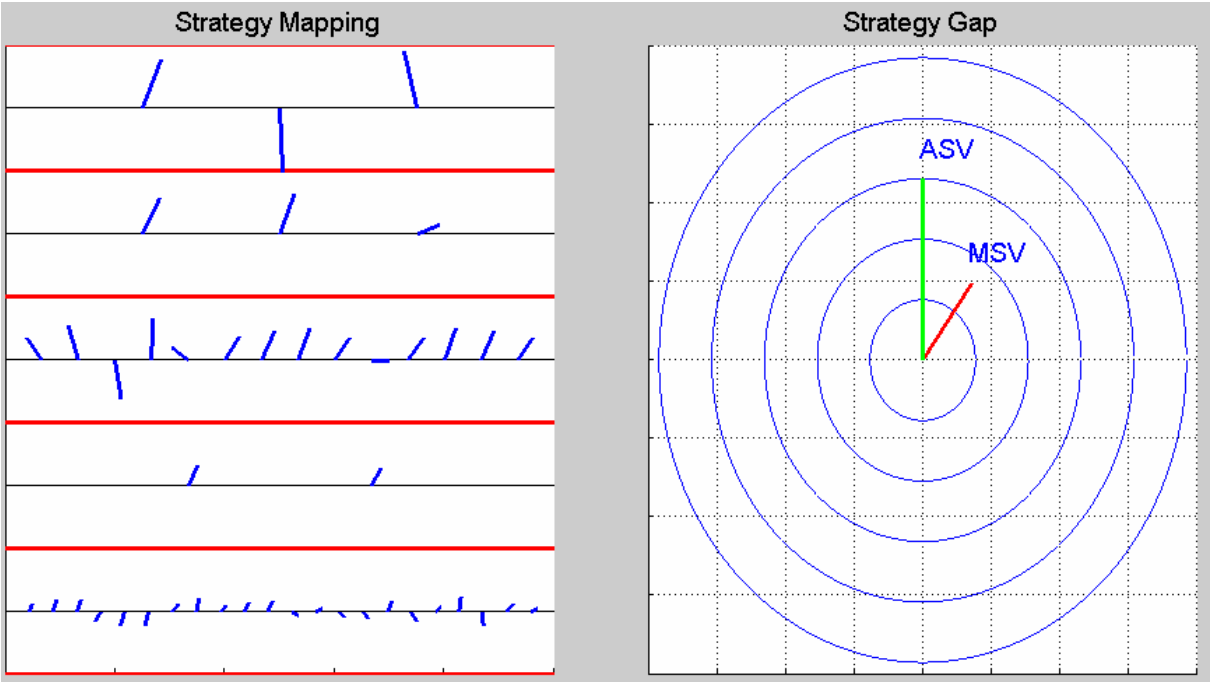


Figure 81 Strategy Mapping and Strategy Gap for Data Set 1

First display is developed by mapping all *individual strategy vectors* in the related hierarchical levels. A better view might be obtained by mapping *individual strategy vectors* on the organizational chart.

On the graph on the right, ASW stands for "*Aimed strategy vector*" and MSV stands for "*Measured strategy vector*". The difference between aimed and measured strategy vectors is called as strategy gap and includes both strategy deviation and strategy deficiency.

In this example, strategy deviation and strategy deficiency for data set 1 are calculated as follows:

Strategy deficiency: 1.4115

Strategy deviation: -36.2958

For the second data set following graphics are obtained:

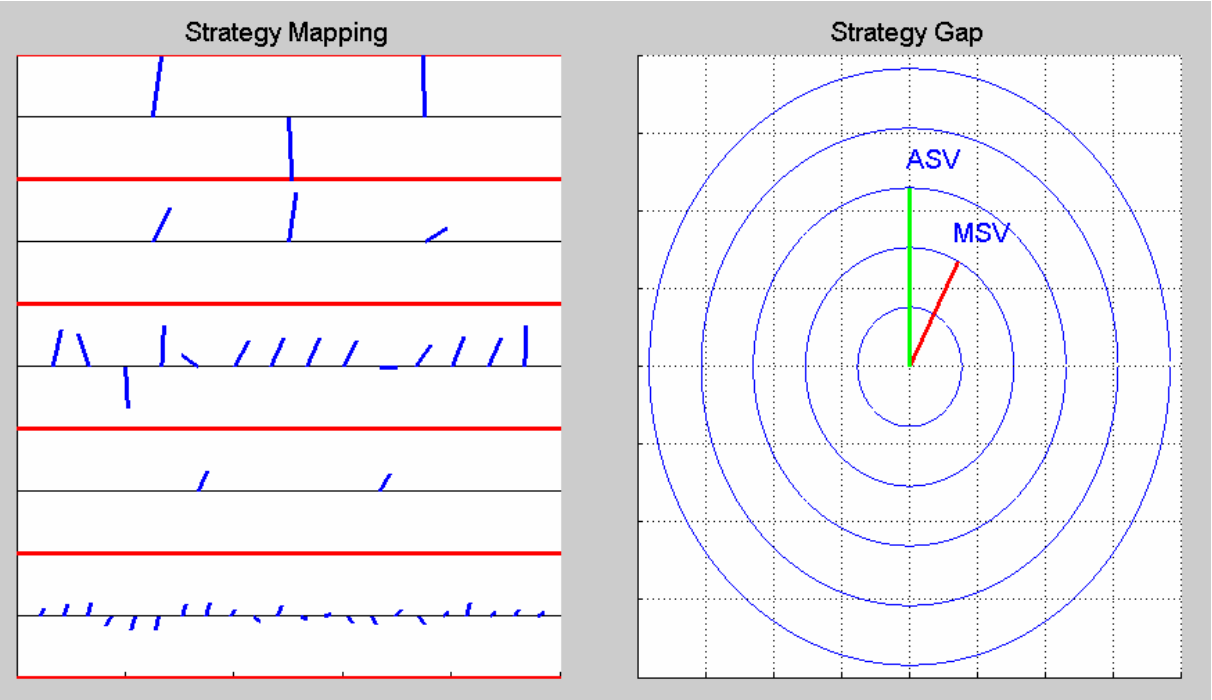


Figure 82 Strategy Mapping and Strategy Gap for Data Set 2

For the same example *strategy deviation* and *strategy deficiency* for data set 2 is calculated as follows:

Strategy deficiency: 1.0033

Strategy deviation: -27.896

5.6 Reliability and Validity Analysis

Reliability and validity tests are performed on the data collected for the pilot study. Sample size was 44. The quality of a qualitative research is dependent to the concept of truth and the question of whether truth is universal or local and determinable (Moret et al., 2007). According to many authors (Glesne and Peshkin, 1992, p. 8; Patton, 2002), criteria used for quantitative research are also applicable in qualitative research, which is to say that validity and reliability are meaningful concepts in qualitative research as well.

Qualitative research and quantitative research do not exclude each other. It is more useful to view both as different but related approaches, which in practice may involve using several different methods for data collection and analyses, some qualitative, some quantitative.

Although reliability and validity are treated separately in quantitative studies, Golafshani (2003) claims that these terms are not viewed separately in qualitative research. Instead, terminology that encompasses both, such as credibility, transferability, and trustworthiness is used (Golafshani, 2003). In this study the term "reliability and validity analysis" is used both for quantitative and qualitative analysis but the differences related to the particular procedures and tests are considered. Quantitative and qualitative reliability and validity analysis are explained separately in the following sections.

5.6.1 Quantitative Reliability and Validity Analysis

As stated above, the questionnaire developed for this study is composed of five sections and four instruments. First section includes demographic information and each of the following four sections includes an instrument to measure four different constructs:

1. Horizontal (Y) component of the strategy vector direction
2. Vertical (X) component of the strategy vector direction
3. (Raw) Strategy magnitude
4. (Raw) Power difference

All quantitative reliability and validity tests are performed on all four instruments separately and twice.

5.6.1.1 Test-Retest Reliability

First test is the "test-retest reliability" and is estimated by performing the same survey with the same respondents at different moments of time. For this study the time difference was 2-4 weeks. The correlation coefficient between two data sets of responses is used as a quantitative measure of the test-retest reliability. Data sets obtained are listed below.

Table 23 Data Sets for Four Instruments

DATA SET 1				DATA SET 2			
Str.Dir.Y	Str.Dir.X	Raw Str.Mag.	Raw Pow.Dif.	Str.Dir.Y	Str.Dir.X	Raw Str.Mag.	Raw Pow.Dif.
1,67	-2,59	4,78	6,00	2,93	1,52	7,00	7,67
1,37	1,44	6,33	5,22	1,37	1,44	6,33	5,22
1,48	-1,00	6,22	5,00	1,22	-0,96	6,33	4,67
-0,81	0,30	6,78	6,00	-1,11	0,15	6,67	6,11
3,56	3,37	1,00	8,00	3,70	3,70	1,00	8,78
1,96	2,15	3,89	6,11	1,85	2,19	3,22	8,00
3,04	2,07	4,44	6,44	2,89	2,15	4,78	6,56
1,00	1,26	3,89	8	1,19	2,00	3,89	8,11
-0,78	-1,04	3,44	6,89	-0,70	-0,93	3,67	6,44
3,11	2,59	6,89	6,89	3,67	1,26	7,78	8,22
-2,07	-1,41	5,22	4,89	-2,07	-1,33	5,44	4,56
2,15	1,89	7,11	5,74	1,00	0,33	7,22	6,11
0,22	1,22	4,44	5,56	0,70	2,56	4,00	4,44
3,85	0,15	6,44	8,11	3,85	0,44	7,22	7,22
0,33	-1,00	1,89	7,22	0,33	-1,07	3,22	7,56
-3,59	0,37	7,56	7,11	-3,56	0,41	7,33	7,44
-1,26	-0,74	5,44	6,44	-1,67	-0,81	3,78	7,22
1,30	2,33	4,89	6,78	2,81	1,93	4,11	5,44
0,85	-0,44	5,44	4,67	0,81	-0,07	4,89	5,33
1,56	0,85	4,00	7,11	1,74	1,11	4,44	6,78
2,59	1,22	4,44	7,56	2,56	1,22	5,00	7,56
2,04	1,70	4,78	5,00	0,11	-0,04	4,56	4,89
3,48	3,56	4,11	5,56	3,70	3,56	4,11	5,89
3,07	2,48	6,33	6,67	2,78	2,11	6,44	6,56
3,33	2,33	6,33	7,22	3,19	2,52	6,44	6,89
-1,48	0,33	3,89	7,44	-1,19	0,22	3,89	6,67
1,93	0,41	3,22	7,22	1,89	0,33	3,78	6,67
3,89	-1,93	1,00	8,00	3,00	-2,00	1,00	8,00
2,37	-1,52	1,44	8,11	2,48	-1,81	2,22	7,89
2,04	1,93	8,56	7,44	2,07	1,04	8,11	7,67
3,15	3,00	8,22	7,44	3,15	3,00	8,22	7,44
3,04	3,59	8,11	8,78	3,59	3,59	8,11	8,78
2,19	1,44	5,78	6,78	2,22	1,85	5,56	7,00
-2,11	1,59	6,56	7,00	-1,96	1,22	6,78	6,00
3,22	-0,04	5,56	6,78	3,22	-0,11	6,56	7,22
1,07	0,44	5,11	7,33	0,74	0,22	4,78	7,11
2,00	1,22	6,78	7,00	1,74	3,07	6,33	6,33
2,00	1,22	6,78	7,56	1,04	0,67	6,78	7,00
-0,04	0,48	2,11	6,44	-0,11	-0,04	2,44	6,44
3,93	2,22	5,56	7,89	3,93	2,00	5,00	8,44
2,85	0,56	4,11	7,33	2,96	0,78	6,11	7,00
2,74	3,37	7,56	8,67	2,96	3,26	7,67	8,67
3,81	3,78	7,11	6,56	3,74	3,78	7,00	6,11
3,41	2,19	5,22	8,22	3,33	2,33	5,56	8,22

Table 24 Descriptive Statistics of Strategy Direction Y Component for two Data Sets

	Mean	Std. Deviation	N
StrDirY_1	1,6695	1,83366	44
StrDirY_2	1,6384	1,87334	44

Table 25 Correlation Between Strategy Direction Y Components for two Data Sets

		StrDirY_1	StrDirY_2
StrDirY_1	Pearson Correlation	1	,958**
	Sig. (2-tailed)		,000
	N	44	44
StrDirY_2	Pearson Correlation	,958**	1
	Sig. (2-tailed)	,000	
	N	44	44

**. Correlation is significant at the 0.01 level

Table 26 Descriptive Statistics of Strategy Direction Y Component for two Data Sets

	Mean	Std. Deviation	N
StrDirX_1	1,0759	1,58426	44
StrDirX_2	1,1089	1,53648	44

Table 27 Correlation Between Strategy Direction Y Components for two Data Sets

		StrDirX_1	StrDirX_2
StrDirX_1	Pearson Correlation	1	,845**
	Sig. (2-tailed)		,000
	N	44	44
StrDirX_2	Pearson Correlation	,845**	1
	Sig. (2-tailed)	,000	
	N	44	44

**. Correlation is significant at the 0.01 level

Table 28 Descriptive Statistics of Strategy Direction Y Component for Two Data Sets

	Mean	Std. Deviation	N
StrMag_1	5,1991	1,89689	44
StrMag_2	5,3357	1,86144	44

Table 29 Correlation Between Strategy Direction Y Components for Two Data Sets

		StrMag_1	StrMag_2
StrMag_1	Pearson Correlation	1	,936**
	Sig. (2-tailed)		,000
	N	44	44
StrMag_2	Pearson Correlation	,936**	1
	Sig. (2-tailed)	,000	
	N	44	44

**. Correlation is significant at the 0.01 level

Table 30 Descriptive statistics of Strategy Direction Y component for two data sets

	Mean	Std. Deviation	N
StrPow_1	6,8677	1,02884	44
StrPow_2	6,8711	1,14798	44

Table 31 Correlation Between Strategy Direction Y Components for Two Data Sets

		StrPow_1	StrPow_2
StrPow_1	Pearson Correlation	1	,824**
	Sig. (2-tailed)		,000
	N	44	44
StrPow_2	Pearson Correlation	,824**	1
	Sig. (2-tailed)	,000	
	N	44	44

**. Correlation is significant at the 0.01 level

The correlation values for four constructs are 0.958, 0.845, 0.936 and 0.824 respectively and all are significant at the 0.01 level.

5.6.1.2 Split-Half Reliability

Second test is the Split-Half Reliability test and is basically a measure of consistency where each of the four instruments are split in two and the scores for each half of the instruments is compared with that of other. The results are shown below:

Table 32 Split-Half Reliability Statistics for Strategy Direction Y Component -Data Set 1

Cronbach's Alpha	Part 1	Value	,956
		N of Items	14[a]
	Part 2	Value	,959
		N of Items	13[b]
	Total N of Items		27
Correlation Between Forms			,855
Spearman-Brown Coefficient	Equal Length		,922
	Unequal Length		,922
Guttman Split-Half Coefficient			,922

a. The items are: Str.Dir.Y1, Str.Dir.Y2, Str.Dir.Y3, Str.Dir.Y4, Str. Dir.Y5, Str.Dir.Y6, Str.Dir.Y7, Str.Dir.Y8, Str.Dir.Y9, Str.Dir.Y10, Str.Dir.Y11, Str.Dir.Y12, Str.Dir.Y13, Str.Dir.Y14.

b. The items are: Str.Dir.Y15, Str.Dir.Y16, Str.Dir.Y17, Str.Dir.Y18, Str.Dir.Y19, Str.Dir.Y20, Str.Dir.Y21, Str.Dir.Y22, Str.Dir.Y23, Str.Dir.Y24, Str.Dir.Y25, Str.Dir.Y26, Str.Dir.Y27.

Table 33 Split-Half Reliability Statistics for Strategy Direction Y Component -Data Set 2

Cronbach's Alpha	Part 1	Value	,963
		N of Items	14[a]
	Part 2	Value	,967
		N of Items	13[b]
	Total N of Items		27
Correlation Between Forms			,876
Spearman-Brown Coefficient	Equal Length		,934
	Unequal Length		,934
Guttman Split-Half Coefficient			,934

a. The items are: Str.Dir.Y1, Str.Dir.Y2, Str.Dir.Y3, Str.Dir.Y4, Str. Dir.Y5, Str.Dir.Y6, Str.Dir.Y7, Str.Dir.Y8, Str.Dir.Y9, Str.Dir.Y10, Str.Dir.Y11, Str.Dir.Y12, Str.Dir.Y13, Str.Dir.Y14.

b. The items are: Str.Dir.Y14, Str.Dir.Y15, Str.Dir.Y16, Str.Dir.Y17, Str.Dir.Y18, Str.Dir.Y19, Str.Dir.Y20, Str.Dir.Y21, Str.Dir.Y22, Str. Dir.Y23, Str.Dir.Y24, Str.Dir.Y25, Str.Dir.Y26, Str.Dir.Y27.

Table 34 Split-Half Reliability Statistics for Strategy Direction X Component -Data Set 1

Cronbach's Alpha	Part 1	Value	,910
		N of Items	14[a]
	Part 2	Value	,945
		N of Items	13[b]
	Total N of Items		27
Correlation Between Forms			,841
Spearman-Brown Coefficient	Equal Length		,914
	Unequal Length		,914
Guttman Split-Half Coefficient			,910

a. The items are: Str.Dir.X1, Str.Dir.X2, Str.Dir.X3, Str.Dir.X4, Str. Dir.X5, Str.Dir.X6, Str.Dir.X7, Str.Dir.X8, Str.Dir.X9, Str.Dir.X10, Str.Dir.X11, Str.Dir.X12, Str.Dir.X13, Str.Dir.X14.

b. The items are: Str.Dir.X15, Str.Dir.X16, Str.Dir.X17, Str.Dir.X18, Str.Dir.X19, Str.Dir.X20, Str.Dir.X21, Str.Dir.X22, Str.Dir.X23, Str. Dir.X24, Str.Dir.X25, Str.Dir.X26, Str.Dir.X27.

Table 35 Split-Half Reliability Statistics for Strategy Direction X Component -Data Set 2

Cronbach's Alpha	Part 1	Value	,937
		N of Items	14[a]
	Part 2	Value	,953
		N of Items	13[b]
	Total N of Items		27
Correlation Between Forms			,813
Spearman-Brown Coefficient	Equal Length		,897
	Unequal Length		,897
Guttman Split-Half Coefficient			,896

a. The items are: Str.Dir.X1, Str.Dir.X2, Str.Dir.X3, Str.Dir.X4, Str. Dir.X5, Str.Dir.X6, Str.Dir.X7, Str.Dir.X8, Str.Dir.X9, Str.Dir.X10, Str.Dir.X11, Str.Dir.X12, Str.Dir.X13, Str.Dir.X14.

b. The items are: Str.Dir.X14, Str.Dir.X15, Str.Dir.X16, Str.Dir.X17, Str.Dir.X18, Str.Dir.X19, Str.Dir.X20, Str.Dir.X21, Str.Dir.X22, Str. Dir.X23, Str.Dir.X24, Str.Dir.X25, Str.Dir.X26, Str.Dir.X27.

Table 36 Split-Half Reliability Statistics for Strategy Magnitude Component -Data Set 1

Cronbach's Alpha	Part 1	Value	,915
		N of Items	5[a]
	Part 2	Value	,779
		N of Items	4[b]
	Total N of Items		9
Correlation Between Forms			,682
Spearman-Brown Coefficient	Equal Length		,811
	Unequal Length		,812
Guttman Split-Half Coefficient			,775

a. The items are: Str.Mag.1, Str.Mag.2, Str.Mag.3, Str.Mag.4, Str. Mag.5.

b. The items are: Str.Mag.5, Str.Mag.6, Str.Mag.7, Str.Mag.8, Str. Mag.9.

Table 37 Split-Half Reliability Statistics for Strategy Magnitude Component -Data Set 2

Cronbach's Alpha	Part 1	Value	,913
		N of Items	5[a]
	Part 2	Value	,838
		N of Items	4[b]
	Total N of Items		9
Correlation Between Forms			,658
Spearman-Brown Coefficient	Equal Length		,794
	Unequal Length		,796
Guttman Split-Half Coefficient			,768

a. The items are: Str.Mag.1, Str.Mag.2, Str.Mag.3, Str.Mag.4, Str. Mag.5.

b. The items are: Str.Mag.6, Str.Mag.7, Str.Mag.8, Str.Mag.9.

Table 38 Split-Half Reliability Statistics for Power Difference Component -Data Set 1

Cronbach's Alpha	Part 1	Value	,654
		N of Items	5[a]
	Part 2	Value	,653
		N of Items	4[b]
	Total N of Items		9
Correlation Between Forms			,510
Spearman-Brown Coefficient	Equal Length		,675
	Unequal Length		,677
Guttman Split-Half Coefficient			,666

a. The items are: Pow.Dif.1, Pow.Dif.2, Pow.Dif.3, Pow.Dif.4, Pow. Dif.5.

b. The items are: Pow.Dif.6, Pow.Dif.7, Pow.Dif.8, Pow.Dif.9.

Table 39 Split-Half Reliability Statistics for Power Difference Component -Data Set 2

Cronbach's Alpha	Part 1	Value	,757
		N of Items	5[a]
	Part 2	Value	,738
		N of Items	4[b]
	Total N of Items		9
Correlation Between Forms			,732
Spearman-Brown Coefficient	Equal Length		,845
	Unequal Length		,847
Guttman Split-Half Coefficient			,824

a. The items are: Pow.Dif.1, Pow.Dif.2, Pow.Dif.3, Pow.Dif.4, Pow. Dif.5.

b. The items are: Pow.Dif.5, Pow.Dif.6, Pow.Dif.7, Pow.Dif.8, Pow. Dif.9.

5.6.1.3 Internal Consistency

Third test is the internal consistency which is basically the estimation based on the correlation among the variables comprising the set and is expressed with Cronbach's alpha values which are based on average correlation among items. Cronbach's alpha values for two data sets and four instruments are summarized below:

Table 40 Internal Consistency of Instruments

Instrument	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Str.Dir.Y Comp. (Data Set 1)	0,975	0,976
Str.Dir.X Comp. (Data Set 1)	0,959	0,959
Strategy Magnitude (Data Set 1)	0,914	0,914
Power Difference (Data Set 1)	0,757	0,768
Str.Dir.Y Comp. (Data Set 2)	0,979	0,980
Str.Dir.X Comp. (Data Set 2)	0,967	0,967
Strategy Magnitude (Data Set 2)	0,908	0,908
Power Difference (Data Set 2)	0,852	0,857

5.6.1.4 Explarotary Factor Analysis

Fourth test is the explarotary factor analysis of all four instruments for two data sets and in this study, Principal Component Analysis is performed. KaiserMeyer Olkin (KMO) and Bartlett's Test of Sphericity Values were utilized. The results are analyzed in this section.

Following table suggests how KMO statistics might be interpreted (Kaiser, 1974).

Table 41 Interpretation of the KMO Statistics

KMO statistic Interpretation
in the .90's marvellous
in the .80's meritorious
in the .70's middling
in the .60's mediocre
in the .50's miserable
below .50 unacceptable

Bartlett's test is used to test if k samples have equal variances (Snedecor and Cochran, 1983) and is sensitive to departures from normality (Bartlett, 1937).

Kaiser Meyer Olkin (KMO) measure, Bartlett's Test of Sphericity Values and Rotated Component Matrixes are provided below.

Table 42 KMO and Bartlett's Test of Strategy Direction Y component -data set 1

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,860
Bartlett's Test of Sphericity	Approx. Chi-Square	1391,016
	df	351
	Sig.	,000

Table 43 Total Variance Explained for Strategy Direction Y component -data set 1

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	16,754	62,050	62,050	16,754	62,050	62,050	7,946	29,430	29,430
2	2,085	7,723	69,773	2,085	7,723	69,773	4,989	18,476	47,907
3	1,448	5,362	75,135	1,448	5,362	75,135	4,723	17,493	65,400
4	1,092	4,043	79,178	1,092	4,043	79,178	3,720	13,778	79,178
5	,861	3,190	82,368						
6	,739	2,736	85,104						
7	,635	2,353	87,457						
8	,601	2,225	89,682						
9	,486	1,802	91,484						
10	,384	1,421	92,904						
11	,291	1,078	93,983						
12	,252	,935	94,917						
13	,201	,744	95,662						
14	,182	,674	96,336						
15	,163	,604	96,940						
16	,149	,552	97,492						
17	,127	,470	97,962						
18	,115	,425	98,387						
19	,092	,342	98,730						
20	,076	,280	99,009						
21	,072	,268	99,277						
22	,064	,237	99,514						
23	,049	,181	99,696						
24	,027	,098	99,794						
25	,022	,083	99,877						
26	,019	,069	99,946						
27	,015	,054	100,000						

Extraction Method: Principal Component Analysis.

Table 44 Rotated Component Matrix of Strategy Direction Y Component -Data Set 1

.

	Component			
	1	2	3	4
Str.Dir.Y23	,835	,313	,154	,200
Str.Dir.Y24	,829	,223	,211	,234
Str.Dir.Y19	,777	,240	,127	,427
Str.Dir.Y18	,751	,164	,234	,414
Str.Dir.Y27	,750	,276	,253	,156
Str.Dir.Y17	,720	,444	,348	,124
Str.Dir.Y16	,709	,168	,449	,207
Str.Dir.Y26	,694	,219	,394	,316
Str.Dir.Y20	,688	,115	,278	,513
Str.Dir.Y25	,669	,172	,531	-,010
Str.Dir.Y5	,645	,453	,446	,055
Str.Dir.Y11	,169	,824	,203	,313
Str.Dir.Y22	,448	,802	,020	,038
Str.Dir.Y7	,168	,768	,389	,133
Str.Dir.Y4	,507	,664	,057	,189
Str.Dir.Y14	,266	,630	,468	,353
Str.Dir.Y3	,102	,612	,483	,258
Str.Dir.Y9	,294	,509	,505	,439
Str.Dir.Y21	,339	,086	,712	,189
Str.Dir.Y6	,401	,355	,693	,276
Str.Dir.Y13	,453	,320	,679	,365
Str.Dir.Y8	,165	,443	,670	,387
Str.Dir.Y12	,435	,319	,616	,335
Str.Dir.Y10	,110	,320	,207	,793
Str.Dir.Y1	,503	,073	,381	,654
Str.Dir.Y15	,387	,341	,226	,638
Str.Dir.Y2	,446	,142	,253	,563

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 11 iterations.

Table 45 KMO and Bartlett's Test of Strategy Direction Y Component -Data Set 2

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,873
Bartlett's Test of Sphericity	Approx. Chi-Square	1492,287
	df	351
	Sig.	,000

Table 46 Total Variance Explained for Strategy Direction Y component -data set 2

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	17,908	66,325	66,325	17,908	66,325	66,325	8,040	29,778	29,778
2	2,015	7,465	73,790	2,015	7,465	73,790	5,256	19,467	49,244
3	1,223	4,529	78,319	1,223	4,529	78,319	4,510	16,703	65,947
4	1,123	4,160	82,480	1,123	4,160	82,480	4,464	16,532	82,480
5	,695	2,573	85,053						
6	,602	2,231	87,284						
7	,560	2,075	89,359						
8	,406	1,505	90,864						
9	,363	1,346	92,210						
10	,313	1,159	93,369						
11	,263	,973	94,342						
12	,247	,916	95,258						
13	,205	,759	96,018						
14	,186	,690	96,708						
15	,159	,589	97,296						
16	,125	,464	97,761						
17	,113	,419	98,180						
18	,097	,360	98,539						
19	,082	,306	98,845						
20	,079	,291	99,136						
21	,061	,227	99,364						
22	,047	,176	99,539						
23	,042	,155	99,695						
24	,032	,117	99,812						
25	,022	,082	99,893						
26	,020	,073	99,967						
27	,009	,033	100,000						

Extraction Method: Principal Component Analysis.

Table 47 Rotated Component Matrix of Strategy Direction Y Component -Data Set 2

	Component			
	1	2	3	4
Str.Dir.Y27	,834	,317	,043	,115
Str.Dir.Y24	,792	,230	,299	,182
Str.Dir.Y26	,735	,177	,155	,395
Str.Dir.Y19	,734	,178	,299	,406
Str.Dir.Y23	,731	,366	,279	,303
Str.Dir.Y18	,722	,277	,338	,356
Str.Dir.Y20	,709	,242	,253	,482
Str.Dir.Y25	,689	,224	,318	,025
Str.Dir.Y15	,688	,121	,315	,488
Str.Dir.Y16	,637	,201	,487	,429
Str.Dir.Y22	,392	,835	,205	,067
Str.Dir.Y11	,165	,824	,250	,315
Str.Dir.Y7	,060	,807	,333	,304
Str.Dir.Y4	,364	,743	,055	,247
Str.Dir.Y5	,408	,593	,463	,347
Str.Dir.Y17	,569	,574	,287	,317
Str.Dir.Y3	,140	,328	,796	,239
Str.Dir.Y21	,457	,139	,775	,265
Str.Dir.Y13	,576	,255	,662	,309
Str.Dir.Y14	,469	,465	,628	,079
Str.Dir.Y12	,552	,301	,617	,276
Str.Dir.Y10	,296	,414	,070	,753
Str.Dir.Y8	,223	,347	,350	,714
Str.Dir.Y1	,565	,172	,255	,671
Str.Dir.Y2	,399	,296	,336	,606
Str.Dir.Y6	,209	,499	,497	,539
Str.Dir.Y9	,418	,496	,309	,505

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

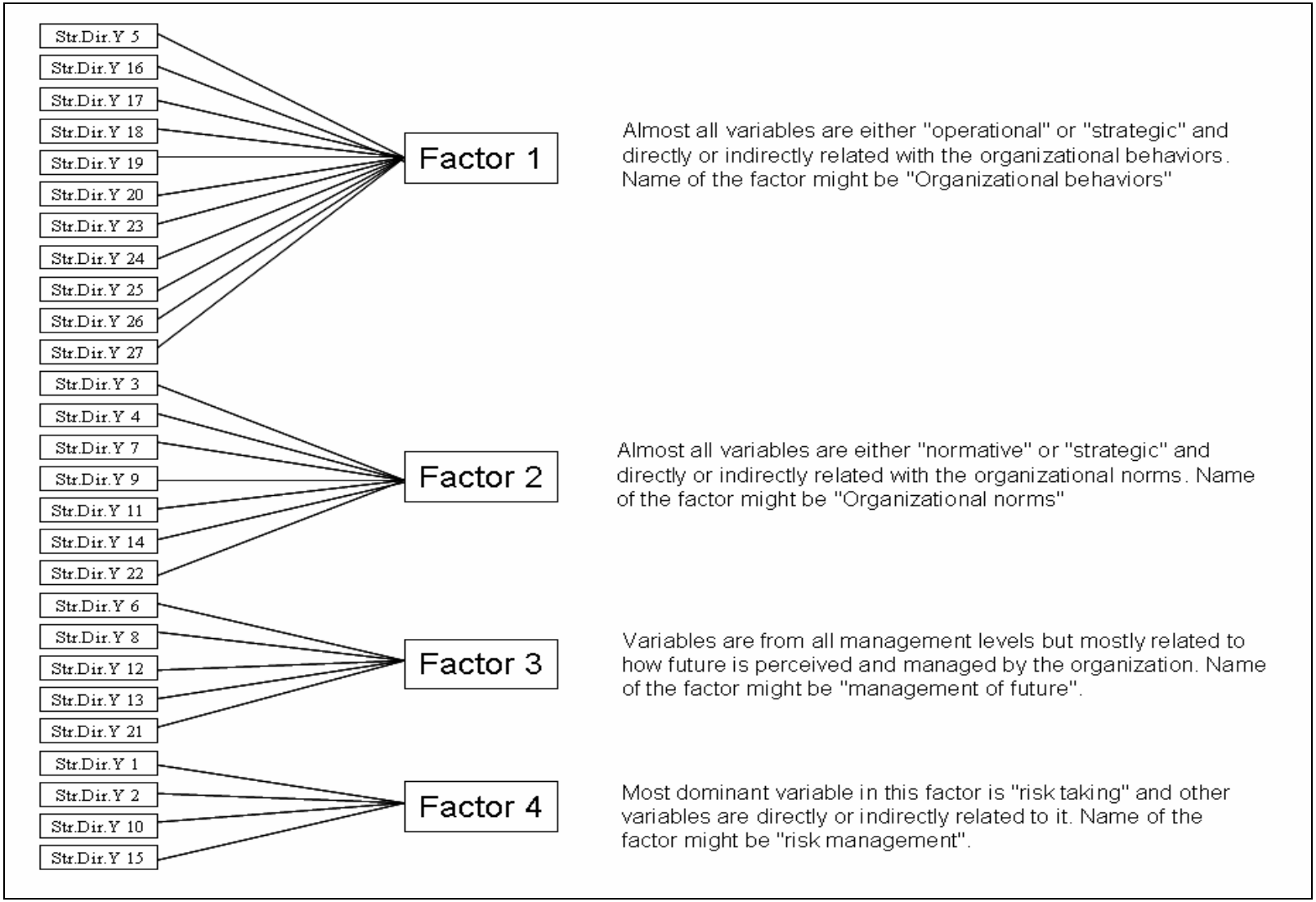


Figure 83 Principal Component Analysis of Str.Dir.Y

Table 48 KMO and Bartlett's Test of Strategy Direction X component -data set 1

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,801
Bartlett's Test of Sphericity	Approx. Chi-Square	1200,681
	df	351
	Sig.	,000

Table 49 Total Variance Explained for Strategy Direction X component -data set 1

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13,348	49,438	49,438	13,348	49,438	49,438	7,429	27,514	27,514
2	3,133	11,605	61,044	3,133	11,605	61,044	3,861	14,299	41,813
3	1,924	7,124	68,168	1,924	7,124	68,168	3,772	13,969	55,782
4	1,641	6,079	74,247	1,641	6,079	74,247	3,397	12,583	68,365
5	1,232	4,562	78,808	1,232	4,562	78,808	2,820	10,444	78,808
6	,935	3,462	82,271						
7	,779	2,885	85,156						
8	,536	1,984	87,140						
9	,514	1,902	89,042						
10	,437	1,619	90,661						
11	,380	1,408	92,070						
12	,340	1,258	93,328						
13	,291	1,077	94,405						
14	,262	,969	95,374						
15	,237	,879	96,253						
16	,222	,822	97,075						
17	,157	,581	97,656						
18	,125	,463	98,119						
19	,116	,431	98,549						
20	,101	,374	98,924						
21	,074	,272	99,196						
22	,058	,215	99,411						
23	,049	,182	99,593						
24	,034	,126	99,719						
25	,030	,110	99,829						
26	,026	,095	99,924						
27	,020	,076	100,000						

Extraction Method: Principal Component Analysis.

Table 50 Rotated Component Matrix of Strategy Direction X component -data set 1

Rotated Component Matrix [a]

	Component				
	1	2	3	4	5
Str.Dir.X18	,839	,068	,118	,134	,132
Str.Dir.X26	,811	,142	,161	-,124	,359
Str.Dir.X23	,803	,044	,296	,179	,186
Str.Dir.X20	,784	,200	,265	,167	,058
Str.Dir.X16	,746	,142	,387	,380	,030
Str.Dir.X25	,724	,114	,452	,333	-,011
Str.Dir.X24	,716	,398	,001	,236	,110
Str.Dir.X27	,693	,356	,062	,068	,268
Str.Dir.X9	,691	,149	,409	,060	,302
Str.Dir.X13	,611	,475	,298	,401	-,092
Str.Dir.X17	,541	,137	,375	,047	,427
Str.Dir.X10	,128	,894	,198	,171	-,047
Str.Dir.X15	,169	,850	,186	,243	,061
Str.Dir.X12	,445	,590	-,028	,535	,080
Str.Dir.X19	,482	,567	-,122	,241	,270
Str.Dir.X7	,105	-,049	,752	,096	,381
Str.Dir.X6	,222	,165	,738	,243	,010
Str.Dir.X22	,416	,114	,722	-,025	,181
Str.Dir.X11	,282	,325	,619	-,185	,447
Str.Dir.X14	,240	,542	,618	,088	,112
Str.Dir.X2	,211	,051	,060	,853	,301
Str.Dir.X1	,095	,376	,081	,821	,052
Str.Dir.X3	,115	,528	,132	,647	,304
Str.Dir.X21	,544	,339	,205	,580	-,002
Str.Dir.X4	,085	,169	,126	,207	,866
Str.Dir.X5	,348	-,053	,332	,241	,693
Str.Dir.X8	,505	-,083	,369	,138	,614

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 9 iterations.

Table 51 KMO and Bartlett's Test of Strategy Direction X component -data set 2

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,805
Bartlett's Test of Sphericity	Approx. Chi-Square	1291,211
	df	351
	Sig.	,000

Table 52 Total Variance Explained for Strategy Direction X component -data set 2

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14,834	54,942	54,942	14,834	54,942	54,942	9,512	35,230	35,230
2	2,904	10,755	65,697	2,904	10,755	65,697	3,996	14,800	50,030
3	1,742	6,451	72,148	1,742	6,451	72,148	3,893	14,420	64,450
4	1,111	4,113	76,261	1,111	4,113	76,261	3,189	11,811	76,261
5	,929	3,441	79,702						
6	,805	2,981	82,682						
7	,737	2,730	85,412						
8	,536	1,986	87,398						
9	,502	1,858	89,256						
10	,414	1,534	90,789						
11	,399	1,479	92,268						
12	,354	1,311	93,579						
13	,303	1,123	94,702						
14	,276	1,021	95,724						
15	,224	,831	96,554						
16	,175	,647	97,201						
17	,148	,549	97,751						
18	,128	,475	98,226						
19	,111	,411	98,637						
20	,101	,376	99,013						
21	,087	,322	99,335						
22	,058	,216	99,551						
23	,039	,143	99,694						
24	,034	,128	99,822						
25	,023	,084	99,906						
26	,014	,053	99,959						
27	,011	,041	100,000						

Extraction Method: Principal Component Analysis.

Table 53 Rotated Component Matrix of Strategy Direction X component -data set 2

	Component			
	1	2	3	4
Str.Dir.X20	,858	,136	,109	,226
Str.Dir.X9	,806	,207	,297	,062
Str.Dir.X23	,804	,120	,029	,283
Str.Dir.X26	,803	,065	,225	,234
Str.Dir.X16	,790	,117	,167	,320
Str.Dir.X17	,740	,312	,312	,320
Str.Dir.X27	,722	,145	,218	,199
Str.Dir.X13	,713	-,183	,492	,305
Str.Dir.X22	,708	,432	,009	-,072
Str.Dir.X24	,703	-,218	,241	,373
Str.Dir.X25	,701	,042	,404	,131
Str.Dir.X6	,680	,585	,150	-,025
Str.Dir.X18	,678	-,004	,324	,329
Str.Dir.X7	,619	,564	,087	,245
Str.Dir.X11	,618	,456	,055	,236
Str.Dir.X14	,617	,406	,288	,121
Str.Dir.X5	,017	,827	,235	,107
Str.Dir.X8	,145	,748	,231	,196
Str.Dir.X4	,043	,729	,370	,253
Str.Dir.X3	,219	,392	,805	,056
Str.Dir.X1	,226	,324	,797	,230
Str.Dir.X2	,330	,354	,771	,196
Str.Dir.X21	,368	,155	,651	,443
Str.Dir.X12	,461	,288	,217	,709
Str.Dir.X10	,087	,318	,488	,692
Str.Dir.X15	,479	,162	,181	,684
Str.Dir.X19	,515	,295	,143	,638

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 14 iterations.

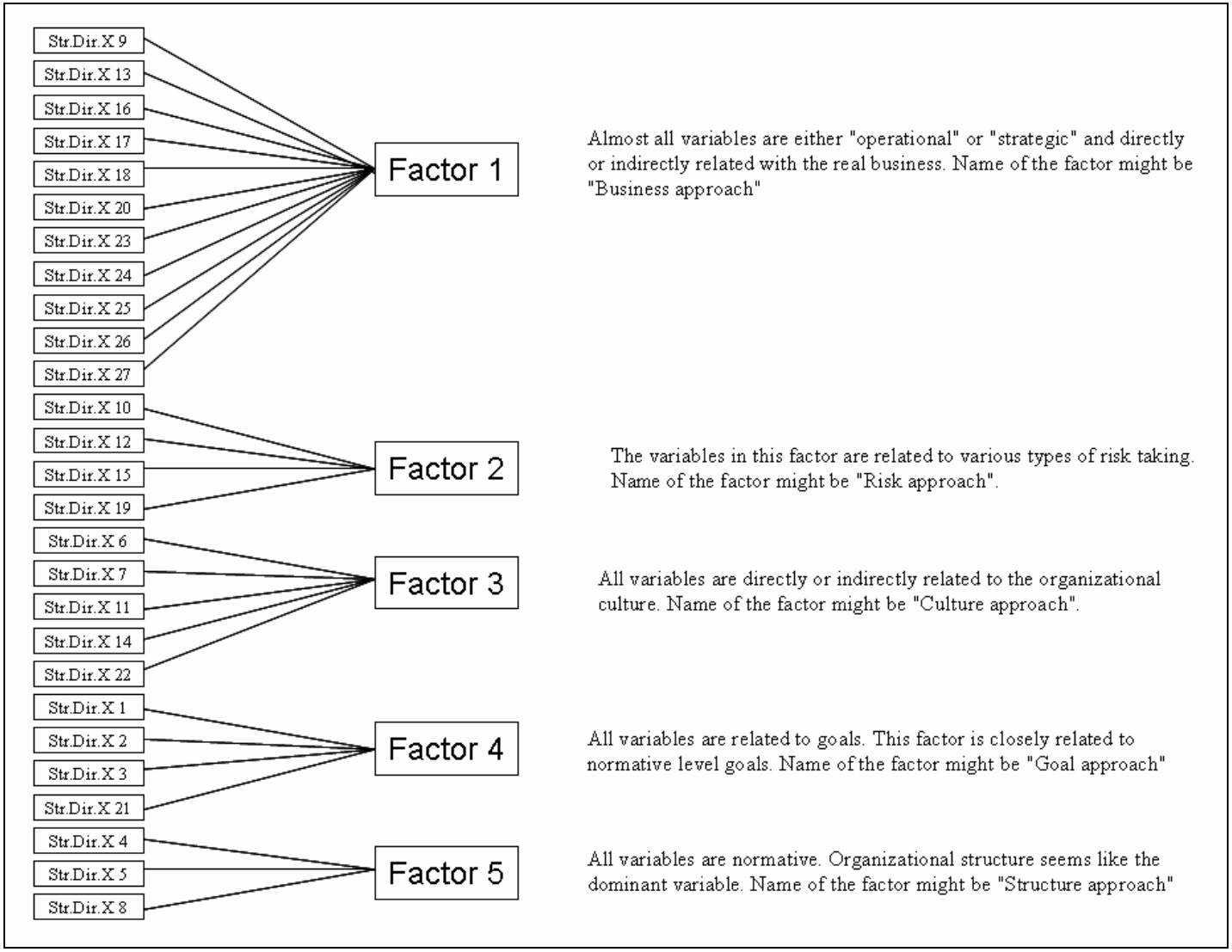


Figure 84 Principal Component Analysis of Str.Dir.X

Table 54 KMO and Bartlett's Test of Strategy Magnitude -data set 1

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,822
Bartlett's Test of Sphericity	Approx. Chi-Square	339,007
	df	36
	Sig.	,000

Table 55 Total Variance Explained for Strategy Magnitude component -data set 1

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,425	60,275	60,275	5,425	60,275	60,275	3,892	43,247	43,247
2	1,564	17,373	77,648	1,564	17,373	77,648	3,096	34,402	77,648
3	,724	8,046	85,694						
4	,447	4,966	90,660						
5	,280	3,109	93,769						
6	,219	2,431	96,199						
7	,196	2,177	98,376						
8	,080	,890	99,266						
9	,066	,734	100,000						

Extraction Method: Principal Component Analysis.

Table 56 Rotated Component Matrix of Strategy Magnitude -data set 1

	Component	
	1	2
Str.Mag.4	,919	,154
Str.Mag.1	,900	,132
Str.Mag.3	,892	,294
Str.Mag.2	,849	,281
Str.Mag.6	,019	,854
Str.Mag.8	,117	,780
Str.Mag.5	,416	,745
Str.Mag.9	,417	,738
Str.Mag.7	,600	,672

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table 57 KMO and Bartlett's Test of Strategy Magnitude -data set 2

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,816
Bartlett's Test of Sphericity	Approx. Chi-Square	321,470
	df	36
	Sig.	,000

Table 58 Total Variance Explained for Strategy Magnitude component -data set 2

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5,365	59,606	59,606	5,365	59,606	59,606	4,284	47,596	47,596
2	1,457	16,191	75,797	1,457	16,191	75,797	2,538	28,202	75,797
3	,653	7,254	83,051						
4	,513	5,697	88,748						
5	,413	4,589	93,338						
6	,279	3,100	96,437						
7	,172	1,909	98,346						
8	,091	1,012	99,358						
9	,058	,642	100,000						

Extraction Method: Principal Component Analysis.

Table 59 Rotated Component Matrix of Strategy Magnitude -data set 2

.

	Component	
	1	2
Str.Mag.1	,895	,040
Str.Mag.4	,881	,190
Str.Mag.2	,876	,203
Str.Mag.3	,869	,251
Str.Mag.7	,798	,450
Str.Mag.6	-,028	,847
Str.Mag.8	,183	,756
Str.Mag.9	,446	,681
Str.Mag.5	,561	,665

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table 60 KMO and Bartlett's Test of Power Difference -data set 1

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,692
Bartlett's Test of Sphericity	Approx. Chi-Square	105,994
	df	36
	Sig.	,000

Table 61 Total Variance Explained for Power Difference component -data set 1

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,274	36,373	36,373	3,274	36,373	36,373	2,095	23,278	23,278
2	1,313	14,588	50,962	1,313	14,588	50,962	2,094	23,270	46,547
3	1,181	13,124	64,086	1,181	13,124	64,086	1,406	15,622	62,170
4	1,070	11,887	75,974	1,070	11,887	75,974	1,242	13,804	75,974
5	,606	6,732	82,705						
6	,517	5,745	88,450						
7	,436	4,843	93,293						
8	,334	3,709	97,003						
9	,270	2,997	100,000						

Extraction Method: Principal Component Analysis.

Table 62 Rotated Component Matrix of Power Difference -data set 1

.

	Component			
	1	2	3	4
Pow.Dif.2	,822	,105	,005	,105
Pow.Dif.1	,805	-,025	-,035	,220
Pow.Dif.7	,669	,407	,220	-,122
Pow.Dif.5	,141	,885	,041	,083
Pow.Dif.4	-,032	,768	-,108	,481
Pow.Dif.6	,306	,664	,403	-,305
Pow.Dif.9	-,064	-,021	,941	,068
Pow.Dif.8	,400	,307	,523	,333
Pow.Dif.3	,210	,093	,147	,849

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Table 63 KMO and Bartlett's Test of Power Difference -data set 2

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,795
Bartlett's Test of Sphericity	Approx. Chi-Square	194,239
	df	36
	Sig.	,000

Table 64 Total Variance Explained for Power Difference component -data set 2

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4,334	48,161	48,161	4,334	48,161	48,161	2,659	29,542	29,542
2	1,349	14,989	63,150	1,349	14,989	63,150	2,367	26,296	55,838
3	1,113	12,364	75,514	1,113	12,364	75,514	1,771	19,676	75,514
4	,734	8,157	83,671						
5	,542	6,025	89,696						
6	,289	3,212	92,908						
7	,243	2,699	95,606						
8	,220	2,445	98,051						
9	,175	1,949	100,000						

Extraction Method: Principal Component Analysis.

Table 65 Rotated Component Matrix of Power Difference -data set 2

	Component		
	1	2	3
Pow.Dif.4	,890	,056	,055
Pow.Dif.5	,801	,240	,324
Pow.Dif.6	,657	,515	,253
Pow.Dif.3	,611	,172	,101
Pow.Dif.1	-,054	,847	,123
Pow.Dif.2	,409	,815	,068
Pow.Dif.7	,381	,777	,095
Pow.Dif.9	,064	,094	,921
Pow.Dif.8	,317	,135	,844

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

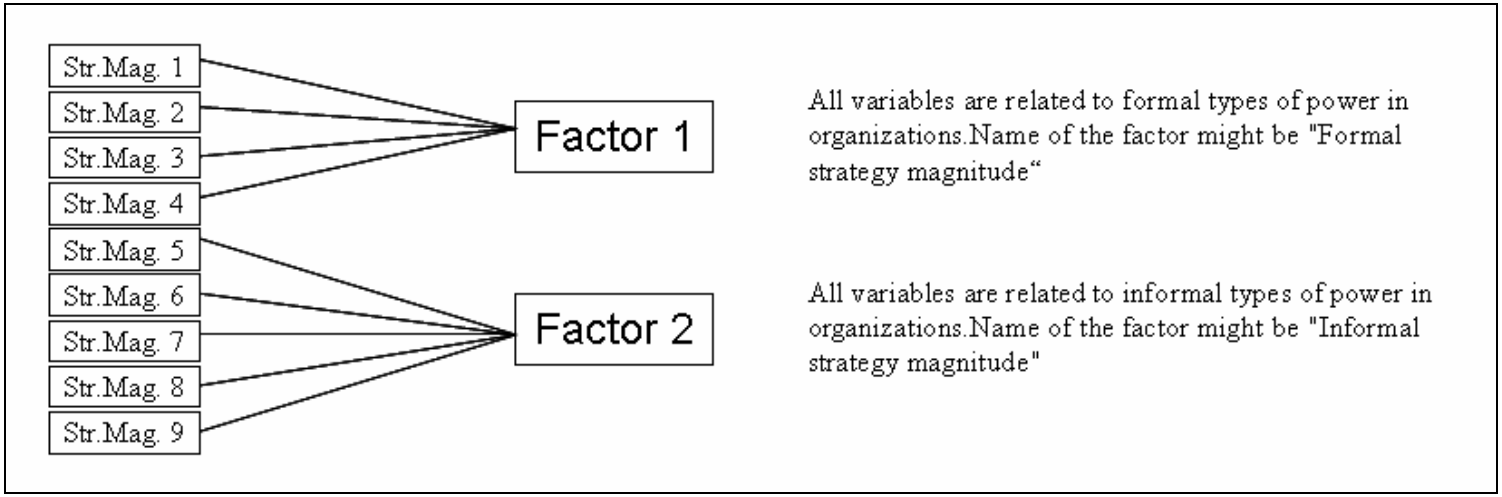


Figure 85 Principal Component Analysis of Str.Dir.Y

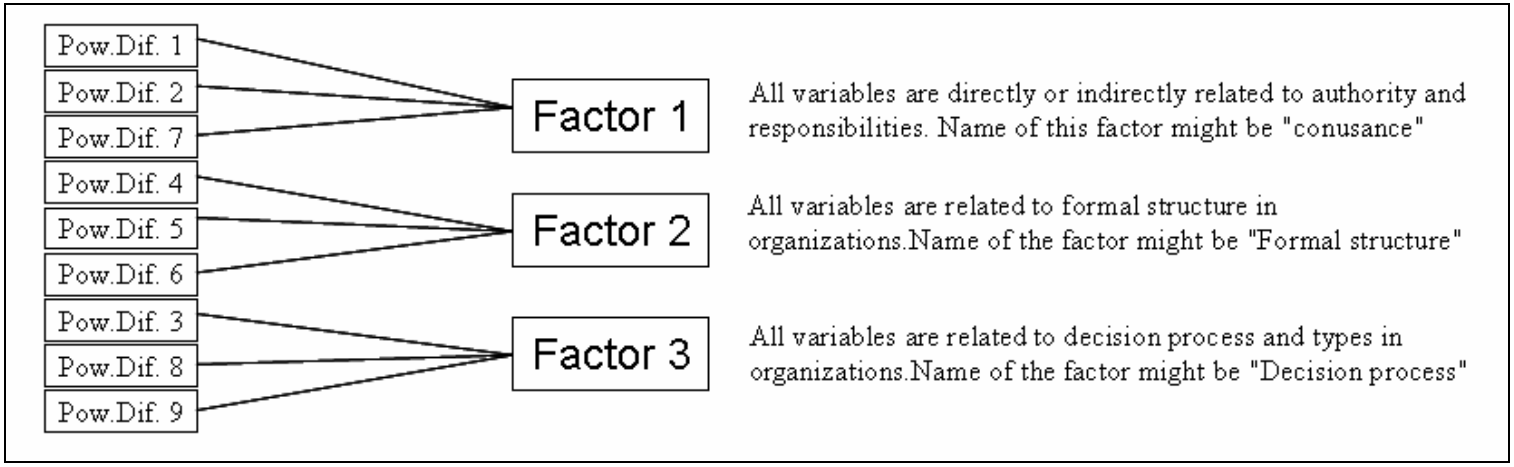


Figure 86 Principal Component Analysis of Str.Dir.Y

5.6.2 Qualitative Reliability and Validity Analysis

Reliability and validity in qualitative research is also known as "credibility" and "trustworthiness" (Olshansky, 2005). Credibility refers to "*ensuring that the theoretical framework generated is understood and is based on the data from the study* (Olshansky, 1995)" and trustworthiness refers to "*extent to which one can believe in the research findings"* (Glaser and Strauss, 1967 as cited in Olshansky, 2005). Strategies for Achieving Trustworthiness/Credibility in Qualitative Research may be listed as follows (Olshansky, 2005):

- **Prolonged engagement with and observation of informants:** This strategy is based on developing a trusting relationship with research participants, observing and interacting in various contexts over time, and getting a deep and complex understanding of the phenomenon under study (Olshansky, 2005). In this study ,the researcher spend significant time just for this purpose.
- **Triangulation (multiple sources of data):** This strategy includes multiple methods of data collection, multiple investigators, and multiple contexts/situations (Olshansky, 2005). The researcher performed a lot of informal interviews with participants and established comprehensive analysis of existing approaches in the literature. Most of the participants on pilot study, have been known and observed very well by the researcher for a long time. Academicians and scientists from three universities (Bosporus, Marmara and Yeditepe Universities) scrutinized the study during all processes. The study is presented on four international conferences and appreciated by most of the participants. This study was conducted at two groups (44 participants of pilot study and SYK Customs Brokerage employees). For pilot study, the questionnaire was applied twice to measure test-retest reliability and triangulation.
- **Peer debriefing (colleagues):** This strategy proposes to share data with colleagues, explain that the researcher is in the process of such a research and ask for feedback (Olshansky, 2005). For this study, the researcher established communication with 13 peers starting from the very beginning of the research.

- **Negative case analysis (to include commonalities as well as variabilities):** In this strategy there are not "outliers" in qualitative research and all the variabilities must be embraced in the study (Olshansky, 2005). Learning from the "negative" cases leads to a more complex, dense, thick analysis (Olshansky, 2005). The researcher aimed to manage this in this study. For this purpose special attention is paid to participants who did not demonstrate normal status or data. SVM is very useful in highlighting and evaluating negative cases.
- **Referential adequacy (theoretical sampling):** Theoretical sampling includes a sample of various reference groups based on the ongoing data and this is a process that occurs as the research progresses. Due to time limitations for this research, the model is applied on three organizations. However the research will continue in the future and more applications will be performed.
- **Member checks (research participants/informants):** This strategy requires, going back to the participants to see if the analysis/interpretation makes sense to them based on their experiences (Olshansky, 2005). Most of the participants in the pilot study were asked for feedback and all responses were significantly supportive. Some participants argued that the results of the questionnaires were accurate in explaining their individual and organizational strategies (strategy vectors).
- **Employing an auditor:** This strategy proposes to apply for the assistance of an outside person who can verify the steps taken in arriving at your data analysis/interpretation, verify the logic of your chronology of the research process – able to outline the steps, and verify that a systematic process was undertaken (Olshansky, 2005). In addition to my thesis advisor and progress committee members, three scholars from Yeditepe, Bosphorus, and Marmara Universities also contributed by giving their advices.

- **Thick description (to reflect complexities in the data):** This strategy forces the analysis/interpretation of data to be "thick" in that it includes the complexities, the variabilities as well as the commonalities, and the analysis to represent the diversity of perspectives among the research participants (Olshansky, 2005). To manage this

thickness 45 variables are used to form the questionnaire. Moreover, the model also provides a wide spectrum both for the evaluation of *strategy direction* and *strategy magnitude*. SVM is a comprehensive model to represent all variabilities as well as commonalities.

- **Prevention of premature foreclosure on the data:** This strategy forces the researcher to continue data collection and analysis until "theoretical saturation" is reached, provide evidence of theoretical saturation and generate questions for further study – indicating what areas have not been answered yet (Olshansky, 2005). Our research complies with all the requirements of this rule. Although it was originally developed as a conceptual model, the researcher decided to perform an application to demonstrate the applicability of the model and validate the "theoretical saturation". Both quantitative and qualitative reliability and validity tests are calculated to be valid which supports the "theoretical saturation" of the study. Alternative fields for future expansion also are highlighted in the study.
- **Maintaining a journal to enhance self-reflection:** This strategy advices the researcher to keep track of his/her own ideas, responses, "biases" in order to try as best as he/she can to separate his/her responses from the responses of the participants and acknowledge his/her own biases. The researcher of this study has spent significant effort to determine his biases.

There may be some other indicators of reliability and validity (or credibility and trustworthiness) of a qualitative research. Two of them are researcher validity and face validity, which are explained below.

5.6.2.1 Researcher Validity

While the credibility in quantitative research depends on instrument construction, in qualitative research, "the researcher is the instrument" (Patton, 2002, p. 14). Thus, it seems that when quantitative researchers speak of research validity and reliability, they are usually referring to a research that is credible while the credibility of a qualitative research basically depends on the ability and effort of the researcher (Golafshani, 2003). Huge amount of effort

has been committed for this study. Not only the researcher but also his peers and many academicians are aware of the endeavor dedicated for this particular study by the researcher.

5.6.2.2 Face Validity

Validity is the most important consideration in evaluation of research and face validity is one of the tools to measure it (Burns, 1996). Face validity is not validity in the technical sense; it refers not to what the test actually measures, but to what it appears superficially to measure. Face validity pertains to whether the test "looks valid" to the examinees who take it, the administrative personnel who decide on its use and other technically untrained observers (Anastasi, 1988, p.144). The researcher carried on interviews with many people including participants, administrative personnel, peers, academicians, consultants, technically trained and untrained observers, etc.

5.7 Applications of the Model

SVM is first applied in a Turkish customs brokerage company named SYK Customs Brokerage. After successful completion of the first applications, SVM is applied to two more companies: SeaBank and Teknoden

5.7.1 SYK Customs Brokerage

SYK is a company established in 1950 in Istanbul to provide customs brokerage services to the industries which have import and export operations. Currently SYK's Headquarter is located in Istanbul and has also offices in Bursa and İzmir. Among more than 1000 customs brokerage companies in Turkey, SYK is ranking in the top five percentile in terms of foreign trade volume. Currently, the company serves many leading industrial and commercial companies. The company has a solid understanding of strategy and applies modern management techniques such as TQM, etc. SYK has over 160 employees and 89 of them are located in Istanbul. SVM is applied only in the Istanbul office of SYK.

5.7.2 SeaBank Financial Services Group

The actual name of the organization is not used due to the legal restriction in Turkey instead of its actual name, “SeaBank” will be used to refer to the organization. SeaBank is one of the largest banks of Turkey which is also listed on Istanbul Stock Exchange. The modern roots of SeaBank Financial Services Group date back to 1997 when SeaBank was privatized. Originally, SeaBank was established as a state-owned bank in 1938, primarily to help finance the newly emerging Turkish Maritime industry. SeaBank soon became one of the foremost names in the Turkish banking industry. In 1992, following a decision by the government to consolidate a number of state-owned banks, SeaBank merged with Eximbank. In 1997, SeaBank left this union and was privatized as a separate entity.

SeaBank, joining the Zorlu Group after the privatization realized in 1997, was transferred to Dexia, a prominent European financial group in accordance with the sales agreement signed in May 2006 between Zorlu Group and Dexia. SeaBank Financial Services Group which is presently continuing to operate within Dexia Group is the 6th biggest private bank of Turkey with its 13 subsidiaries and 310 branches as of the end of June 2007.

5.7.3 Teknoden Construction Supervision and Consultancy

Teknoden is a construction inspection company which specializes in industrial plants, shopping malls and luxury housings, using the modern engineering knowledge and methods with its highly professional staff. Teknoden is a small company with 55 employees.

5.7.4 Collection of Data

All three organizations (SYK, SeaBank, and Teknoden) have local area networks for intra-organizational communication. These local area networks are also used for the automation of most of the paperwork related to their business. For the distribution and collection of questionnaires these local area networks are used. This methodology reduced both the total time used for data collection and questionnaire related errors.

As mentioned before, the questionnaires were developed as MS Excel files and included several software tools to increase their quality. For example, all areas except those that were supposed to be filled in by the participants were write-protected. Some cells are programmed

as control cells to eliminate the risk of making multiple selections or unanswered questions. Control cells turn out to be green to express that the questionnaire was filled in without any mistake. Control cells turn out to be red when there was any mistake about the questionnaire and helped the data analyzer to locate the error. Some cells were programmed to calculate some of the SVM related parameters by using collected data. Finally, since collected data was already in computer supported format it was much easier to transfer data to research software programs such as SPSS.

5.7.5 Analysis of Collected Data

All quantitative reliability and validity tests that were performed during pilot study (except test-retest reliability and detailed factor analysis) were also applied on (and only to) SYK data set. Reliability and validity tests were not applied on the data sets on SeaBank and Teknoden due to the previous successful results obtained during pilot study and SYK application.

Evaluations of the outcomes of SVM application on all three organizations were performed separately. Following sections summarizes the reliability and validity tests applied on SYK data set as well as the SVM results for SYK, SeaBank, and Teknoden.

5.7.5.1 Split-Half Reliability

First test is the Split-Half Reliability test and the results are provided below:

Table 66 Split-Half Reliability Statistics for Strategy Direction Y Component-SYK

Reliability Statistics

Cronbach's Alpha	Part 1	,981
		14[a]
	Part 2	,965
		13[b]
	Total N of Items	27
Correlation Between Forms		,791
Spearman-Brown Coefficient	Equal Length	,883
	Unequal Length	,884
Guttman Split-Half Coefficient		,868

a. The items are: Str.Dir.Y1, Str.Dir.Y2, Str.Dir.Y3, Str.Dir.Y4, Str.Dir.Y5, Str.Dir.Y6, Str.Dir.Y7, Str. Dir.Y8, Str.Dir.Y9, Str.Dir.Y10, Str.Dir.Y11, Str. Dir.Y12, Str.Dir.Y13, Str.Dir.Y14.

b. The items are: Str.Dir.Y14, Str.Dir.Y15, Str.Dir. Y16, Str.Dir.Y17, Str.Dir.Y18, Str.Dir.Y19, Str.Dir. Y20, Str.Dir.Y21, Str.Dir.Y22, Str.Dir.Y23, Str.Dir. Y24, Str.Dir.Y25, Str.Dir.Y26, Str.Dir.Y27.

Table 67 Split-Half Reliability Statistics for Strategy Direction X Component-SYK

Reliability Statistics

Cronbach's Alpha	Part 1	Value	,981
		N of Items	14[a]
	Part 2	Value	,962
		N of Items	13[b]
	Total N of Items		27
Correlation Between Forms			,926
Spearman-Brown Coefficient	Equal Length		,962
	Unequal Length		,962
Guttman Split-Half Coefficient			,955

a. The items are: Str.Dir.X1, Str.Dir.X2, Str.Dir.X3, Str.Dir.X4, Str. Dir.X5, Str.Dir.X6, Str.Dir.X7, Str.Dir.X8, Str.Dir.X9, Str.Dir.X10, Str.Dir.X11, Str.Dir.X12, Str.Dir.X13, Str.Dir.X14.

b. The items are: Str.Dir.X14, Str.Dir.X15, Str.Dir.X16, Str.Dir.X17, Str.Dir.X18, Str.Dir.X19, Str.Dir.X20, Str.Dir.X21, Str.Dir.X22, Str. Dir.X23, Str.Dir.X24, Str.Dir.X25, Str.Dir.X26, Str.Dir.X27.

Table 68 Split-Half Reliability Statistics for Strategy Magnitude Component-SYK

Reliability Statistics

Cronbach's Alpha	Part 1	Value	,942
		N of Items	5[a]
	Part 2	Value	,929
		N of Items	4[b]
	Total N of Items		9
Correlation Between Forms			,677
Spearman-Brown Coefficient	Equal Length		,807
	Unequal Length		,809
Guttman Split-Half Coefficient			,795

a. The items are: Str.Mag.1, Str.Mag.2, Str.Mag.3, Str.Mag.4, Str. Mag.5.

b. The items are: Str.Mag.5, Str.Mag.6, Str.Mag.7, Str.Mag.8, Str. Mag.9.

Table 69 Split-Half Reliability Statistics for Power Difference Component-SYK

Reliability Statistics

Cronbach's Alpha	Part 1	Value	,650
		N of Items	5[a]
	Part 2	Value	,561
		N of Items	4[b]
	Total N of Items		9
Correlation Between Forms			,608
Spearman-Brown Coefficient	Equal Length		,756
	Unequal Length		,758
Guttman Split-Half Coefficient			,728

a. The items are: Pow.Dif.1, Pow.Dif.2, Pow.Dif.3, Pow.Dif.4, Pow. Dif.5.

b. The items are: Pow.Dif.5, Pow.Dif.6, Pow.Dif.7, Pow.Dif.8, Pow. Dif.9.

5.7.5.2 Internal Consistency

Second test was the internal consistency and the results are summarized below:

Table 70 Internal consistency of instruments - SYK

Instrument	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Str.Dir.Y Comp.	0,982	0,982
Str.Dir.X Comp.	0,985	0,985
Strategy Magnitude	0,943	0,943
Power Difference	0,758	0,759

All Cronbach's Alpha values are above 0.758 which indicates the internal consistency of the collected data.

5.7.5.3 Explarotary Factor Analysis

Third test was the explarotary factor analysis. KMO measure, Bartlett's Test of Sphericity Values and Rotated Component Matrixes are provided below.

Table 71 KMO and Bartlett's Test of Strategy Direction Y Component -SYK

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,833
Bartlett's Test of Sphericity	Approx. Chi-Square	2108,454
	df	351
	Sig.	,000

Table 71 presents the results of the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of *Strategy Direction Y component*. For *Strategy Direction Y component* Bartlett's Test of Sphericity is significant and the KMO measure is 0.833 which is evaluated as "meritorious" (Kaiser, 1974).

Table 72 Rotated Component Matrix of Strategy Direction Y Component -SYK

Rotated Component Matrix [a]

	Component		
	1	2	3
Str.Dir.Y14	,881	,244	,261
Str.Dir.Y12	,836	,303	,298
Str.Dir.Y6	,834	,329	,277
Str.Dir.Y4	,815	,174	,448
Str.Dir.Y7	,810	,199	,433
Str.Dir.Y8	,805	,280	,311
Str.Dir.Y3	,773	,287	,477
Str.Dir.Y9	,759	,205	,526
Str.Dir.Y13	,759	,307	,131
Str.Dir.Y1	,757	,423	,204
Str.Dir.Y2	,752	,398	,264
Str.Dir.Y10	,723	,504	,203
Str.Dir.Y15	,698	,514	,137
Str.Dir.Y22	,667	,216	,596
Str.Dir.Y25	,256	,913	,174
Str.Dir.Y26	,289	,903	,139
Str.Dir.Y23	,207	,880	,210
Str.Dir.Y18	,210	,876	,266
Str.Dir.Y27	,263	,876	,159
Str.Dir.Y20	,226	,857	,178
Str.Dir.Y19	,330	,845	,158
Str.Dir.Y24	,380	,810	,146
Str.Dir.Y21	,270	,635	,339
Str.Dir.Y17	,434	,337	,788
Str.Dir.Y16	,449	,342	,770
Str.Dir.Y5	,505	,331	,754
Str.Dir.Y11	,594	,256	,653

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table 73 KMO and Bartlett's Test of Strategy Direction X component -SYK

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,835
Bartlett's Test of Sphericity	Approx. Chi-Square	2074,280
	df	351
	Sig.	,000

Table 73 presents the results of the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of *Strategy Direction X component*. For *Strategy Direction X component* Bartlett's Test of Sphericity is significant and the KMO measure is 0.835 which is evaluated as "meritorious" (Kaiser, 1974).

Table 74 Rotated Component Matrix of Strategy Direction X Component -SYK

Rotated Component Matrix [a]

	Component		
	1	2	3
Str.Dir.X5	,837	,371	,182
Str.Dir.X8	,835	,445	,159
Str.Dir.X6	,815	,389	,318
Str.Dir.X4	,803	,436	,136
Str.Dir.X7	,788	,367	,394
Str.Dir.X11	,757	,354	,431
Str.Dir.X14	,754	,394	,389
Str.Dir.X1	,741	,488	,271
Str.Dir.X22	,692	,468	,335
Str.Dir.X2	,689	,501	,368
Str.Dir.X9	,677	,217	,524
Str.Dir.X3	,636	,575	,369
Str.Dir.X23	,571	,235	,432
Str.Dir.X15	,447	,826	,228
Str.Dir.X12	,445	,815	,221
Str.Dir.X19	,440	,810	,281
Str.Dir.X10	,440	,759	,289
Str.Dir.X24	,409	,730	,259
Str.Dir.X20	,249	,694	,449
Str.Dir.X16	,487	,638	,509
Str.Dir.X21	,583	,628	,291
Str.Dir.X17	,501	,607	,342
Str.Dir.X13	,361	,544	,501
Str.Dir.X26	,279	,182	,850
Str.Dir.X25	,271	,238	,849
Str.Dir.X27	,211	,429	,754
Str.Dir.X18	,301	,510	,545

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Table 75 KMO and Bartlett's Test of Strategy Magnitude -SYK

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,874
Bartlett's Test of Sphericity	Approx. Chi-Square	421,588
	df	36
	Sig.	,000

Table 75 presents the results of the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of *Strategy Magnitude*. For *Strategy Magnitude* Bartlett's Test of Sphericity is significant and the KMO measure is 0.874 which is evaluated as "meritorious" (Kaiser, 1974).

Table 76 Rotated Component Matrix of Strategy Magnitude -SYK

Rotated Component Matrix [a]

	Component	
	1	2
Str.Mag.1	,922	,252
Str.Mag.3	,902	,277
Str.Mag.4	,850	,409
Str.Mag.2	,845	,293
Str.Mag.7	,306	,890
Str.Mag.6	,316	,878
Str.Mag.9	,349	,874
Str.Mag.8	,201	,786
Str.Mag.5	,584	,619

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

Table 77 KMO and Bartlett's Test of Power Difference -SYK

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,686
Bartlett's Test of Sphericity	Approx. Chi-Square	247,201
	df	36
	Sig.	,000

Table 77 presents the results of the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of *Power Difference*. For *Power Difference* Bartlett's Test of Sphericity is significant and the KMO measure is 0.686 (almost 0.70) which might be evaluated as "middling" (Kaiser, 1974).

Table 78 Rotated Component Matrix of Power Difference -SYK

Rotated Component Matrix [a]

	Component		
	1	2	3
Pow.Dif.5	,925	,060	,044
Pow.Dif.6	,919	,059	-,027
Pow.Dif.4	,906	-,019	,027
Pow.Dif.3	,847	,208	,092
Pow.Dif.9	,077	,971	,049
Pow.Dif.8	,109	,953	,038
Pow.Dif.1	-,137	-,120	,863
Pow.Dif.2	-,017	,204	,797
Pow.Dif.7	,295	,021	,715

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 4 iterations.

5.7.6 Evaluation of the Outcomes and Results of SYK

The software developed for this particular research was modified to fit the organizational structure of SYK. The modified version also focused on six departments (Customs operation, finance, process development, accounting, marketing, and management) of SYK to highlight the strategic characteristics of each department and differences between them.

Figure 87 demonstrates the *Strategy Mapping* of SYK and its departments.

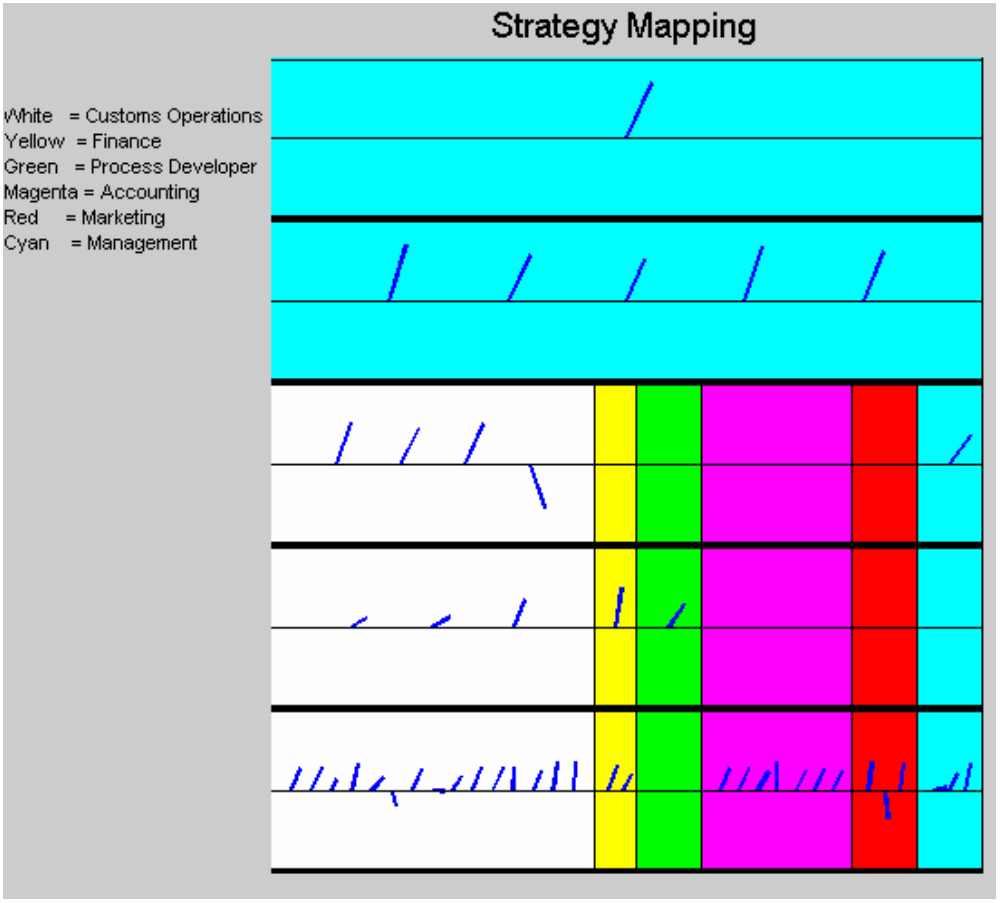


Figure 87 Strategy Mapping of SYK

Employees at Level 4 and Level 5 were all accepted to be in "management department" which is colored in cyan. There are also some employees who are working in management department but are not managers. Those employees (actually their *individual strategy vectors*) are also drawn in cyan-colored area.

Strategy Mapping of SYK demonstrated that most of the employees (and managers) have adaptive-innovative *individual strategy vectors*. Especially Level 4 and Level 5 managers have impressive harmony both in terms of *strategy direction* and *strategy magnitude*.

Following graph compares *the aimed* and *measured organizational strategy vectors* and demonstrates the *strategy gap* in SYK.

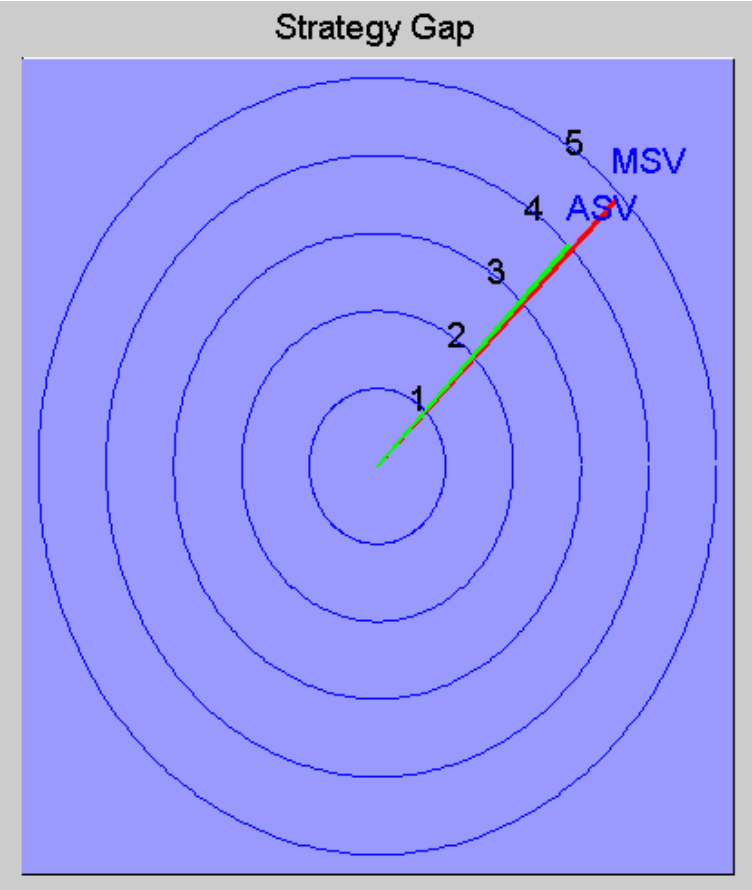


Figure 88 Strategy Gap of SYK

Impressively the *aimed* and *measured strategy directions* are very close with less than 1 degree deviation. Strategy deficiency is almost -1 but surprisingly the *measured strategy magnitude* is greater than aimed value. The precise values of *Strategy Deviation* and *Strategy Deficiency* are displayed below (a snapshot from software).

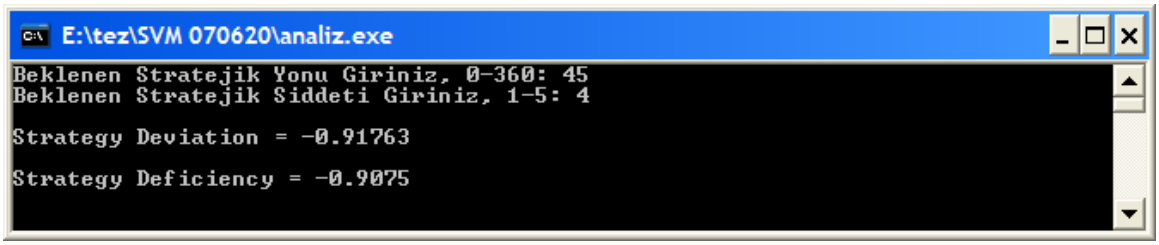


Figure 89 Strategy Deviation and Strategy Deficiency of SYK

5.7.7 Evaluation of the Outcomes and Results of SeaBank

The generic software developed for this particular research was used for the evaluation of SeaBank data. Figure 90 demonstrates the *Strategy Mapping* of SeaBank.

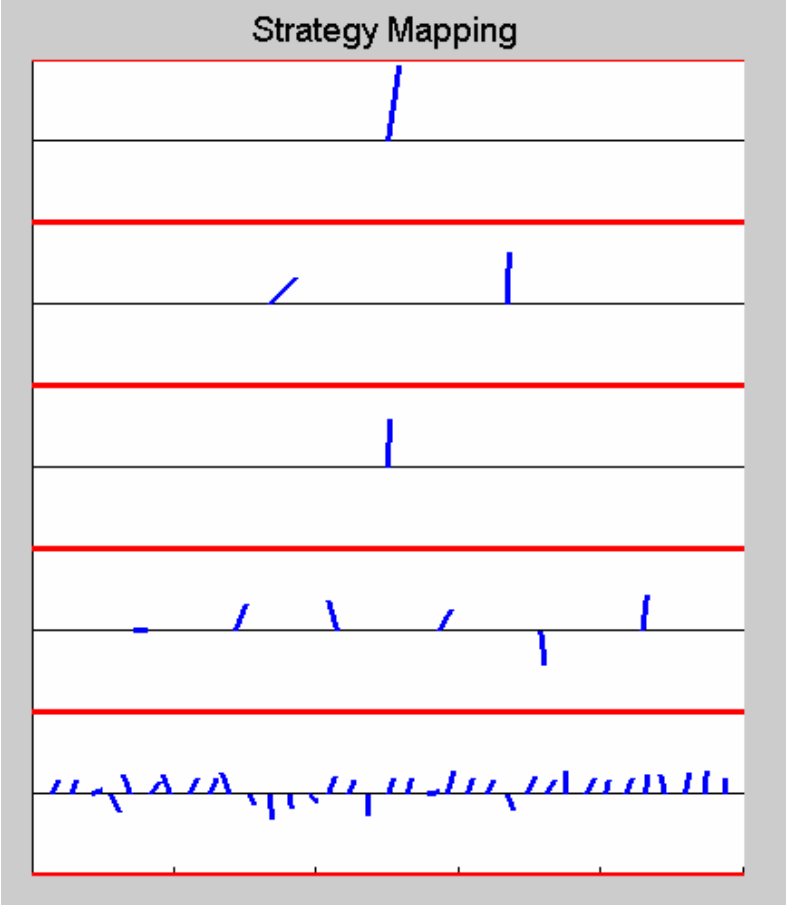


Figure 90 Strategy Mapping of SeaBank

Strategy Mapping of SeaBank demonstrates that most of the employees (and managers) have quite innovative *individual strategy vectors.*

Following graph compares *the aimed* and *measured organizational strategy vectors* and demonstrates the *strategy gap* in SeaBank.

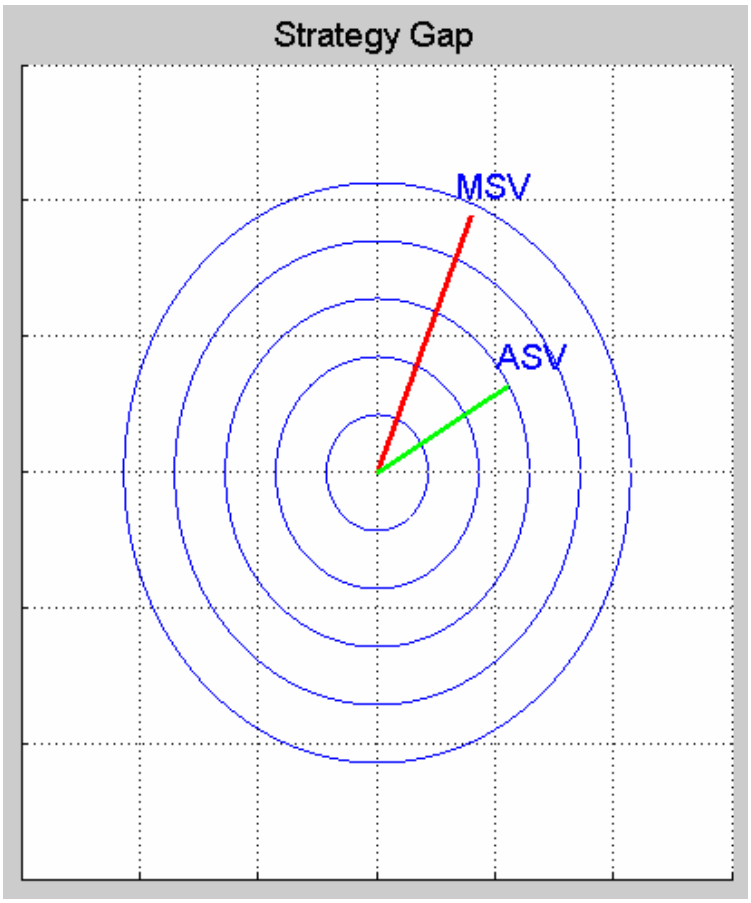


Figure 91 Strategy Gap of SeaBank

The *aimed* and *measured strategy directions* in SeaBank are not very close. The *Strategy Deviation* is 37 degree and the *Strategy deficiency* is almost -2 (-1,82) but surprisingly the *measured strategy magnitude* is much greater than aimed value. The precise values of *Strategy Deviation* and *Strategy Deficiency* are displayed below (a snapshot from software).

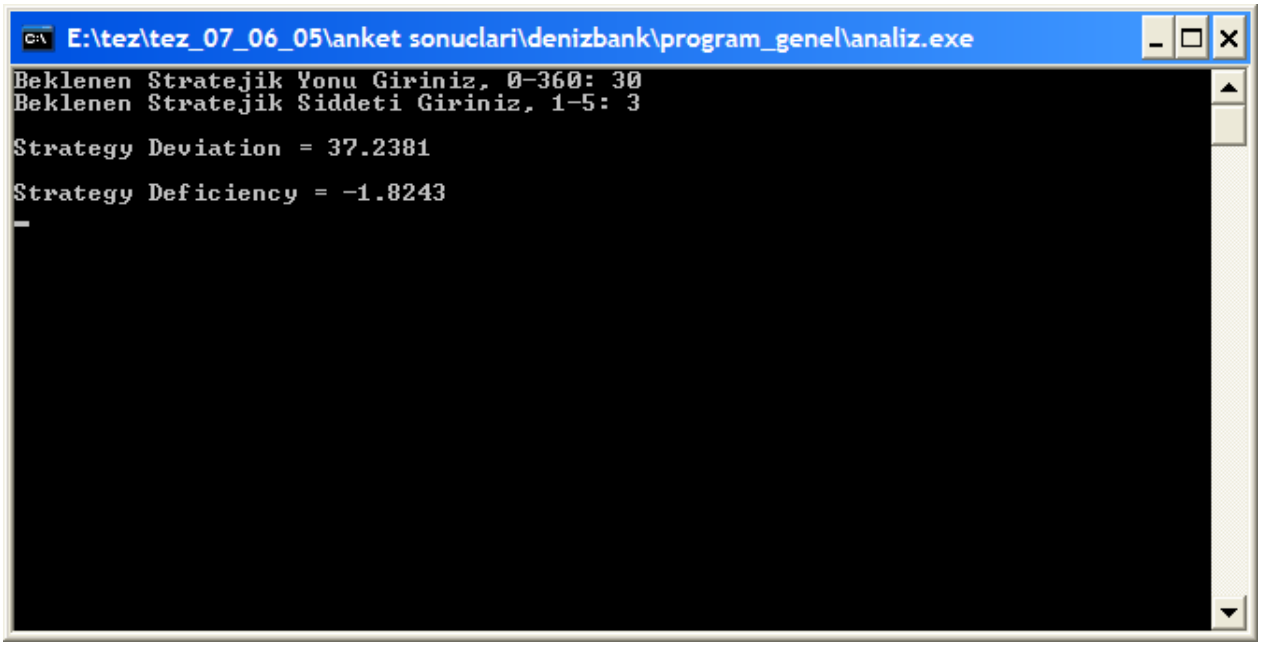


Figure 92 Strategy Deviation and Strategy Deficiency of SeaBank

5.7.8 Evaluation of the Outcomes and Results of Teknoden

The generic software developed for this particular research was used for the evaluation of Teknoden data. Figure 93 demonstrates the *Strategy Mapping* of Teknoden and its departments.

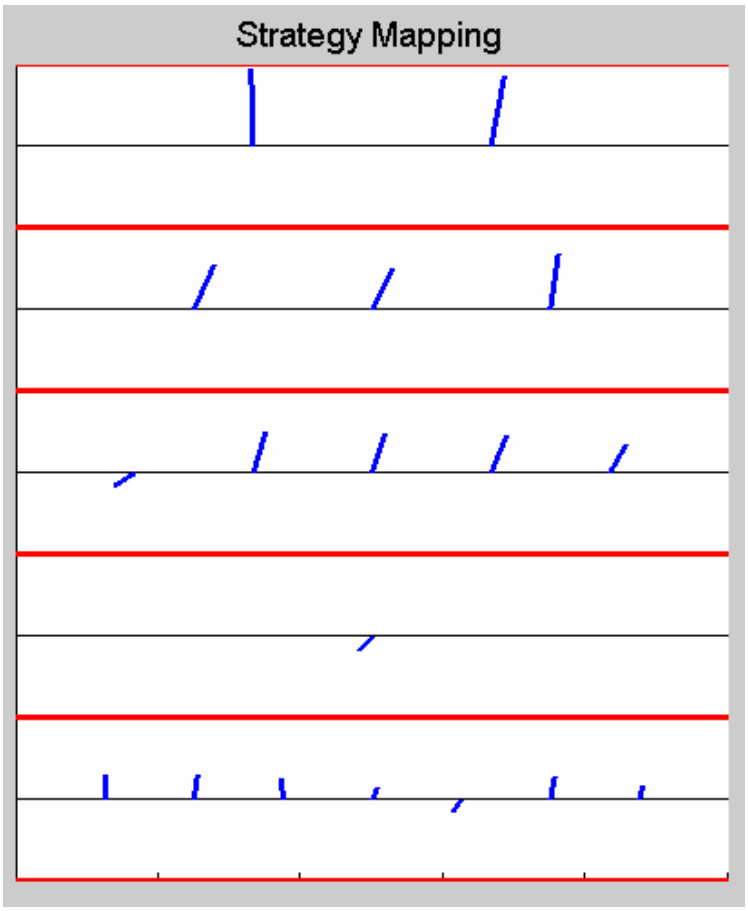


Figure 93 Strategy Mapping of Teknoden

Strategy Mapping of Teknoden demonstrates that most of the employees (and managers) have adaptive-innovative *individual strategy vectors*. Employees at all levels (except two employees, one at level 2 and one at level 3) have quite similar *strategy directions* and harmonious *strategy* magnitudes.

Following graph compares *the aimed* and *measured organizational strategy vectors* and demonstrates the *strategy gap* in Teknoden.

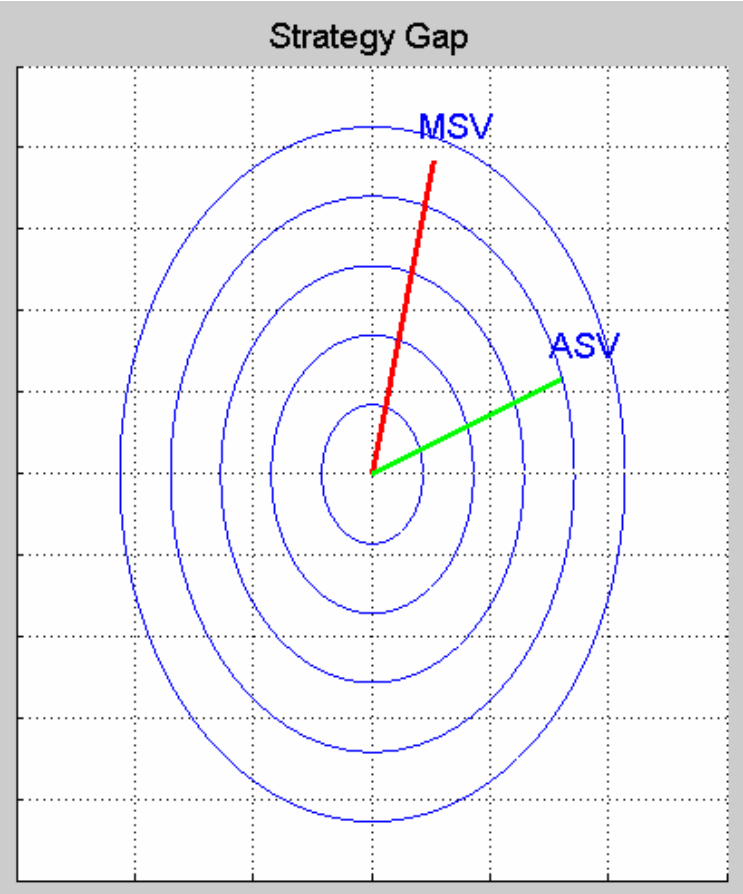


Figure 94 Strategy Gap of Teknoden

The difference between the *aimed* and *measured strategy directions* is significant The *Strategy deviation* is almost 55 degree whereas the *strategy deficiency* is only -0.6. As was the case for other two organizations the *measured strategy magnitude* is greater than aimed value also in Teknoden. The precise values of *Strategy Deviation* and *Strategy Deficiency* are displayed below (a snapshot from software).

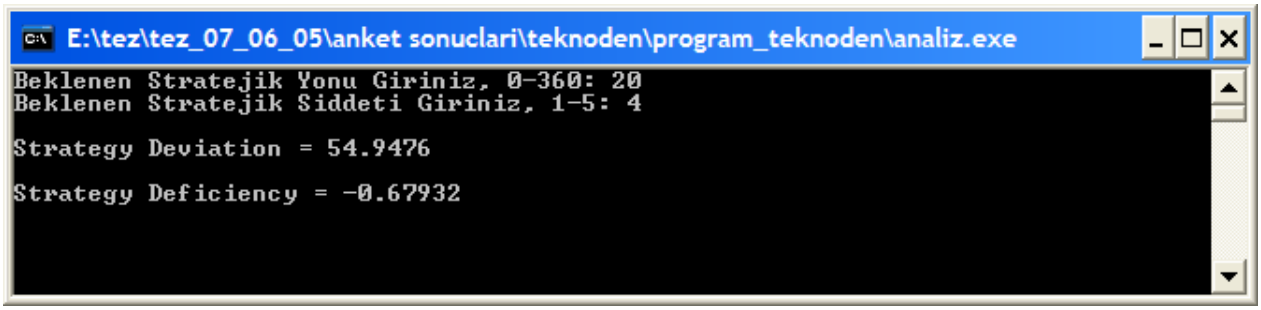


Figure 95 Strategy Deviation and Strategy Deficiency of Teknoden

6 CONCLUSIONS

6.1 Summary of the proposed model

The proposed model SVM may be summarized with three major bottom lines. First, SVM claims that the strategies of individuals could be expressed as vectors with specific direction and magnitude and those vectors might be measured. A questionnaire composed of four instruments is developed to measure *individual strategy vectors*. The instruments in the questionnaire are dedicated to four parameters: *Horizontal component of the strategy vector direction, vertical component of the strategy vector direction, Raw Strategy magnitude*, and *Raw Power difference*.

Second, SVM claims that the strategy vector of an organization could be calculated by summing the strategy vectors of individuals. A special computer software program is developed to handle complex vectorial addition processes and the program successfully calculated *the strategy vector* of the organization.

Finally and third, SVM claims that localization of *the individual strategy vectors* on the formal organizational chart and comparison of *the aimed* and *measured organizational strategy vectors* might help managers/scholars to address certain strategy (or strategic) problems and perceive *the organizational strategy performance* and *strategic status*.

6.2 Summary of results and findings

First application of SVM was performed as a pilot study on 44 participants from 15 different organizations. Both qualitative and quantitative reliability and validity tests after pilot study proved the proposed measurement tools (questionnaire-four instruments) to be successful and applicable.

Real application is performed on three different sized (small, medium, and large) organizations from three different industries: SeaBank, Teknoden and SYK Customs Brokerage. The response rates to the questionnaires were quite high and the research results were very impressive. Most of the individuals had *adaptive-innovative strategy vectors* thus *the organizational strategy vectors* of all three organizations are calculated to be *adaptive-innovative* with a significantly high magnitude. The resultant strategy vector of SYK matched

with the expectations of the SYK top managers. *Strategy deficiency* and *strategy deviation* were calculated to be very low which indicates very small *strategy gap*. For the other two organizations there were significant gaps between the *measured* and *aimed organizational strategy vectors*.

Applications of SVM on three organizations are the first successful implementations of the proposed model. The primary concern of the author was to develop a conceptual model proven to be valid and reliable both in terms of strategic management science and real business environment. Of course this requires continuous and intensive efforts even after the dissertation.

6.3 Contributions to the business

This study might have significant contributions to the business (especially to the top managers and strategy makers of organizations) because it proposes a set of tools for strategic performance evaluation, for strategic status determination, and for the diagnosis of strategic problems.

Miles and Snow (1984, 1994) stress two main tasks for managers. First is to develop and utilize a strategy that aligns the organization's capabilities with the opportunities and constraints present in its environment. Second is to arrange resources internally to support the alignment. Both require clear understanding of organizational status in terms of strategy. This study aims to provide necessary information for managers or strategy makers to do their tasks successfully.

As seen in SYK, Teknoden and SeaBank samples SVM is useful for several reasons.

First SVM helps to visualize the *aimed* and *measured organizational strategy vectors*. By comparing these two vectors managers or strategy makers may see the difference where they want to be and where they actually are. This difference is coined as *strategy gap* and is quite useful for instant strategy check-ups.

Second, SVM is a useful diagnosis tool to determine certain strategy problems including *strategy deviation, strategy deficiency, and strategy anomalies.*

Third SVM provides a tool called *strategy mapping* which might be used by managers to evaluate their organization and their employees from the perspective of organizational structure. This might be useful tool in human resources management.

Finally SVM proposes an applicable holistic model for the management of organizational strategies. Managers and/or strategy makers might use SVM periodically to take snap-shots of their organizational strategy performance and to monitor their development in time.

6.4 Contributions to the literature

This study provides contributions to the (strategic) management literature because it proposes a new, empirical and holistic approach for understanding organizational strategies and attempts to illuminate the dusky atmosphere of strategic problems in organizations. The model also establishes a measurement tool for the evaluation of strategic performance.

SVM transfers a very well known and widely used tool (vectors and vector operations) from positive sciences to social sciences. SVM introduces a challenging approach and claims to be rational and universal.

Strategic management is introduced as an application field whose principal purpose is either to describe, predict or change organizational situation. SVM tries to provide a holistic approach to cover all purposes at once.

Finally SVM also provides a rational model to formulate strategy and strategic problems. This tool may be used by the researchers and scholars to diagonese the strategy related problems in organizations.

6.5 Limitations

There were basically two limitations. First was time. It would be much better if this study had longitudinal perspective which may only be accomplished by periodic (6-12 months) application of SVM on the same organization and comprehensive/comparative analysis of all results. Unfortunately the period assigned for my dissertation limited me from repeating applications.

Second limitation was about the determination of sample organizations. Unfortunately not many organizations demonstrated willingness in participation. One reason was the lack of

belief in academic studies. Second reason was the privy structure of Turkish organizations. This study would be much better if I had the chance to apply the proposed model to at least 50 organizations instead of three.

6.6 Recommendations for Future Research

If SVM is applied on the same organizations after certain periods (6-12 months) it could be a useful tool to monitor the development of *organizational (and individual) strategy vectors* in time.

The conceptual framework of SVM provides a generic expression and may also be useful in other fields of social sciences. For example employee motivation, compensation policies, change management, risk issues etc. may all be expressed as vectors with careful modification of SVM.

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APPENDICE 1

Merhaba,
Adım Ömer Livvarçin. Yeditepe Üniversitesi'nde doktora tezimi tamamlamaya çalışıyorum ve bu kapsamda kurumsal stratejilerin ölçülmesi amacıyla bir çalışma yapıyorum. Anketi uygun bir şekilde doldurarak bana destek olabilirsiniz.

- Anket 5 bölümdeki toplam 77 (5+72) sorudan oluşmaktadır.
- Anketin toplam 12 dakika sürmesi beklenmektedir.
- Bu çalışma sadece bilimsel amaçlarla yapılmaktadır ve başka bir amaçla kullanılmayacaktır.
- Kişisel bilgileriniz gizli tutulacaktır.
- Lütfen bütün soruları cevaplandırmaya çalışın. Size tam olarak uyan bir şık mevcut değil ise lütfen en yakın şıkkı işaretleyiniz.

SVM StrategyVectorModel

1. Aşağıdaki sorularda size en uygun olan kutucuğu işaretleyiniz.

NOT : Sadece sarı kutucukları içerisine **X** yazarak işaretleyiniz. Lütfen diğer bölümlerde herhangi bir değişiklik yapmayınız.
Her satırda sadece bir kutucuğu işaretleyiniz.

											Kontrol
Cinsiyet		Bay		Bayan							0
Yaş		20 ve altı		21-30		31-40		40-50		50 üzeri	0
Eğitim		İlköğretim		Lise		Yüksek O.		Üniversite		Yük.Lisans		Doktora	0
Konumunuz		Çalışan		Şef/Ustabaşı		Yönetici		Üst yönetici		Tepe yönetici	0
Medeni haliniz		Evli		Bekar							0

2. Aşağıdaki cümlelerin herbirini sağ taraftaki dokuz kutucuktan birini seçerek tamamlayınız. Seçiminizin **"Yeni fikirleri destekliyorum"** ile **"Mevcut sistemi destekliyorum"** arasında bir noktada olacağına dikkat ediniz ve size en uygun kutuyu işaretleyiniz.

NOT : Sadece sarı kutucukları içerisine **X** yazarak işaretleyiniz. Lütfen diğer bölümlerde herhangi bir değişiklik yapmayınız.

Her satırda sadece bir kutucuğu işaretleyiniz.

		Yeni fikirleri destekliyorum									Mevcut sistemi destekliyorum	Kontrol
1	Kurum politikaları ile ilgili olarak.....											0
2	Kurum vizyonu ile ilgili olarak.....											0
3	Kurumun görevleri (misyonu) ile ilgili olarak.....											0
4	Kurumun temel ilkeleri ile ilgili olarak.....											0
5	Kurumdaki düzen ve kurallar ile ilgili olarak.....											0
6	Kurumun yönetim şekli ile ilgil olarak.....											0
7	Kurum kültürü ile ilgili olarak.....											0
8	Kurumumdaki kurumsallaşma ile ilgili olarak.....											0
9	Kurumsal konulardaki tutarlılık ve uyumluluk ile ilgili olarak.....											0
10	Gerektiğinde risk alınması konusu ile ilgili olarak.....											0
11	Kurumsal değerler ile ilgili olarak.....											0
12	Stratejik değişimler ile ilgili olarak.....											0
13	Strateji belirleme ve uygulama süreçleri ile ilgili olarak.....											0
14	Kurumunuzun özellikle önem verdiği hususlar ile ilgili olarak.....											0
15	Kurumsal rekabet ile ilgili olarak.....											0
16	Kurumsal problemlerin çözümü ile ilgili olarak.....											0
17	Kurumdaki liderlik uygulamaları ile ilgili olarak.....											0
18	Çalışanların yönetime katkı sağlaması ile ilgili olarak.....											0
19	Kurumun operasyonel çalışmaları ile ilgili olarak.....											0
20	Kişisel gelişim ile ilgili olarak.....											0
21	Geleceğe yönelik kurumsal yol haritasının belirlenmesi ile ilgili olarak.....											0
22	Kurum içi hiyerarşi ile ilgili olarak.....											0
23	Kurum içi iletişim ile ilgili olarak.....											0
24	Teknolojinin kullanımı ile ilgili olarak.....											0
25	Performans değerlendirmesi ile ilgili olarak.....											0
26	Kurum içi dayanışma ile ilgili olarak.....											0
27	Kurum içi eğitimile ilgili olarak.....											0

3. Aşağıdaki cümlelerin herbirini sağ taraftaki dokuz kutucuktan birini seçerek tamamlayınız. Seçiminizin **"Çevresel faktörlerin etkisinin farkındayım."** ile **"Herhangi bir çevresel etki beklemiyorum."** arasında bir noktada olacağına dikkat ediniz ve size en uygun kutuyu işaretleyiniz.

NOT : Sadece sarı kutucukları içerisine **X** yazarak işaretleyiniz. Lütfen diğer bölümlerde herhangi bir değişiklik yapmayınız.

Her satırda sadece bir kutucuğu işaretleyiniz.

		Çevresel faktörleri dikkate alırım	Çevresel faktörleri dikkate almam	Kontrol
28	Kurum politikaları ile ilgili olarak.....			0
29	Kurum vizyonu ile ilgili olarak.....			0
30	Kurumun görevleri (misyonu) ile ilgili olarak.....			0
31	Kurumun temel ilkeleri ile ilgili olarak.....			0
32	Kurumdaki düzen ve kurallar ile ilgili olarak.....			0
33	Kurumun yönetim şekli ile ilgil olarak.....			0
34	Kurum kültürü ile ilgili olarak.....			0
35	Kurumumdaki kurumsallaşma ile ilgili olarak.....			0
36	Kurumsal konulardaki tutarlılık ve uyumluluk ile ilgili olarak.....			0
37	Gerektiğinde risk alınması konusu ile ilgili olarak.....			0
38	Kurumsal değerler ile ilgili olarak.....			0
39	Stratejik değişimler ile ilgili olarak.....			0
40	Strateji belirleme ve uygulama süreçleri ile ilgili olarak.....			0
41	Kurumunuzun özellikle önem verdiği hususlar ile ilgili olarak.....			0
42	Kurumsal rekabet ile ilgili olarak.....			0
43	Kurumsal problemlerin çözümü ile ilgili olarak.....			0
44	Kurumdaki liderlik uygulamaları ile ilgili olarak.....			0
45	Çalışanların yönetime katkı sağlaması ile ilgili olarak.....			0
46	Kurumun operasyonel çalışmaları ile ilgili olarak.....			0
47	Kişisel gelişim ile ilgili olarak.....			0
48	Geleceğe yönelik kurumsal yol haritasının belirlenmesi ile ilgili olarak.....			0
49	Kurum içi hiyerarşi ile ilgili olarak.....			0
50	Kurum içi iletişim ile ilgili olarak.....			0
51	Teknolojinin kullanımı ile ilgili olarak.....			0
52	Performans değerlendirmesi ile ilgili olarak.....			0
53	Kurum içi dayanışma ile ilgili olarak.....			0
54	Kurum içi eğitimile ilgili olarak.....			0

4. Aşağıdaki cümlelerin herbirini sağ taraftaki dokuz kutucuktan birini seçerek tamamlayınız. Seçiminizin "**En alt düzeyde**" ile "**En üst düzeyde**" arasında bir noktada olacağına dikkat ediniz ve size en uygun kutuyu işaretleyiniz.

NOT : Sadece sarı kutucukları içerisine **X** yazarak işaretleyiniz. Lütfen diğer bölümlerde herhangi bir değişiklik yapmayınız.

Her satırda sadece bir kutucuğu işaretleyiniz.

		En alt düzeyde → En üst düzeyde	Kontrol
55	Kurum stratejilerinin belirlenmesinde hukuki yetkilerinizi hangi düzeyde kullanıyorsunuz?		0
56	Kurum stratejilerinin belirlenmesinde ceza ve ödül yetkilerinizi hangi düzeyde kullanıyorsunuz?		0
57	Kurum stratejilerinin belirlenmesinde bilgi, tecrübe ve özgüveninizi hangi düzeyde kullanıyorsunuz?		0
58	Kurum stratejilerinin belirlenmesinde kaynak kullanımı ve bilgi akışına yönelik yetkilerinizi hangi düzeyde kullanıyorsunuz?		0
59	Kurum stratejilerinin belirlenmesinde sosyal konumunuzu ve insanların size olan teveccühünü hangi düzeyde kullanıyorsunuz?		0
60	Kurum stratejilerinin belirlenmesinde eş, dost ve yakın çevrenizin size sağladığı imkanları hangi düzeyde kullanıyorsunuz?		0
61	Kurum stratejilerinin belirlenmesinde kişisel karizmanızı ve insaları etkileme yeteneğinizi hangi düzeyde kullanıyorsunuz?		0
62	Kurum stratejilerinin belirlenmesinde fiziki ve psikolojik baskıyı hangi düzeyde kullanıyorsunuz?		0
63	Kurum stratejilerinin belirlenmesinde bağlantılarınızın size sağladığı imkanları hangi düzeyde kullanıyorsunuz?		0

5. Aşağıdaki cümlelerin herbirini sağ taraftaki dokuz kutucuktan birini seçerek tamamlayınız. Seçiminizin "**En alt düzeyde**" ile "**En üst düzeyde**" arasında bir noktada olacağına dikkat ediniz ve size en uygun kutuyu işaretleyiniz.

NOT : Sadece sarı kutucukları içerisine **X** yazarak işaretleyiniz. Lütfen diğer bölümlerde herhangi bir değişiklik yapmayınız.

Her satırda sadece bir kutucuğu işaretleyiniz.

		En alt düzeyde ← → En üst düzeyde	Kontrol
64	En alt düzey çalışanlar ile en üst düzey yöneticilerin kurumsal stratejiye yönelik sorumlulukları arasındaki fark ne kadardır?		0
65	En alt düzey çalışanlar ile en üst düzey yöneticilerin hak ve yetkileri arasındaki fark ne kadardır?		0
66	Çalışanların; kendilerinden bir üst düzeydeki yöneticilere bağımlılığı ne kadardır?		0
67	Çalışanlar arasındaki hiyerarşik seviye farkının kurumsal faaliyetlerdeki etkisi ne kadardır?		0
68	Ast üst ilişkilerinde seviye farkının etkisi ne kadardır?		0
69	Kuralların belirlenmesi ve uygulanmasında seviye farkının etkisi ne kadardır?		0
70	Kişilere tanınan hak ve ayrıcalıklarda seviye farkının etkisi ne kadardır?		0
71	Yetki ve sorumlulukların tepe yöneticilerde ve merkezde toplanma oranı ne kadardır?		0
72	Küçük büyük farketmeksizin her türlü karar ve uygulamadan önce tepe yöneticilere danışma oranı ne kadardır?		0

BIBLIOGRAPHY

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		Engineering of Computer and Control Systems
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