

ORGANIZING CORPORATE CULTURE:  
A CASE STUDY OF A TURKISH SOFTWARE COMPANY

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## **ABSTRACT**

### **ORGANIZING CORPORATE CULTURE: A CASE STUDY OF A TURKISH SOFTWARE COMPANY**

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The purpose of this research is to establish an innovative organizational culture in a Turkish software company. In order to do this, the perceived current and the preferred organizational cultures of the company were studied. The preferred culture of upper management and the differences between the perceived current and preferred organizational cultures by different employee groups were also investigated. The culture assessment was performed using Cameron and Quinn's (1999) Organizational Culture Assessment Instrument (OCAI). According to the survey results, the company's current culture was Hierarchy culture, and the least perceived current culture was Adhocracy. The preferred organizational culture of employees was Clan and Adhocracy was the second. Top management's preferred organizational culture was Adhocracy. Different from the employees, top management also believed that Adhocracy also exists in the company after Hierarchy culture. After analyzing the company's current and preferred cultures, a model based on Lewin's (1958) model of Organizational Change was adapted. Lewin's model was

modified by removing the first stage of the model: unfreezing; it is believed that there will be no resistance to change when trying to establish an innovative culture. As for further research, a tactical plan should be established according to the proposed actions and the model established for the company should be tested if it reaches its goal or not.

Keywords: Organizational Culture, Innovative Culture, Culture Assessment

## ÖZ

### ÖRGÜTSEL KÜLTÜR DÜZENLEME: TÜRK YAZILIM FİRMASINDAN BİR ÖRNEK UYGULAMA

ÇALIŞIR, Meliha

Yüksek Lisans, İşletme Bölümü

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Bu araştırmanın amacı, bir Türk yazılım firmasında yaratıcı BİR kurum kültürü oluşturmaktır. Bu amacı gerçekleştirmek için, algılanan mevcut ve istenilen kurum kültürlerinin ortaya çıkarılması gerekmektedir. Bunların yanı sıra üst yönetimin istediđi kurum kültürü ile farklı çalışan gruplarının algıladıkları mevcut kurum kültürleri de çalışılmaktadır. Kurum kültürü değerlendirmesi yapılırken, Cameron ve Quinn'in (1999) Kurumsal Kültür Deđerlendirme Aracı kullanılmaktadır. Araştırmanın sonuçlarına göre, şirketin algılanan mevcut kültürü Hiyerarşi iken, en son algılanan kültür de Adhokrasi'dir. Çalışanların istedikleri kurum kültürü olarak ilk sırada Klan kültürü varken, ikinci sırada Adhokrasi ortaya çıkmaktadır. Üst yönetimin istediđi kurum kültürü Adhokrasi çıkmaktadır. Çalışanlardan farklı olarak, üst yönetim mevcut kültürde de Hiyerarşiden sonra Adhokrasi kültürünün olduğunu düşünmektedir. Şirketin mevcut ve istenilen kültürleri analiz edildikten sonra, Lewin'in (1958) Kurumsal Deđişim Modeli baz alınarak bir model

oluřturulmaktadır. Yaratıcı kurum kùltürü oluřtururken deęiřime direnç olmayacaęını düşünùldüęü için, Lewin'in modelinden ilk ařama olan 'buzları çözme' ařaması çıkarılmaktadır. Daha ileri bir çalıřma olarak, önerilen eylemler için bir eylem planı hazırlanabileceęi ve oluřturulan modelin amacına ulařıp ulařmadıęının incelenebileceęi önerilmektedir.

Anahtar Kelimeler: Kurum Kùltürü, Yaratıcı Kùltür, Kùltür Deęerlendirme

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## **CHAPTER**

### **1. INTRODUCTION**

#### **1.1. Overview**

The defense industry in Turkey has gained more importance as the Turkish government aims to minimize the dependence of the Turkish Armed Forces on foreign countries. The defense equipment, both software and hardware, have mostly been imported from abroad. Turkey recently started to “allocate more resources to research and development focusing on original and innovative design projects” (Kuban, 2006, p.7). The strategic plan of the Undersecretariat for the Defense Industry for 2007-2011 has four main goals:

1. To improve the procurement activities in accordance with the user requirements and industrial goals.
2. To restructure the defense industry to be able to provide unique local solutions and compete in the international arena.
3. To participate actively in the multinational defense and security projects that promotes international cooperation.
4. To improve the organizational structure.

(Undersecretariat for Defense Industry, 2008)

Turkey aims not only to develop its own defense industry through national companies but also to export national defense industry products. Under the



second goal, the Undersecretariat for the Defense Industry aims to increase the percentage of defense system needs met by national sources from 25% to 50% by the end of 2010 (Undersecretariat for the Defense Industry, 2008).

## **1.2. Background and Rationale for the Research**

The company that is the subject to this study is a Turkish software development company mainly operating in the defense industry. The company was established in 1998 and is owned by Turkish citizens. The company has grown very fast in the last five years. The number of employees has increased from 88 to 230. The increase in sales is even more dramatic. In the last five years, the sales have increased by 500%. The fast growth of the company has resulted in complaints from senior employees that the organizational culture is not understood and accepted by newcomers to the company. But what employees mean by “organizational culture” should be well understood.

The research idea was established when the Human Resources Directorate of the company wanted to spread the notion of “organizational culture” to the newcomers. But what is the organizational culture? What actions, what values should the Human Resources Directorate spread among the newcomers? In order to be able to spread the organizational culture among new recruits, the company must be able to define what the company’s organizational culture is. The culture was defined as “work as much as needed to finish your job on time”. According to this culture, the company expects the employees to work hard and finish their jobs on time, even if this requires doing overtime and working until the morning. Can this be considered as culture or part of a culture? Does the company really expect new employees to adopt it as an organizational culture?

The company has vision and mission statements, but does not have a written set of values that can guide new employees. There are some spoken values,

such as “being compatible with processes”, “finishing projects on time and within the budget”. But what do these spoken values mean? The company has a written set of rules, processes and procedures that govern what people should do and how they do their jobs. It is very important to comply with these rules. Also, in order to be able to sign project contracts from the defense industry, a company should prove that it adopts some standards, like AQAP (Allied Quality Assurance Publications) and CMMI (Capability Maturity Model® Integration). Beside this, in a highly competitive environment, the company should finish its projects on time and in order to be profitable, it should finish its projects within budget limitations.

Do the spoken values, “being compatible with processes”, “finishing projects on time and within budget constraints”, form a culture? If they form a culture, what type of culture does the company possess? Does the possessed culture reflect the long term goals of the upper management? Is it suitable for the strategies of the company? What is the preferred organizational culture of the company?

In order to better understand the company, the vision and mission statements are given below. The vision of the company is:

“To be a major player in the world market as a leading Turkish System Integration and Software Development Company”.

The mission statement of the company is:

1. To be an internationally competitive and dependable system integration and software development company.
2. To provide satisfaction to all stakeholders.
3. To contribute to the public by enhancing national capabilities through innovation/creativity and the establishment of a work environment to improve technical competency.

4. To contribute to the Turkish software/system integration industry through development/utilization of new technologies and promotion of compliance to international standards.

Treacy and Wiersema (1995) suggest three different strategies for companies which are: Customer Intimacy, Product Leadership and Operational Excellence. The company chose Product Leadership among the three strategies. Companies that adopt product leadership concentrate on offering products that push performance boundaries (Treacy and Wiersema, 1995). The companies' objective is not the price, but rather the performance of the product. Such companies have to "innovate year after year, product cycle after product cycle" (Treacy and Wiersema, 1995, p.xv).

### **1.3. Purpose of the Research**

The purpose of this research is to make an attempt to establish an innovative organizational culture in the Turkish software company investigated. In order to do this, the perceived current and the preferred organizational cultures of the company will be studied. Also the preferred culture of upper management and the differences between the perceived current and preferred organizational cultures by different employee groups will be investigated. After analyzing the company's current and preferred cultures, a framework that will help to establish an innovative culture will be recommended.

### **1.4. Research Question**

The research question is:

**What actions should be taken in order to establish an innovative culture?**

In order to achieve the aim of this study, the following sub questions will also be answered. The sub questions are:

1. What is the perceived current organizational culture of the company?
2. What is the preferred organizational culture of the employees?
3. What is the preferred organizational culture of upper management?
4. How can an innovative organizational culture be established?

The main question is referenced to McLaughlin (2006) in his doctorate dissertation entitled '*Exploring aspects of organizational culture that facilitate radical product innovation in a small mature company*'. The first two sub questions are referenced to Saele (2007) in his thesis entitled *Linking organizational culture and values with a firm's performance: a case study from the NZ airline industry*.

### **1.5. Outline of the Thesis**

Chapter 1 contains the introduction, an overview of defense industry, and the purpose and background of the research.

Chapter 2 presents a literature review of organizational culture and actions proposed to develop an innovative culture.

Chapter 3 will discuss the methodology used, the organizational culture assessment instrument and present the results of the survey: the current and preferred organizational cultures according to different employee groups. Also answers to the research questions are given in this chapter.

Chapter 4 will contain conclusions and recommendations for further research.

## **CHAPTER**

### **2. LITERATURE REVIEW**

#### **2.1. Introduction**

This chapter provides a literature review on the concepts of organizational culture. Firstly different definitions of organizational culture are given. Then the relationship between organizational culture and climate are investigated. The levels of culture according to different researchers are also presented in the following sections. Different types of culture and the characteristics of an innovative culture are presented as well. The relationship between culture and strategies, culture and leadership, and culture and organizational performance are also investigated. Then a model is introduced which will form the base of this research. Finally, actions that help to develop an innovative culture will be recommended.

#### **2.2. Organizational Culture**

##### **2.2.1. Definitions**

Culture was first defined by anthropologists. From an anthropological point of view, culture represents the qualities of a group that are passed from one generation to the next (Kotter & Heskett, 1992). With the introduction of

organizational culture concept, different definitions of organizational culture have been made. Oden (1997) states that an organizational culture is similar to an individual's personality and defines culture as "the set of shared behaviors, artifacts, values, beliefs, and assumptions that a corporation develops as it learns to cope with the external and internal aspects of survival and success" (p.3). Oden's definition is similar to Schein's (2004) definition of culture since they both state that in order some actions to be regarded as culture, the actions must be proven to lead to success. Schein's (2004) definition of culture is as follows:

A pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems (p.17).

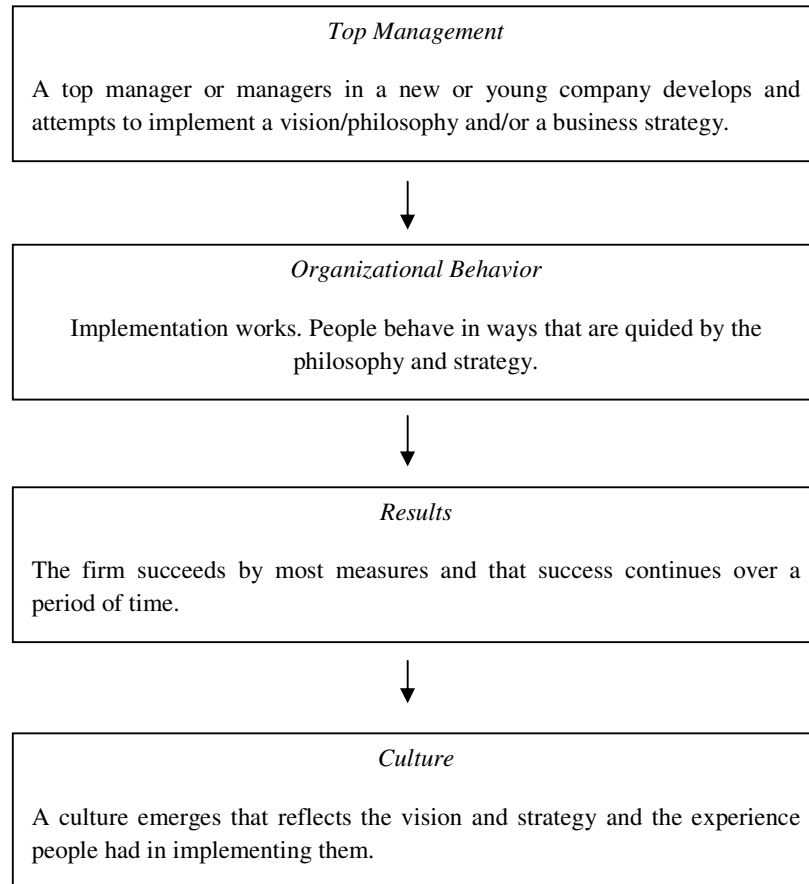
So according to Schein (2004), in order some assumptions to be accepted as culture, they must have shown that they solve problems that an organization faces. Schein (2004) indicates that culture is formed in two ways. In the first way, a culture is formed from the unstructured interaction of a group of people. In the second way, a leader leads the formation of a culture. In this second way, the culture is formed according to this leader's personal vision, goals, beliefs, values, and assumptions.

Denison's (1990) definition of culture is as follows:

The underlying values, beliefs, and principles that serve as a foundation of an organization's management system as well as the set of management practices and behaviors that both exemplify and reinforce those principles. These principles and practices endure because they have meaning for the members of the organization. They represent strategies for survival and have worked well in the past and that the members believe will work again in the future (p.2).

### 2.2.1.1. Emergence of Culture

Kotter and Heskett (1992) define a pattern of how corporate cultures emerge. The pattern is similar to Schein's (2004) definition of culture, as he defines culture as behaviors that have been proven to be successful for survival. The pattern of Kotter and Heskett (1992) is shown in Figure 1.



**Figure 1 One Common Pattern in the Emergence of Corporate Culture**

Source: Kotter and Heskett, 1992, p. 8

### 2.2.2. Climate and Culture

Schneider and Reichers (1990) give a detailed historical background of the research about climate and culture. The concept of climate was first introduced by Lewin, Lippitt and White in 1939 in their article *Patterns of Aggressive Behavior in Experimentally Created 'Social Climates'* that was based on the relationship between leadership style and climate (as cited in Schneider and Reichers, 1990). Schneider and Reichers (1990) argue that climate was seen more like a subject of psychology whereas culture was seen as a subject of anthropology.

Schwartz and Davis (1981) define climate as “a measure of whether people's expectations about what it should be like to work in an organization are being met” (p.33). They define culture as “a pattern of beliefs and expectations shared by the organization's members” (p.33). According to Schwartz and Davis (1981) the difference between climate and culture is that “climate measures whether expectations are being met” whereas “culture is concerned with the nature of these expectations themselves” (p.33). They argue that climate really measures the fit between the values of individuals and the values of the culture. If there is a fit, then the climate is referred as “good”, if they do not fit, then the climate is “poor”.

Denison (1990) points out that the term climate has two different definitions in the literature. The first definition argues that climate refers to a common perception, or a common reaction of individuals to a situation, while the second definition argues that climate should be used to refer to a set of conditions that exists and that has impact on individuals' behavior.

Denison (1990) argues that organizational culture and climate have some characteristics in common. He states the similar characteristics as follows:



1. Both concepts focus on organizational-level behavioral characteristics, and implicitly argue that organizational units are a viable level for the analysis of behavior.
2. Both concepts cover a very wide range of phenomena. Topics range from the deeply held assumptions that form the basis of culture to the actual practices and patterns of behavior that are rooted in those assumptions.
3. Both concepts share a similar problem. They must explain the way in which the behavioral characteristics of a system affect the behavior of individuals, while at the same time explain the way in which the behavior of individuals, over time, creates the characteristics of an organizational system. (p.23-24)

Schneider and Reichers (1990) argue that both climate and culture are used to explain the interaction between the members of an organization and their environment. They point out that climate and culture are both learned through a socialization process. According to the socialization process both concepts try to identify the environment that affects the behavior of people in organizations. Schneider and Reichers (1990) claim that the distinction between climate and culture is that “culture exists at a higher level of abstraction than climate, and climate is a manifestation of culture” (p.29).

James, James and Ashe (1990) in their article *The Meaning of Organizations: The role of Cognition and Values* presented their thesis about climate and organizational culture. According to the authors, the difference between climate and culture is that the first one is a “property of individuals” whereas the second one is “property of the collective” (p.41). The authors state that “climate is a product of personal values and remains a property of individuals irrespective of the empirical level of analysis; whereas culture is engendered by system values and is a property of the collective” (p.41). They suggest that culture is the result of the social

interaction among organizational members, that it is “a product of system values and norms” (p.78), whereas climate is the result of personal values.

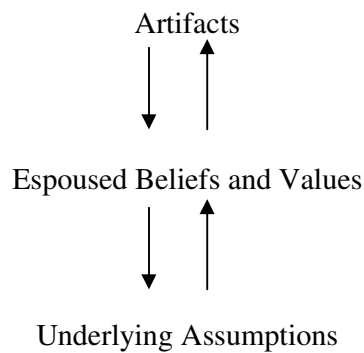
Schein (2000) argues that climate is the “soft” stuff while culture is the “hard” stuff. Schein (2000) tells that “soft” stuff refers to how people feel about the organization, while the “hard” stuff is more related to strategy and structure. He defines climate as a “cultural artifact resulting from espoused values and shared tacit assumptions” (p. xxiv).

### 2.2.3. Levels of Culture

According to Kotter & Heskett (1992), culture is composed of two levels. They claim that these two levels differ in their visibility and resistance to change. The invisible part is composed of shared values that are difficult to change and that persist even if the members of the group change. They define the shared values as the “important concerns and goals that are shared by most of the people in a group, that tend to shape group behavior, and that often persist over time even with changes in group membership” (p.5). The more visible part is the behavioral part, composed of group behavior norms. The definition is given as follows: “common or pervasive ways of acting that are found in a group and that persist because group members tend to behave in ways that teach these practices to new members, rewarding those that fit in and sanctioning those that do not” (p.5). Oden (1997) also defines two levels of culture: the observable level that is composed of behavior and attributes and the hidden level which is composed of values, beliefs, and assumptions.

Schein (2004) adds one more level by adding the “underlying assumptions” to the lowest level. According to Schein culture has three levels. He defines the visible part of the culture as artifacts. Artifacts are “the visible organizational structure and processes” and are “hard to decipher” (Schein,

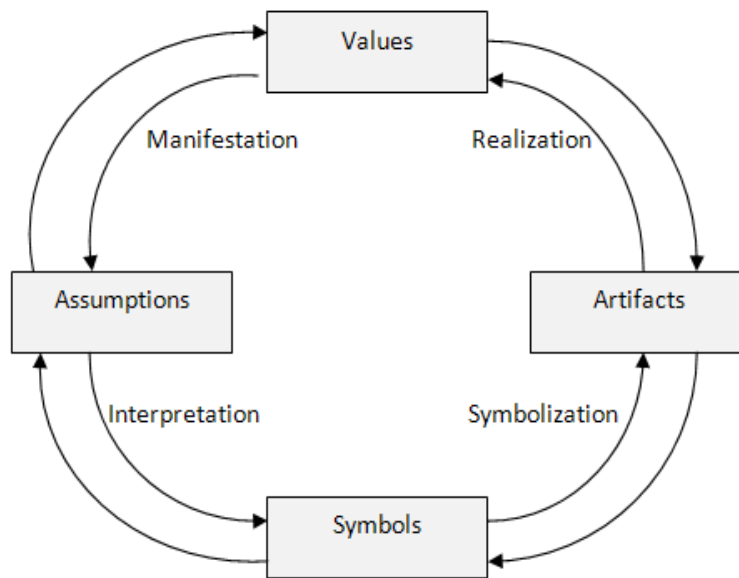
2004, p.26). The level below is composed of espoused beliefs and values. This level is composed of strategies, goals and philosophies of the organizations. Schein (2004) argues that values should be socially validated in order to be shared. By social validation, he points out that values are confirmed only by the shared social experience of a group. The lowest level is composed of underlying assumptions. These assumptions are “unconscious, taken for granted beliefs, perceptions, thoughts and feelings” (p.26). Schein further states that if a continuous success is reached from implementing some beliefs and values, then these beliefs and values become basic assumptions. Schein defines this level of culture as one “Group’s DNA” (p.32). In Figure 2, Schein’s (2004) Levels of Culture are shown (p.26).



**Figure 2 Schein’s Levels of Culture**

Source: Schein, 2004, p. 26

Hatch (1993) proposes one more level since she argues that Schein’s (2004) model leaves symbols and processes out of organizational culture. In her article, she suggests a dynamic model of organizational culture. She proposes one more level to be added to the model. The new level is composed of symbols. She also defines the links among symbols, artifacts, values and assumptions as processes that can operate both forward and backward. Figure 3 shows Hatch’s Cultural Dynamics Model (1993, p.660).



**Figure 3 Hatch's Cultural Dynamics Model**

Source: Hatch, 1993, p. 660

As seen from the figure, Hatch (1993) introduces symbols as a new element to Schein's (2004) model. She argues that the "symbols permit the model to accommodate the influences of both Schein's theory and symbolic interpretive perspectives" (p.660). She identifies the processes of the model by considering how cultural elements are related with each other. She also argues that culture is not a product of a linear process and that cultural dynamics model can be entered in any point in Figure 3. Hatch (1993) identifies the following processes: manifestation, realization, symbolization, and interpretation. She defines two types of manifestation processes: proactive and retroactive. Accordingly she defines the manifestation process as the translation of intangible assumptions into recognizable values. In proactive manifestation, values are formed from the assumptions of people. In retroactive manifestation, the reverse occurs and values also affect the assumptions of people. So, in this case, values can alter existing assumptions. If new values are introduced and success

follows them, then the existing assumptions can be changed (Schein, 2004). However Hatch (1993) also argues that in order for retroactive manifestation to occur, the new values should be very different from the existing ones. If not, then the action of the retroactive manifestation process will result in the reaffirmation of existing assumptions rather than changing them. The realization process has also two types: proactive and retroactive. Proactive realization occurs when values are transformed into tangible artifacts. When defining retroactive manifestation, Hatch (1993) claims that artifacts can affect values. If new artifacts that are not aligned with the cultural values are introduced, then the values are challenged and change in cultural values occurs. She gives the example of new art works (artifact) that challenge the existing and accepted values when they are first introduced. They are first denied, but over time they are seen in new ways, which results in acceptance that leads to change of values. She also defines two types of symbolization: prospective and retrospective. According to Hatch (1993), “symbolization combines an artifact with meaning that reaches beyond and surrounds it” (p.670). Hatch (1993) defines prospective symbolization as “the process by which cultural symbols are made from associations between the literal experience of artifacts and surplus meaning” (p.672). So when people begin to give a meaning to an artifact, meaning other than its literal meaning, prospective symbolization takes place. When artifacts embody the symbols, retrospective symbolization takes place. She defines retrospective symbolization as the process that enhances the awareness of the literal meaning of symbolized artifacts. The last process interpretation also has two forms: retrospective and prospective interpretation. In retrospective interpretation new symbols can become part of the culture, whereas prospective interpretation maintains and challenges basic assumptions, since new symbols can influence assumptions.

#### 2.2.4. Organizational Culture and Effectiveness

Denison (1990), in his book *Corporate Culture and Organizational Effectiveness*, tries to find an answer to the question “What are the ways in which the culture of an organization can influence its effectiveness?” He argues that since organizational culture refers to the underlying values, beliefs, and principles that serve as the foundation for the organization’s management system, then the cultural theory of organizational effectiveness should start by observing those values, beliefs, and principles. Denison’s study showed that there is a close relationship between the organizational culture and the effectiveness of the companies. He defines four hypotheses, each of them defining the relationship between effectiveness and organizational culture. The hypotheses are: involvement, consistency, adaptability, and mission.

1. **Involvement Hypothesis:** *Effectiveness (or lack of it) is a function of the values and beliefs held by the members of the organization.*

The involvement Hypothesis is based on the fact that high levels of involvement and participation create a sense of ownership and responsibility and that this ownership creates a greater commitment to an organization and a lesser need for an overt control system (p.7).

2. **Consistency Hypothesis:** *Effectiveness is a function of the policies and practices used by an organization.*

The consistency Hypothesis emphasizes that a “strong culture” has a positive effect on organizational effectiveness. The hypothesis argues that if members of the organization have a shared system of beliefs, values, and symbols, then this shared system will positively affect the ability of the organizational members to reach consensus and to carry out coordinated actions (Denison, 1990). Companies

exemplifying consistent cultures have highly motivated employees, key central values, a distinctive method of doing business, a tendency to promote from within, and a clear set of “do’s and don’ts”. These characteristics form a strong culture that is well understood by the members of the organization (p.8-9). Denison (1990) argues that a strong culture, with socialized members, improves effectiveness because it facilitates the exchange of information and coordination of behavior (p.9).

Although Involvement and Consistency hypotheses have similar properties, the distinction between them is that they make different predictions about the conditions under which organizations will be effective (Denison, 1990). Denison (1990) argues that the prediction of involvement hypothesis is as follows: inclusion and participation of members of the processes of the organization will outweigh the dissension, inconsistency, and nonconformity associated with a more democratic internal process. On the other hand, the prediction of the consistency hypothesis is that low levels of involvement and participation can be outweighed by high levels of consistency, conformity, and consensus. Denison (1990) also argues that effective organizations combine those two hypotheses: while involvement is used to generate potential ideas and solutions, consistency refines them into a more precise set of principles.

3. **Adaptability Hypothesis:** *Effectiveness is a function of translating the core values and beliefs into policies and practices in a consistent manner.*

The first two hypotheses do not explain the relationship between the organizations and their external environment. The adaptability hypothesis is based on the fact that an organization should have a system of norms and beliefs that can support the capacity of an organization to receive, interpret, and translate signals from its

environment into internal behavioral changes that increase its chances for survival, growth, and development (p.11).

4. **Mission Hypothesis:** *Effectiveness is a function of the interrelation of core values and beliefs, organizational policies and practices, and the business environment of the organization.*

The mission hypothesis is based on the fact that effectiveness is related to the existence of a mission or a shared definition of the function and purpose of an organization and its members (Denison, 1990). Denison (1990) argues that the existence of a mission has two influences on the organizational functioning. The first influence is that the mission provides purpose and meaning, and the second one states that a sense of mission provides clear direction and goals that serve to define the appropriate course of action for the organization and its members (p.13).

Denison (1990) argues that although those four hypotheses suggest four different ways to reach organizational effectiveness, an effective organization should possess all of the four elements. Denison (1990) implies that “a culture that is at the same time adaptive, yet highly consistent, or responsive to individual involvement, but within the context of a strong shared mission, will be most effective” (p.15). Denison’s argument is in alignment with Cameron and Quinn’s (1999) competing values framework argument which claims that the four cultural types should be in balance in order to be most effective.

#### 2.2.5. Types of Cultures

Cameron and Quinn (1999) define four types of culture based on Competing Values Framework. The Competing Values Framework’s origin is based on a study conducted to determine the indicators of an effective



organization. The study performed by John Campbell and his colleagues (1974) resulted in thirty-nine indicators for an effective organization. Bob Quinn and John Rohrbaugh (1983) studied those indicators and found two major dimensions that affected organizational effectiveness. The two dimensions divide the thirty-nine indicators into four clusters (as cited in Cameron and Quinn, 1999). One of the dimensions differentiates the effectiveness of organizations according to their flexibility and dynamism or stability, order and control. While some organizations are seen as effective when they are flexible and adaptable to change, others are seen as effective when they are stable. The second dimension differentiates the effectiveness of organizations according to their internal or external orientation. According to this dimension, some organizations are viewed as effective if they focus on their internal processes, while others are seen as effective if they focus on competing with others (Cameron and Quinn, 1999). These two dimensions form four different sets of organizational effectiveness criteria (Cameron and Quinn, 1999). These four sets form four distinct set of core values that represent four different types of organizational culture: clan, adhocracy, hierarchy, and market.

### 1. Clan Culture

The dimensions that form the clan culture are internal focus and orientation and flexibility and discretion. An organization with the Clan culture is a family-type organization. Shared values, employee empowerment, teamwork, employee development are typical characteristics of a clan type organization. In a clan type organization people are not awarded based on their individual performance but on the accomplishments of the team. Clan type organizations are friendly places to work and they are like an extended family. What hold the organization together are loyalty and trust. Internal climate and concern for people are the success factors of a clan type organization (Cameron & Quinn, 1999).

## 2. Adhocracy Culture

The dimensions of the adhocracy culture are external focus and differentiation and flexibility and discretion. The adhocracy culture is based on the assumption that innovativeness and first moves lead to success. Especially in the twenty-first century, when everything is changing so fast, it is important to be flexible and to be adaptable in order to stay competitive. Adhocracy comes from the form “ad hoc” whose meaning is a temporary, specialized, dynamic unit (Cameron & Quinn, 1999). Creativity, entrepreneurship, and innovation are the most important aspects of this culture. Organizations with an adhocracy culture are decentralized. Individuality and risk taking are common characteristics. An adhocracy culture can exist as a subculture in larger organizations. The commitment to innovation holds the company together. Organizations with an adhocracy culture see success as producing unique and original product and services (Cameron & Quinn, 1999).

## 3. Hierarchy Culture

The dimensions of the hierarchy culture are internal focus and orientation and stability and control. A hierarchy culture forms a formalized and structured place to work. The Glue that holds the company together are formal rules and policies. Success is seen in control, predictability, and stability. The long run concern of organizations with a hierarchy culture is efficiency. The leadership style in these organizations is coordinating, monitoring, and organizing (Cameron & Quinn, 1999).

#### 4. Market Culture

The dimensions of the market culture are external focus and differentiation and stability and control. The market term does not refer to the marketing function of organizations, but rather it refers to an organization that behaves like a market itself (Cameron & Quinn, 1999). The major focus of organizations with market culture is to perform transactions with different stakeholders to create competitive advantage. Competitiveness and productivity are the two important aspects of a market-type organization. An organization with a market culture can be seen as a result-oriented workplace, leaders are competitive and the most important thing that holds the company together is winning. Organizations are seen as successful if they increase their market share (Cameron & Quinn, 1999).

##### 2.2.6. Innovative Culture

Oden (1997) gives definitions for the terms, innovation, new product development, venture and intrapreneur in his book *Managing Corporate Culture, Innovation, and Intrapreneurship*. He defines innovation as the “development of something new from its earliest beginning to its ultimate completion” (p.1). “Development of a product, good or service, from its initial idea until it becomes a commercial product available for market use” is the definition for new product development (p.1). A venture is a “new product development project”, “a product, market or process development project that goes all the way from the initial idea to commercial product, market, or process” (p.1). Oden (1997) defines intrapreneur as someone who “is involved in the venturing process, who develops a new business inside a corporation from its initial idea until it becomes a viable business” (p.1). According to Oden, the difference between entrepreneurship and

intrapreneurship is that entrepreneurship develops new business outside the existing business, while intrapreneurship develops it inside.

Oden (1997) argues that innovation is a product of knowledge and empowerment. In a culture in which open communication is emphasized, where employees reach information easily and are empowered, innovation can become part of the culture. Oden (1997) defines some significant characteristics of an innovative culture. The characteristics are as follows (p.5-7):

1. Far-sighted high-level strategic and cultural leadership
2. Emphasis on innovation, intrapreneurship, and achievement
3. Strong customer focus
4. Emphasis on total quality management
5. Flexible and adaptable organizations
6. High-level collaboration, teamwork, and trust
7. Participative management style and employee empowerment
8. Emphasis on human resources
9. Continuous learning, change, and improvement
10. Effective information, communication and decision-making Systems
11. Emphasis on process management
12. Emphasis on corporate venturing process

Corporate venturing process is the cross-functional process that is the most important process in an innovative company. Corporate venturing process is composed of six stages:

- a. Idea generation
- b. Concept evaluation
- c. Prototype design and review
- d. Prototype build and test
- e. Final product design and pilot production
- f. New business development

Every stage is evaluated by management, and a decision is given, whether to continue or stop.

### **2.3. Culture and Strategies**

Kotter and Heskett (1992) argue that culture and strategy have some characteristics in common, since both of them shape people's behavior. But they also point out that culture is not the same as a firm's strategy. According to Kotter (1990) strategy is simply the logic for how to achieve movement in some direction. He argues that the beliefs and practices of the strategy may be compatible with the firm's culture or may not. Strategy will not be able to be implemented successfully if the behavior patterns of the strategy are not compatible with the culture. Kotter and Heskett (1992) also point out that aligned strategic behavior patterns and culture do not imply that those patterns are part of the culture. They become part of the culture when group members encourage new members to follow the behavior patterns.

Corporate strategies and corporate culture should be in alignment in order organizations to be successful (Murat and Açıköz, 2007). Corporate strategy is adopted by employees if only there is congruence between culture and strategy. Otherwise, culture becomes an obstacle for change (Fernández, 2003).

### **2.4. Culture and Leadership**

Leadership is an important aspect of culture. In order to build a culture or change an existing culture, a strong leadership is required. But why is leadership and not management required? In order to answer this question, the difference between management and leadership should be discussed.

Kotter (1998) argues that management and leadership are two distinct but complementary systems of action. For a successful organization, both a strong leadership and management should exist. According to him the difference between management and leadership is that management copes with complexity while leadership copes with change. He also points out three functions that shape the activities of management and leadership.

1. Management is about setting targets or goals for the future by *planning and budgeting*. Leadership is about developing a vision of the future by *setting a direction*.
2. Management develops the capacity to achieve its plans by *organizing and staffing*. Leadership's action is *aligning people*, communicating the new direction to those who understand the vision.
3. Management ensures plan accomplishments by *controlling and problem solving*, by monitoring the results versus the plan, identifying deviations and by planning and organizing to solve the problems. Leadership ensures accomplishment of the vision by *motivating and inspiring*, by keeping people in the right direction.

Schein (2004) also distinguishes leadership from management from a cultural perspective. According to him, leadership creates and changes cultures, while management acts within a culture. He argues that culture and leadership are two sides of the same coin. Leaders are the ones that create and manage culture. Schein (2004) points out that although leadership is an important factor in creating a culture, it is not the only factor that forms a culture, but rather culture is the result of a complex group learning process and that leadership has a partial role in this process. Only if the assumptions of the leader lead to a shared experience that solves the group's problems, then culture arises from those assumptions. Schein

(2004) argues that the relationship between culture and leadership inevitably exists in the case when culture begins to threaten the survival of the firm. In this case, leadership has an important role in order to recognize and do something about the situation.

## **2.5. Culture and Performance**

Much research has been conducted in order to prove that there is a relationship between the performance of organizations and their corporate culture. The idea behind such research was the belief that the performance of organizations is attributable to organizational culture (Wilderom, Glunk, and Maslowski, 2000).

Kotter and Heskett (1992) conducted four studies between 1987 and 1991 in order to determine if there is a relationship between corporate culture and long-term economic performance. The first two studies tried to find an answer to the question: “What kind of corporate cultures enhance long-term economic performance?” The first study tested the relationship between a strong corporate culture and the firms’ long-term economic performance. The second study tested the relationship between long-term economic performance and strategically appropriate cultures and adaptive cultures. In the third, study Kotter and Heskett (1992) examined firms that had cultures that hurt their economic performance. In their last study they examined firms that changed their corporate cultures resulting in an increase of economic performance.

In their first study, Kotter and Heskett (1992) they found that there is a weak positive relationship between corporate culture and long-term economic performance. They found firms with strong corporate cultures could show poor economic performance, and also firms with weak corporate cultures could show strong economic performance. When Kotter

and Heskett (1992) examined the firms with strong corporate cultures but with weak economic performance, they saw that these firms had cultures that hurt their economic performance. They concluded that strong cultures can lead the firms to success but also to failure. If the strong culture becomes arrogant, inwardly focused, politicized and bureaucratic, if it blinds top management to the need for new business strategies, then a strong culture can hurt the firm's economic performance. They also examined the firms with weak cultures that performed economically well. They saw that those firms operated well because of their monopolistic market positions and the relative autonomy that the weak corporate culture allowed.

In their second study, Kotter and Heskett (1992) investigated whether strategically appropriate cultures and adaptive cultures have a positive relationship with a firm's long-term economic performance. According to the second theory they studied, not all strong cultures result in long-term economic performance, but cultures that are strategically appropriate can result in good performance. In this second theory, the content of the culture, the values and beliefs it possesses, are important for a firm's performance and not its strength. The culture should fit the environment in which the firm operates in order for the firm to be successful. The firms Kotter and Heskett (1992) studied had cultures of equal strength but different economic performance. The study showed that firms with better performance thought that their culture is aligned with their strategies and their environment. The result for the companies with low performance showed that they did not think that their culture was strategically aligned with their environment. Critics of this theory exist, who argue that the environment in which the firm operates can change, and the existing culture can harm the performance of the firm. From these criticisms a third perspective has emerged which argues that in order for firms to sustain long term performance, they should have cultures that help them adapt to environmental changes. This theory formed the second part of the second



study of Kotter and Heskett (1992). In order a company to be adaptive, Kotter (1990) points out that the company should strongly care about all its key constituencies: customers, stakeholders, and employees. The study performed by Kotter and Heskett (1992) showed that there is a link between firms' economic performance and their adaptive cultures.

In the third study, Kotter and Heskett (1992) studied the nature of low performance cultures. They found three similar characteristics of the low performers.

1. Managers were arrogant. This was the result of sustained success over the past years.
2. Managers did not value customers, and stakeholders and employees.
3. Cultures became hostile to values such as leadership or other engines of change. Those firms had managerial orientations that values stability and control. Managers tend to discourage initiative and innovation. They behave in centralized/bureaucratic ways.

The firms Kotter and Heskett (1992) examined were once seen as successful firms, but they could not maintain their economic performance. They argue that in order to prevent such transformation, firms should establish cultures that have adaptive values at their core. They show Hewlett-Packard as an example that did not result in a problematic culture. The reason behind this success was that the founders of the company created a performance-enhancing culture early in the company's life, and they explicitly reinforced the adaptive core of that culture. Kotter and Heskett (1992) point out that Hewlett-Packard displayed great concern for all the constituencies of the company and that encouraged leadership and not management.

As a summary, the studies by Kotter and Heskett (1992) showed the following results:

1. Corporate culture can have a significant impact on a firm's long-term performance.
2. Corporate culture will probably be an even more important factor in determining the success or failure of the firms in the next decade.
3. Corporate cultures that inhibit strong long-term financial performance are not rare; they develop easily, even in firms that are full of reasonable and intelligent people.
4. Although tough to change, corporate cultures can be made more performance enhancing.

Siehl and Martin (1990) questioned if organizational culture is a key to financial performance. They argued that the link between corporate culture and financial performance is hard to empirically prove. They pointed out that the studies that tried to prove a link between corporate culture and financial performance were empirically inconclusive. They looked at the studies that tested the three different versions of culture-performance relationships: the direct culture-performance link, the direct performance-culture link and contingency studies of the direct culture-performance link. The first link argues that in order a company to be financially successful, it must have a strong culture. After examining the studies that tried to prove the first relationship, they concluded that this relationship has very limited empirical support. The main reason for this conclusion is that, there were methodological shortcomings in the sampling procedures, sample sizes, and the measurement of culture and/or performance of the studies. They also found the same result for the second and third versions of the culture-performance relationship. Siehl and Martin (1990) also argue that focusing on a link between culture and financial performance can be problematic. They fear that if we use culture only as one of the determinants of performance, we may lose the full potential of studying culture itself.

Wilderom, Glunk and Maslowski (2000) also questioned the relationship between organizational culture and performance. They studied the empirical studies which were trying to prove the link between organizational culture and performance and they concluded that the studies do not provide sufficient evidence that organizational culture predicts organizational performance. Wilderom, Glunk and Maslowski (2000) proposed new critical conditions under which a new research should be conducted in order to test the linkage between organizational culture and performance.

## **2.6. Lewin's Model for Organizational Change**

Goodstein and Burke (1991) define three levels for organizational change.

The levels are as follows:

1. Changing the *individuals* who work in the organization: changing employees' behaviors by changing their skills, values, attitudes.
2. Changing various organizational *structures and systems*, for example reward systems, reporting relationships, work design, and so on.
3. Directly changing the organizational *climate or interpersonal style*, how open people are with each other, how conflict is managed, how decisions are made, and so on. (p.10).

Lewin (1958) proposes a three step model in order to implement the change in an organization. In order to manage the resistance to change in the current environment the first step is to *unfreeze* the present state of the organization, the patterns of behaviors. Unfreezing can occur in any level of the organizational change: individual, systems, or climate. According to Lewin, the current system should be unblocked in order to eliminate the

resistance to change that may occur in the organization's members. The main idea is to open the members of the organization to the change. After the first step, the second step called *movement* should be implemented. Movement involves the changes that will move the organization to another level of response. Movement also occurs at the three levels of organizational change. The final step is the *refreezing* step. This step involves stabilizing the changes in the previous step in order to make the behavioral patterns hard to change (as cited in Goodstein and Burke, 1991).

Goodstein and Burke (1991) analyzed Lewin's model in British Airways change efforts during 1982-1987. British Airways underwent a massive cultural change when the ownership was changed from government to private ownership. The culture of British Airways changed from "bureaucratic and militaristic" to "service-oriented and market-driven". The change was successful. Table 1 shows British Airways's change efforts in terms of Lewin's model as analyzed by Goodstein and Burke (1991, p. 11).

**Table 1 Change Efforts of British Airways in terms of Lewin's model**

<b>Levels</b>	<b>Unfreezing</b>	<b>Movement</b>	<b>Refreezing</b>
Individual	Downsizing of workforce (59,000 to 37,000); middle management especially hard-hit. New top management team. "Putting People First."	Acceptance of concept of "emotional labor". Personnel staff as internal consultants. "Managing People First." Peer support groups.	Continued commitment of top management. Promotion of staff with new BA values. "Top Flight Academies." "Open Learning" programs.
Structures and System	Use of diagonal task forces to plan change. Reduction in levels of hierarchy. Modification of budgeting process.	Profit sharing (3 weeks' pay in 1987). Opening of Terminal 4. Purchase of Chartridge as training center. New, "user friendly" MIS.	New performance appraisal system based on both behavior and performance. Performance-based compensation system. Continued use of task forces.
Climate / interpersonal style	Redefinition of the business: <i>service</i> , not <i>transportation</i> . Top management commitment and involvement.	Greater emphasis on open communications. Data feedback on work-unit climate. Off-site, team-building meetings.	New uniforms. New coat of arms. Development and use of cabin-crew teams. Continued use of data-based feedback on climate and management practices.

Source: Goodstein and Burke, 1991, p. 11

## **2.7. Developing an Innovative Culture**

This part consists of a literature review of actions that can be planned in order to establish a culture that will promote innovation and creativity.

Cameron and Quinn (2006) provide suggestions about how to initiate an adhocracy culture. Cameron and Quinn's innovative culture is called adhocracy. Adhocracy is based on innovation. The authors suggest not trying all the initiatives at once, but trying a few powerful hints. Cameron and Quinn suggest establishing a more flexible organizational structure rather than a hierarchical one. They emphasize the importance of increasing the company's knowledge about continuous improvement, organizational learning, process improvement, and organizational reengineering. Cameron and Quinn (2006) point the importance of rewards when trying to improve innovation and creativity in the organization. They also state the importance of training and they suggest that the company should provide an extensive training program on creative thinking. Cameron and Quinn (2006) also state that people that come up with successful creative ideas should be rewarded and these rewards should be visible to everybody. They suggest that management should focus on managing the future rather than managing the present state of the company.

Cameron and Quinn (2006) also provide hints about how to improve management competency in order to manage innovation. They state that job descriptions shall be modified to contain production of innovative ideas. They also points out the importance of idea-sharing events where employees can exchange and discuss their ideas. Cameron and Quinn (2006) also stress the importance of action learning, that employees should be able to learn not only from their successes but also from their failures. The importance of rewarding not only big innovative ideas but also small, incremental ideas is also emphasized.

Cameron and Quinn (2006) also stress the importance of continuous improvement. They state that continuous improvement should become employees' responsibility. Employees should be rewarded for improvement, and not only for doing their jobs right. A proper working suggestion system is also recommended by Cameron and Quinn. They point out that suggestions should be evaluated and employees should be informed about the results.

Geis (1988) proposes a model about components of organizational creativity based on the model by Amabile (1983). Geis (1988) modifies Amabile' model (1983) by adding a fourth component. The components of Amabile (1983) are domain-relevant skills, creativity-relevant skills, and task motivation (as cited in Geis, 1988). Geis (1988) adds organizational commitment as the fourth component to the model. Geis (1988) argues that even though all the three components are present, a fourth one, the commitment of the employee to the company, is also essential. He points out that organizational commitment is the reason why employees show creative effort in order to achieve organizational goals. He also lists some suggestions in order to increase innovation like empowering employees, proper reward systems that give more importance to intrinsic motivation rather than financial rewards. Geis (1988) also stresses the importance of the recruitment of employees with creative potential and stresses out that employees should be trained in order to enhance their creativity.

Lehr (1988) also points out to the importance of reward systems when encouraging innovations. He points out that different promotional steps should be established in order to encourage innovation. Lehr argues that there should be two different career paths, one for managers and one for technical personnel who do not want to become managers but whose main concern is to continue to do the best they do. The career paths should be equivalent, both in compensation and status. Reward in the managerial career path will be tied to the ability to manage others, while in the technical career path; a promotion will be done when a successful

innovation occurs (Lehr, 1988). He also recommends companies to provide free time to their employees so that they can use this time to work on ideas and projects on their own. He emphasizes that this time should be guaranteed for the employees and states how they encouraged their technical personnel in 3M to spend 15 percent of their times on projects that they chose to work on their own. Another thing that is important to encourage innovation is communication (Lehr, 1988). Communication should exist among technical staff as well as among all functions, from operations to production and marketing functions. He suggests establishing a Technical Forum where people can exchange ideas about different topics. He also suggests that recognizing employees is an important incentive for innovation. Employees should be recognized not only on big successes but also in very small improvements. One other important point is to accept mistakes; employees should not be blamed when they fail. But Lehr (1988) also points out that mistakes should be original and the same mistake should occur only once. He also mentions that challenging employees is an important aspect of encouraging innovation. Aggressive goals like a percent of sales should come from new products, challenges employees and directs them to innovation. Lehr (1988) also stresses the importance of top management's commitment to innovation; he points out that without top management's commitment actions taken to encourage innovation will not reach their goal.

Weis (1988) lists four steps required for innovation (p.232):

1. Top management commitment and involvement.
2. Separate management of innovation from management of established business.
3. Reinforce and deliver.
4. Install innovation management principles.

Weis (1988) explains that top management commitment and involvement is important because senior management will provide the mission and the



required resources for innovation. Management of established business and innovation should be different; there should be different rules and policies. He recommends that intrapreneurs should be separated from existing businesses. In the third step, Weis (1988) stresses the importance of rewarding and recognizing successful innovators, creating “legends” by rewarding those innovators and also tolerating failures. In the fourth step, Weis (1988) points out that bureaucracy should be minimized and communication between marketing and technical people should be increased. Weis (1988) also mentions the importance of dual compensation systems, one for intrapreneurs and one for employees who work on existing businesses.

Raudsepp (1988) provides a checklist of 101 items in order to create a creative environment. He states the importance of communication between management and employees. He also states that employees should be able to reach information easily. He stresses the importance of providing a safe working environment where failures are tolerated. He points out that creativity related skills should be emphasized in performance appraisal forms. Raudsepp (1988) also stresses the importance of empowering employees.

Cyert (1988) lists four variables that can help an organization to become more innovative. The variables are: goal structure, attention focus, reward systems, and upward communication. He points out that innovation should be a major objective in the goal structure. The second variable, attention focus, is related to the things that personnel is thinking or speaking about. He argues that activities affecting attention focus also affects the behaviors, since attention focus is closely related to the behaviors. According to Cyert (1988), attention focus is the most important variable, since it can be used to design a set of actions that can lead the company to innovation. Cyert (1988) points out that the president of the company has an important role in changing the attention focus of the organization. He says that, the president

should stress the importance of innovation in formal and informal meetings; he should be receptive and open minded to new ideas, and be careful not to judge the new ideas presented by the employees. Furthermore, the president must make sure that actions are taken for the new ideas. Cyert (1988) states that the third variable, the reward system, is a well known variable, but he also notes that only one variable cannot lead an organization in the preferred direction. He stresses the importance of rewards being directly related with innovation and creativity. He argues that if rewards are not given according to the desired outcomes, then they would not have any positive affect but rather damage the organization's efforts to become innovative. The fourth variable, Cyert (1988) mentions, is upward communication, which stresses the importance of the ability of employees to speak to the president. Cyert (1988) points out that the president should start the communication by going out to the departments and talking to employees.

As a summary, there are similar items that are emphasized by different people in order to make an organization innovative. They are top management support, suitable reward systems and recognition, open communication: between management and employees and among different divisions, decentralized organizations, and no fear from failure.

## CHAPTER

### 3. EMPIRICAL RESULTS

#### 3.1. Introduction

The purpose of this research is to establish an innovative organizational culture in a Turkish software company. In order to do this, we should assess the perceived current and the preferred cultures in the organization. Also the preferred culture of upper management and the differences between the perceived current and preferred organizational cultures by different employee groups will be studied. After analyzing the company's current and preferred cultures, a framework that will help to establish an innovative culture will be proposed. This part of the paper will give information about the methodology used for assessing and establishing the culture and then answering the research questions.

As indicated previously, this research tries to answer the following main research question:

**What actions should be taken in order to establish an innovative culture?**

The sub questions that will help to give an answer to the main research question are:

1. What is the perceived current organizational culture of the company?

2. What is the preferred organizational culture of the employees?
3. What is the preferred organizational culture of upper management?
4. How can an innovative organizational culture be established?

Alongside these questions, we will also test the following perceptions of management:

1. The perceived current organizational culture of the company is ADHOCRACY.
2. The preferred organizational culture of engineers is ADHOCRACY.

The perceptions were suggested by General Manager of the company, since he argued that ADHOCRACY culture is the preferred culture among engineers. During our study we will try to get answers to our questions and find if the hypotheses are true or not.

### **3.2. Research Methodology**

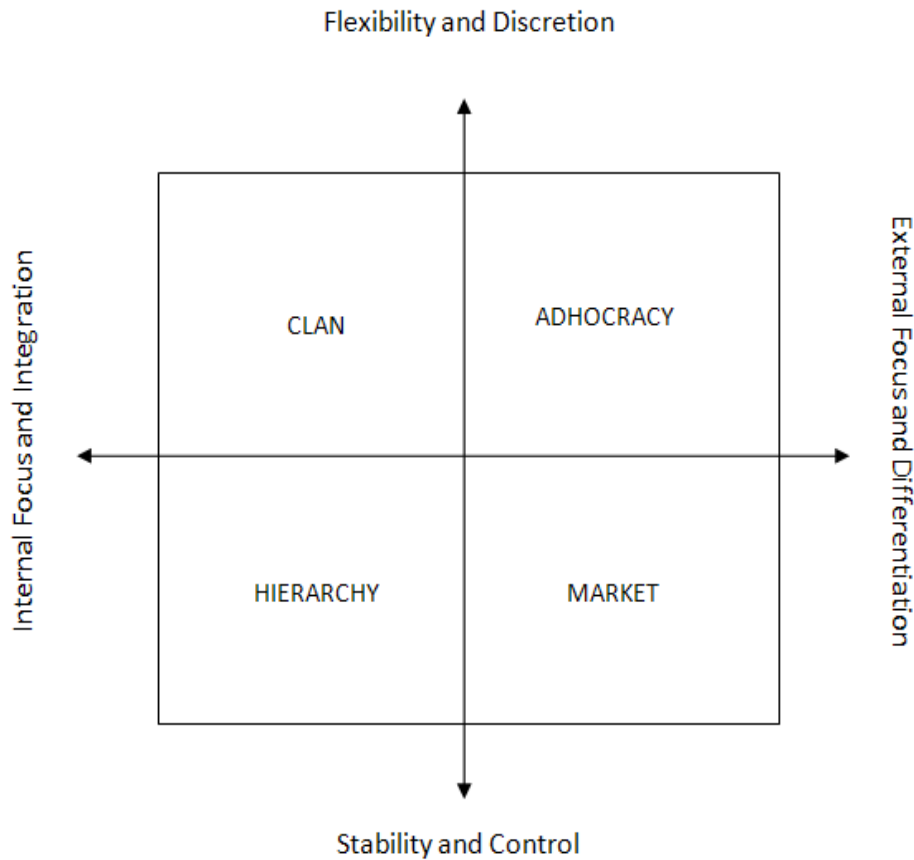
Cameron and Quinn's (1999) Organizational Culture Assessment Instrument (OCAI) was used in order to diagnose the organizational culture of the company. The instrument is composed of six questions, mainly characterizing the six dimensions of organizational culture: dominant characteristics, organizational leadership, management of employees, organizational clue, strategic emphasis, and criteria of success (Cameron and Quinn, 1999). The instrument is completed twice by the employees. The first time the employees complete the form, they are asked to think about the current situation of the company and rate the company as they see it. The second time, they are asked to think about how they want to see the organization after five years, and rate the company as they would like to see it. The questionnaire is given in APPENDIX A. Every question has four alternative answers. Employees shall divide 100 points among the four alternatives. The higher points should be given to the alternative that best suits their opinion.

Lewin's (1958) model for organizational change will be used in order to establish an innovative culture. The actions that will promote innovation and creativity in the organization will be taken from the literature and the most appropriate ones for the organization will be put into the model.

### 3.2.1. Competing Values Framework

The Organizational Culture Assessment Instrument (OCAI) is based on the Competing Values Framework. The Competing Values Framework was developed based on a research about indicators of an effective organization (Cameron and Quinn, 1999). A list of thirty-nine indicators that show the effectiveness of an organization was developed by Campbell and his colleagues (1974). The thirty-nine indicators were studied and analyzed by Bob Quinn and John Rohrbaugh (1983) and two main dimensions that affect organizational effectiveness were determined. These two dimensions form four different organizational culture types. The first dimension determines the effectiveness of the organization according to flexibility or stability. Some organizations are viewed as effective if they are adaptable to changes, whereas others are viewed as effective if they are stable and predictable (Cameron and Quinn, 1999). The second dimension determines the organizational effectiveness according to the internal or external orientation of the organization. According to this dimension, some organizations are viewed as effective if they focus on their internal processes, while others are seen as effective if they focus on competing with others (Cameron and Quinn, 1999). These two dimensions form four sets of indicators that represent four distinct types of organizational cultures. These organizational cultures are named as Clan, Adhocracy, Hierarchy and Market Cultures. See Figure 4 for the representation. The four alternatives in the questions that form the Organizational Culture

Assessment Instrument (OCAI) represent each of these organizational cultures.



**Figure 4 The Competing Values Framework**

Source: Cameron and Quinn, 1999, p. 32

### 3.2.2. Reliability and Validity of the Organizational Culture Assessment Instrument

Cameron and Quinn (1999) argue that if the Organizational Culture Assessment Instrument (OCAI) measures culture types consistently then we can say that it is reliable. The reliability of OCAI has been tested by different researchers such as Quinn and Spreitzer, 1991; Yeung, Brockbank

and Ulrich, 1991; and Zammuto and Krakower, 1991. Cameron and Quinn (1999) argue that those studies provide sufficient evidence regarding the reliability of this instrument.

According to Cameron and Quinn (1999), if we actually measure what is supposed to be measured then we can talk about validity. In other words, does this instrument actually measure the four types of organizational culture: adhocracy, clan, hierarchy and market? The studies of Cameron and Freeman (1991), Quinn and Spreitzer (1991) and Zammuto and Krakower (1991) showed the validity of this instrument. No research was found that showed any contradictory results about the validity of this instrument.

According to Cameron and Quinn (1999, p.139-145), OCAI measures what it is supposed to measure and it measures in a reliable way.

The instrument was translated to Turkish as given in Appendix A. The respondents were able to see both the original questionnaire and the translated version. The translation was checked by different people but no back translation was performed. The translation may have resulted in loss of reliability and validity. Reliability of a questionnaire can be evaluated using Cronbach's Alpha. Reliabilities between 0,5 and 0,8 are acceptable and reliabilities of 0,7 are preferable. Cronbach's alpha was computed for each of the four culture types using Minitab. Cronbach's alpha for the clan culture type was 0,77. The coefficient for adhocracy culture type was 0,69. The coefficient for market and hierarchy culture types was 0,79 and 0,78 respectively. The results show that the instrument used in the research is reliable.

The validity of the instrument was not tested for this research. The previous researches about the validity of OCAI are taken into consideration.

### 3.2.3. Modification in Lewin's Model for Organizational Change

Lewin (1958) proposes a three-step model in order to implement the change in an organization. The three steps are:

1. Unfreezing
2. Movement
3. Refreezing

The modification that will be performed in this model is to remove the first step, *unfreezing*, from the model. The new model will be composed of two steps: *movement* and *refreezing*. The purpose of the unfreezing step is to eliminate the resistance to change. The step is removed because it is believed that there will be little resistance when trying to establish an innovative culture. The second perception of the study, that the preferred organizational culture of engineers is ADHOCRACY, supports the claim. Innovation is an important aspect of the ADHOCRACY culture. According to Cameron and Quinn (1999), innovation is what holds the company together and leads to success. The aim of this research is to establish an innovative culture, thus an adhocracy culture, in the Turkish software company. Lewin's model (1958) is prepared for companies that go through an enormous change due to changes in their external environments, and they do not have any other option except to change themselves in order to survive (as cited in Goodstein and Burke, 1991). Goodstein and Burke (1991) argue that organizations change because of the pressure of the external factors, not because of "internal desire" (p.5). In this case study, the organization like all other organization faces external pressure. But in our case, the desire for change is not because of external pressure, but rather the company wants to determine and establish a culture that it thinks is suitable to its strategies and long-term goals. So the need for the first step is eliminated from the model, since the desire for change is internal and does not occur because of the external pressures the company faces.



Another reason why the first step is removed from the model is employees' related suggestions they make in their performance evaluation forms. In the company performance appraisals are performed once in a year. During these performance appraisals the employees are evaluated according to their last year performance. But during these appraisals employees also have the chance to evaluate the company, their teams and projects. In their performance evaluation forms, employees are asked to write the unfavorable events they observe in the company and also they are encouraged to make suggestions about what they want to change in the company if they had authority. These parts are collected by Human Resources Directorate and grouped in order to be able to manage them and solve them. In this part of the performance evaluation forms, employees make many different suggestions mainly about working environment, food, social organizations made in the company, strategies of the firm, lack of communication in the firm, lack of trainings and so on. In this part of the performance evaluation forms, employees mainly complain about the lack of communication inside the company and among different projects. Communication is one of the important factors that increase innovation in a company. Another concern is that, employees do not have time to increase their knowledge and gain a different perspective of thinking. Employees also suggest that the company should support employees to attend seminars and conferences about different technical areas and not only trainings about a specific business area. One of the employees also points out that the company was more responsive in the past but nowadays it is harder to even get very simple ideas to be taken into account and be evaluated. The employee points out to the fact that this can affect the company in a negative way. One of the employees suggests that engineers should be able to spend 20% of their time for whatever technical topic they like. The employees' suggestions are in line with the suggestions of different researchers about increasing the innovativeness in companies. So it is believed that there will be no resistance to change when trying to establish and innovative culture.

The modified Lewin's model of organizational change will be used in order to answer the forth research question of this paper: How an innovative organizational culture can be established?

### **3.3. Research Process**

The questionnaire was transferred to an Excel spreadsheet so that the data collection would be easier and results would be easily transferred to the digital environment. The questionnaire was distributed via e-mail to employees. The employees filled the questionnaire twice to express how they see the company in the current state, and how they want to see the company in the future. After filling the questionnaire they sent the files to the Human Resources Department. The results were transferred to the digital environment for analysis. For every employee, the cultural profile was established after calculating the average for the four alternatives. The overall company profile was calculated by taking the average of all the respondents' answers. Then the overall company profile was transferred to a graph in the Excel spreadsheet. Also analyses were made for different employee groups and different employment years. The cultural profiles of both current and preferred cultures were established. When analysis is made for two employee groups like management and non-management, the total respondents are separated into two groups. So, the same respondent can be in non-management group and also in the engineering group.

#### **3.3.1. Demographic Data**

There are a total of 230 employees in the organization, 114 of which responded to the questionnaire. 15 of the employees were not able to respond to the questionnaire, mainly because they were on leave or they do

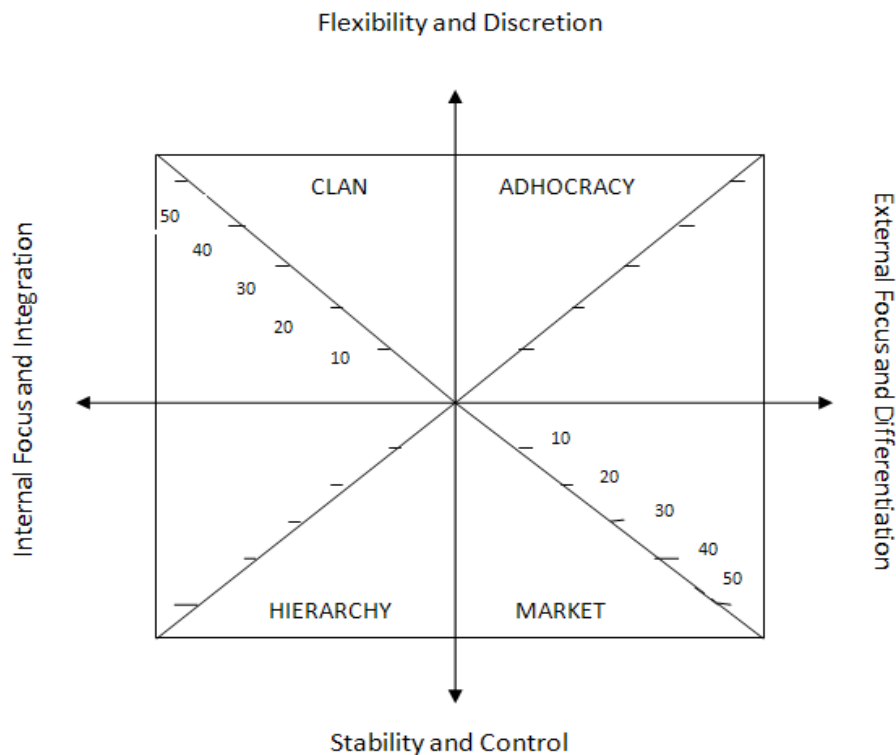
not have e-mail addresses. The average age of the respondents is 31,5 while the average age of the non-respondents is 31,3. According to the one way ANOVA, there is not a statistical difference between the means of the ages of the two different groups with a P value of 0,841 and with a confidence level of 95%.

29% of the employees are female. 45% (28 females) of the females responded to the questionnaire, while the others (34 females) did not. 71% of the employees are male. 56% (86 males) of the males responded to the questionnaire, while the others (67 males) did not. 71% of employees are engineers 54% (84 engineers) of engineers responded to the questionnaire while 50% (30 employees) of non-engineers responded the questionnaire. 33% of employees have managerial positions. 53% (38 managers) of them responded while 53% (76 employees) of employees with non-managerial positions responded to the questionnaire. 81% of employees have a length of service of less than 4 years. 52% (91 employees) of them responded while 57% (23 employees) of employees with a length of service of more than 4 years responded to the questionnaire.

### 3.3.2. Plotting the Graph

Every question has four alternatives: A, B, C and D. Each of the alternatives represents a culture type. A stands for CLAN, B stands for ADHOCRACY, C stands for MARKET and D stands for HIERARCHY. When plotting the graph, the average score for each alternative is calculated. To calculate the average score of A alternative, all A responses are added together and divided by 6. The same is performed for other three alternatives as well. As a result four scores for each alternative are calculated. These average scores are used when plotting the graph. The score of alternative A, which represents the CLAN culture, is plotted on the diagonal line extending upward in the top left quadrant in the plot. The

score of B alternative, representing the ADHOCRACY culture, is plotted on the diagonal line extending upward in the top right quadrant in the plot. The score of C alternative, representing the MARKET culture, is plotted on the diagonal line extending downward in the bottom right quadrant in the plot. The score of D alternative, representing the HIERARCHY culture, is plotted on the diagonal line extending downward in the bottom left quadrant in the plot. Then the points in each quadrant are connected to form a four-sided figure. Plotting the scores on the graph is more helpful to see the culture profile of the company, rather than the scores themselves. You can easily visualize the cultural profile of the company by looking at the graph. Cameron and Quinn (1999) suggest constructing a picture of the organizational cultural data rather than looking at numerical results. Figure 5 shows the initial stage of the Organizational Culture Profile.



**Figure 5 The Organizational Culture Profile**

Source: Cameron and Quinn, 1999, p. 59

### 3.4. Questionnaire Results

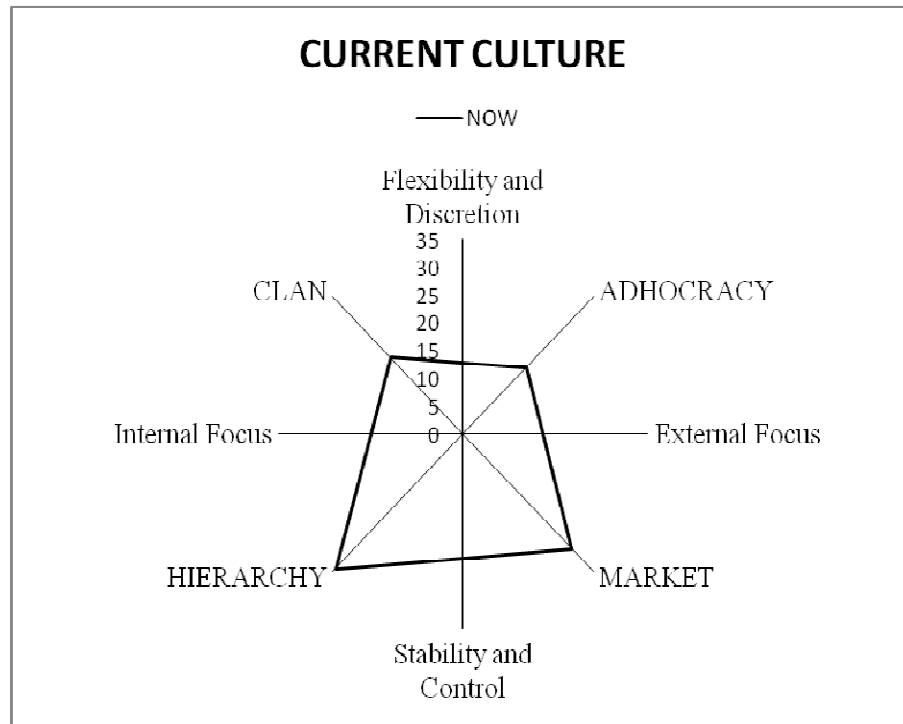
The results of the Organizational Culture Assessment Instrument (OCAI) are plotted on a graph, based on Cameron and Quinn (1999). The graphs were obtained directly from the survey results of the employees, and were generated in Excel using the Radar Chart.

#### 3.4.1. Perceived Current Organizational Culture

The perceived current organizational culture based on the view of 114 employees is shown in Figure 6. The averages of the four alternatives that each represents organizational culture are shown in Table 2.

**Table 2 Scores for the Perceived Current Organizational Culture of the Company**

A (THE CLAN):	19.50
B (THE ADHOCRACY):	16.96
C (THE MARKET):	29.25
D (THE HIERARCHY):	34.29



**Figure 6 Perceived Current Organizational Culture**

As seen from Figure 6, HIERARCHY is seen as a dominant organizational culture in the present state of the company, while ADHOCRACY culture has the lowest rate. The company is seen in the lower quadrant of the organizational culture profile. The scores show the big difference between the lowest and the highest scores of the profile. There are nearly 20 points between the highest and the lowest scores of the cultures.

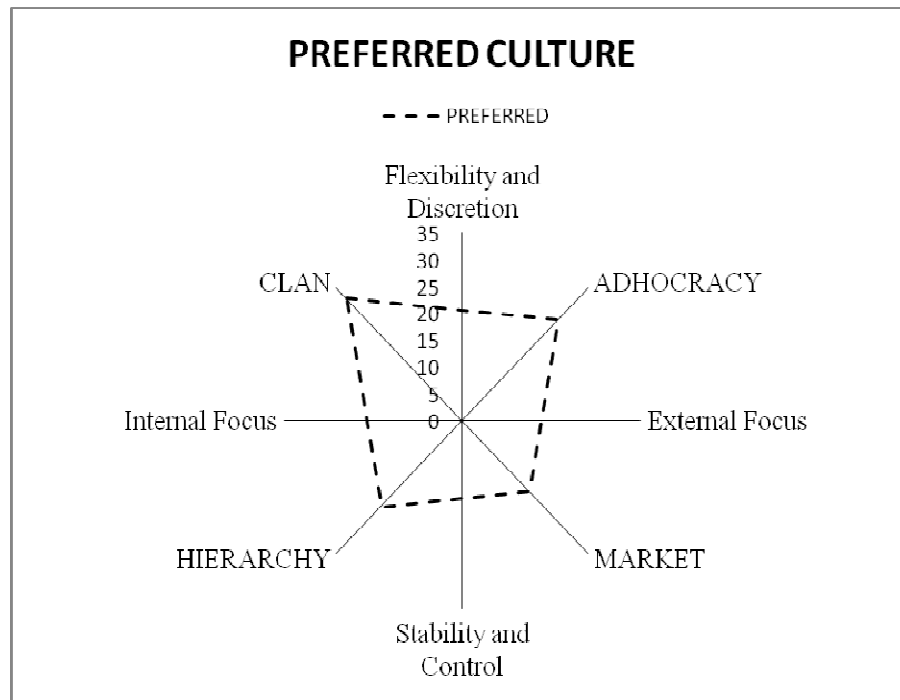
#### 3.4.2. Preferred Organizational Culture

The preferred organizational culture based on the view of 114 employees is shown in Figure 7. The employees answered the same set of questions, but now considering the organization as it should be in five years. The averages

of the four alternatives that each represents organizational culture are shown in Table 3.

**Table 3 Scores for the Preferred Organizational Culture of the Company**

A (THE CLAN):	32.28
B (THE ADHOCRACY):	26.59
C (THE MARKET):	18.54
D (THE HIERARCHY):	22.59



**Figure 7 Preferred Organizational Culture**

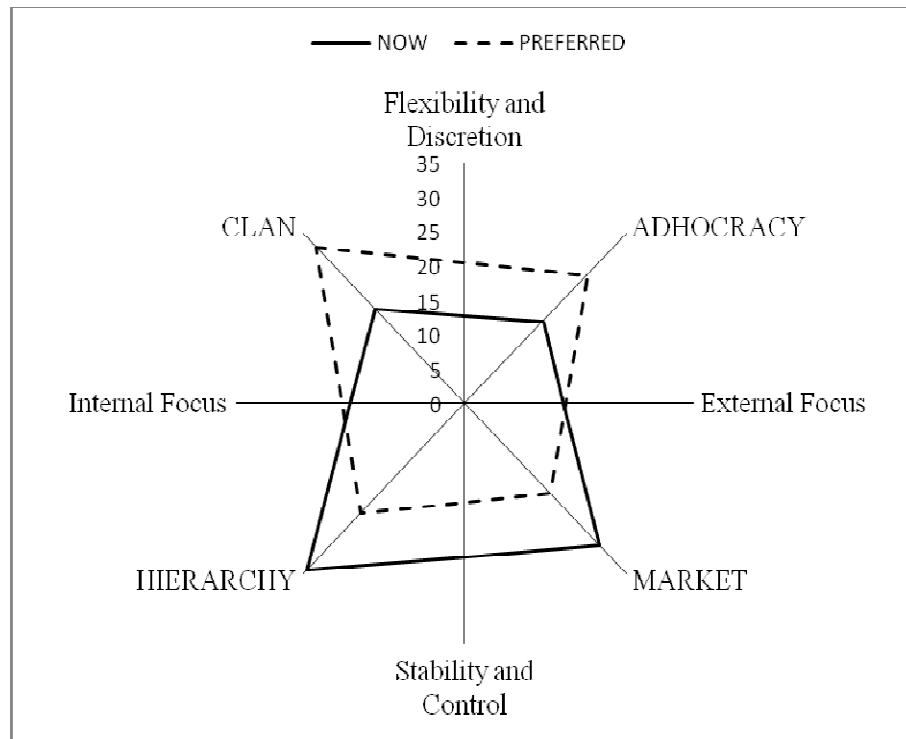
Figure 7 shows that the dominant preferred culture in the organization is CLAN. The decrease in the current dominant culture HIERARCHY can be seen from the score it has received. The preferred culture is seen in the upper quadrant of the organizational culture profile. There is a shift from the stability and control to flexibility and discretion.

If we plot the current and the preferred organizational cultures on the same graph, Figure 8 is obtained. The difference between the scores of the current and preferred organizational cultures is shown in Table 4.

**Table 4 Difference between Scores of the Perceived Current and Preferred Organizational Culture**

Culture Type	Current Culture Scores	Preferred Culture Scores	Difference
CLAN	19.50	32.28	12.78
ADHOCRACY	16.96	26.59	9.63
MARKET	29.25	18.54	-10.71
HIERARCHY	34.29	22.59	-11.7





**Figure 8 Perceived Current versus Preferred Organizational Cultures**

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current and preferred CLAN culture type. The P value is 0 with a confidence level of 95%. The same result is also applicable for ADHOCRACY, HIERARHCY and MARKET culture types. For all of the culture types the P value was 0.

The difference between the perceived current and the preferred organizational cultures can be easily seen in Figure 8. There is a big shift from the lower quadrant, which is dominated by HIERARCHY and MARKET cultures, to the upper quadrant, which is dominated by CLAN and ADHOCRACY cultures. The positive values in the difference column in Table 4, shows that employees prefer to see the company in CLAN and ADHOCRACY cultures, while the negative values show that employees

wants a decrease in the dominance of the two lower quadrant cultures: HIERARCHY and MARKET.

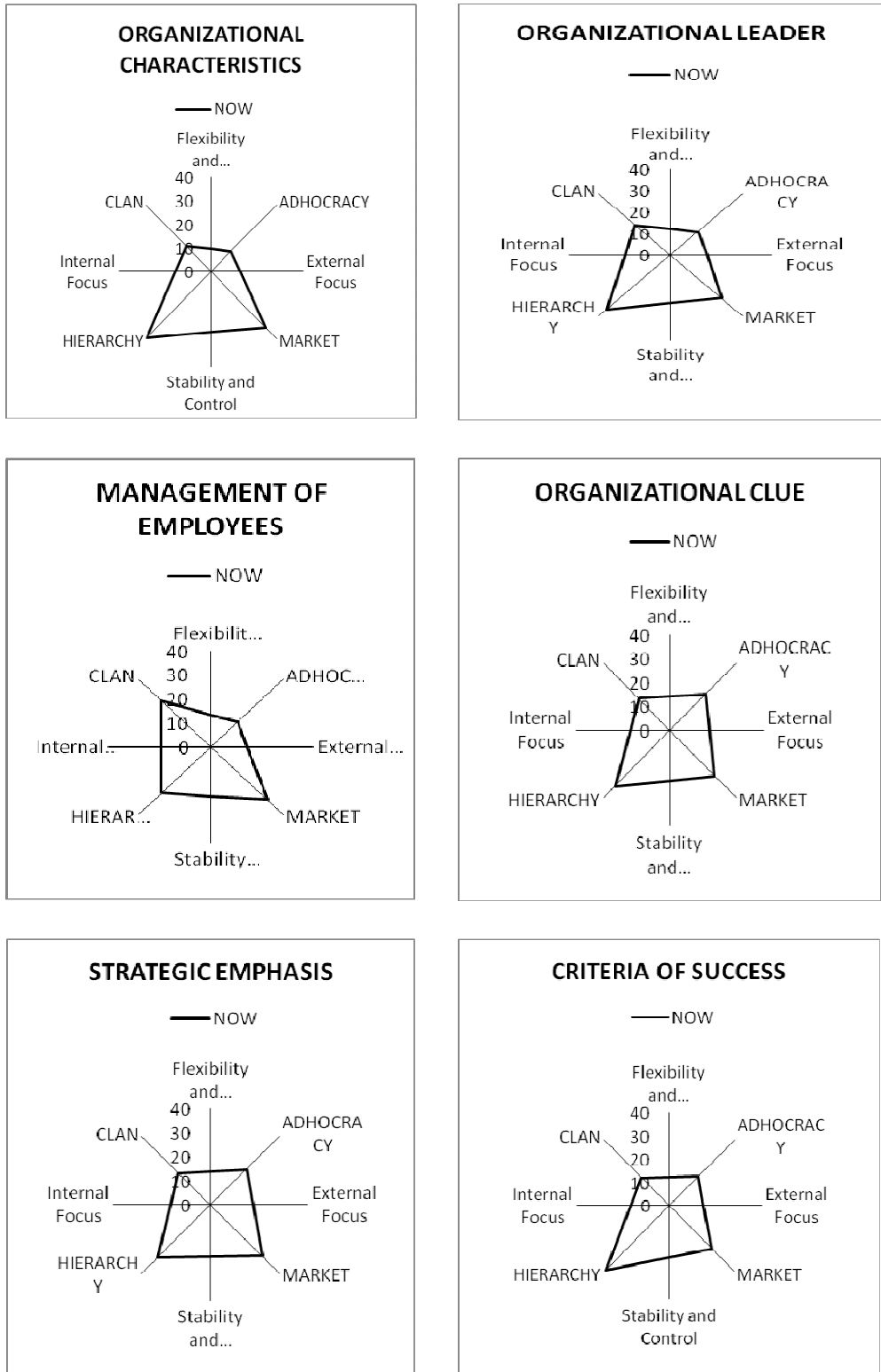
### 3.4.3. Individuals Items of OCAI

Cameron and Quinn (1999) recommend plotting all the six questions of the OCAI separately in order to see how these six culture attributes affect the dominant organizational culture. Plotting the individual items separately also helps to interpret the cultural congruence in the organization. We can say that there is cultural congruence if different aspects of the organization's culture are aligned (Cameron and Quinn, 1999). According to Cameron and Quinn (1999), organizations that possess congruent cultures are more likely to become successful than organizations with incongruent cultures, where the cultural attributes are not aligned. An incongruent culture is a sign for change and that some precautions should be taken in order to eliminate the ambiguity in the organization.

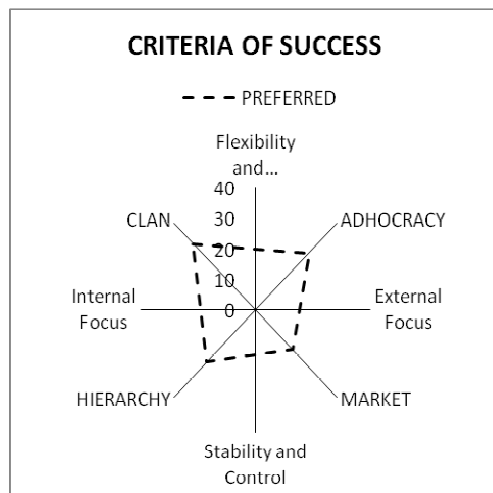
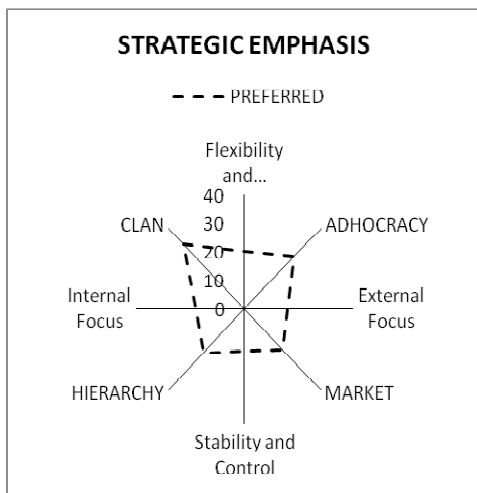
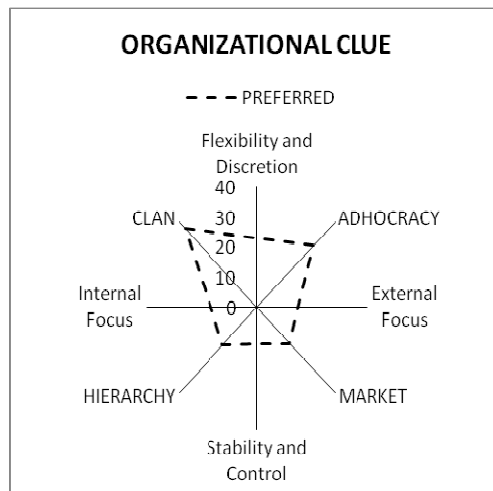
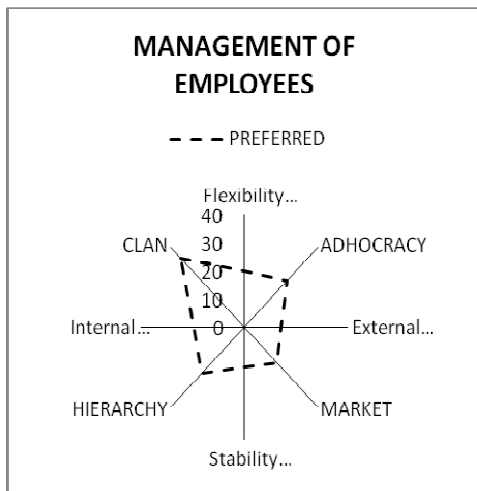
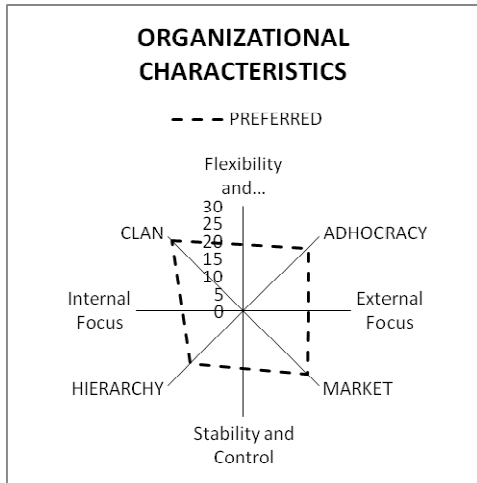
In Figure 9 the individual items of OCAI for the perceived current culture can be seen. When the individual items are analyzed we can note that the items are aligned with each other, except for the item of *Management for Employees*. While the Hierarchy culture is emphasized in the other five items, in this particular item, the Market Culture has higher score than the Hierarchy Culture. "*The management style in the organization is characterized by hard-driving competitiveness, high demands and achievement*" clearly defined the way how employees see the management style in the organization. There are always tough schedules to be met.

In Figure 10 the individual items for the preferred future organizational culture are shown. The individual items are in line with the overall preferred organizational culture except for the item *Organizational*

*Characteristics*. In the preferred organizational culture, Clan and Adhocracy cultures have increased while the Market and Hierarchy cultures have decreased. The same is also applicable for the *Organizational Characteristics* item, but in this specific item, the scores of the four culture types are nearly the same. In this item Clan culture type has the highest score of 28.34, and the Hierarchy culture type has the lowest score of 21.09. The Market and Adhocracy Culture types have nearly the same scores around 25. This score is the highest for the Market Culture; since in every other individual item its score is lower than 20. The Clan Culture type has the lowest score in this item, since in every other item its score is higher than 30. Compared to the current culture profile, the Clan and the Adhocracy Culture types have definitely increased in the *Organizational Characteristics* item (Clan: from 15.25 to 28.34, Adhocracy: 12.03 to 25.46). But it is interesting that they are not as dominant as they are in the other individual items. Maybe it is because in this specific item, employees all agree that there should be a balance in order for an organization to be successful, there should be items of personality, entrepreneurship, competitiveness and structures (Cameron and Quinn, 1999). Although it is not a prerequisite for success, successful organizations have a balanced cultural profile, where the four different cultures have the same weight and are in balance.



**Figure 9 Individual Items of OCAI – Perceived Current Culture**



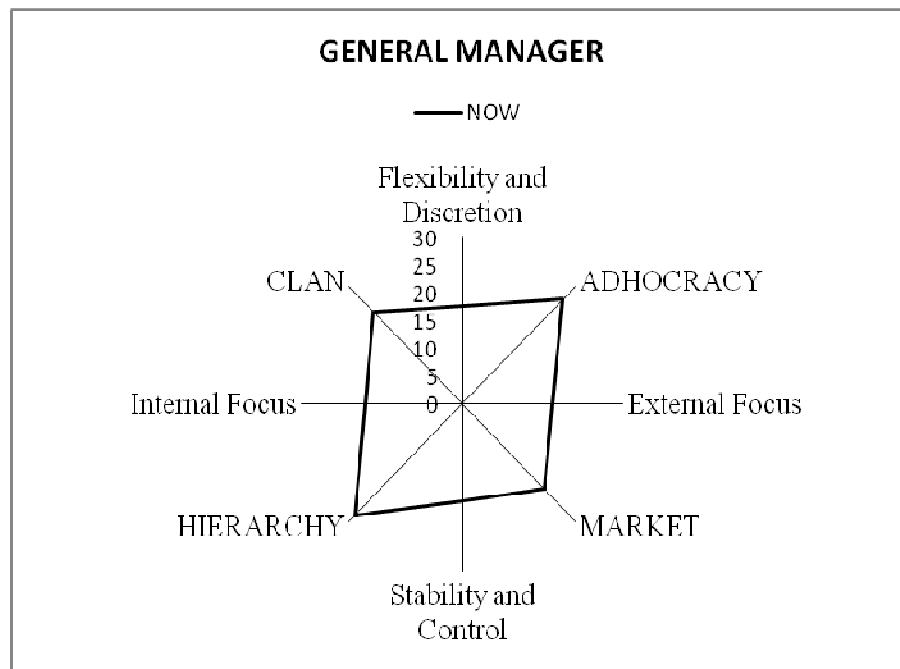
**Figure 10 Individual Items of OCAI – Preferred Culture**

### 3.4.4. Top Management’s Cultural Profile

The perceived current organizational culture of the general manager of the company is shown in Figure 11. The averages of the four alternatives that each represents organizational culture are shown in Table 5.

**Table 5 Scores for the Perceived Current Organizational Culture of the General Manager**

A (THE CLAN):	23.33
B (THE ADHOCRACY):	26.67
C (THE MARKET):	21.67
D (THE HIERARCHY):	28.33



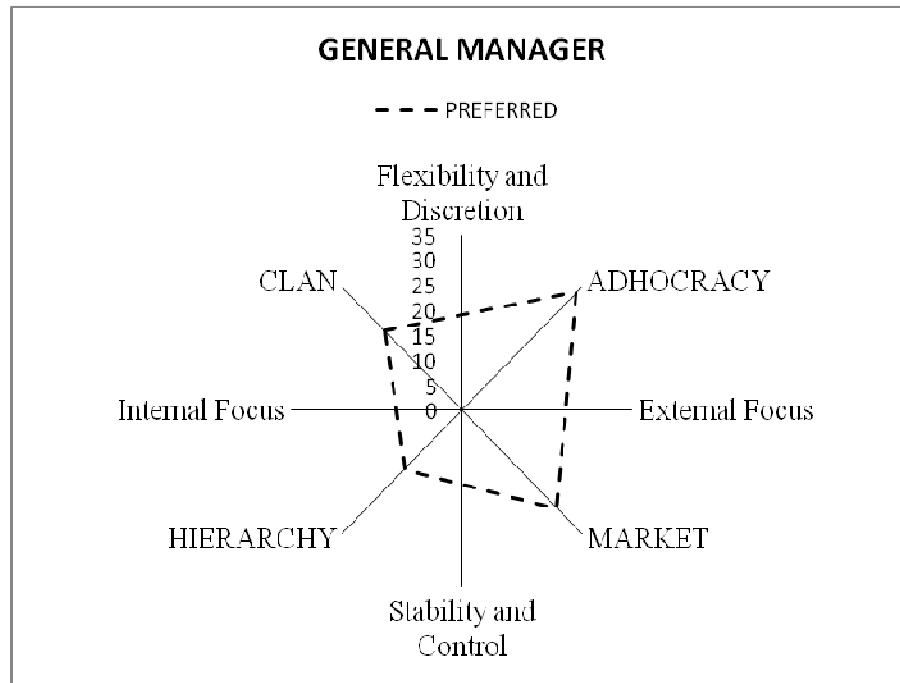
**Figure 11 The General Manager’s Perceived Current Organizational Culture**

As seen from Table 5 and Figure 11, the General Manager’s dominant current culture is also HIERARCHY, as it is in the company’s overall profile. But while he sees ADHOCRACY as the second dominant culture, the company as a whole disagrees with him, by giving ADHOCRACY the lowest score. Also while the company sees the MARKET culture as the second dominant one, General Manager scores it as the lowest one. The profile of the General Manager and the profile of the company show how different the organization is seen by top management and employees.

The preferred organizational culture of general manager of the company is shown in Figure 12. The averages of the four alternatives that each represents organizational culture are shown in Table 6.

**Table 6 Scores for the Preferred Organizational Culture of the General Manager**

A (THE CLAN):	22.5
B (THE ADHOCRACY):	33.33
C (THE MARKET):	27.5
D (THE HIERARCHY):	16.67



**Figure 12 The General Manager's Preferred Organizational Culture**

The dominant preferred organizational culture of the General Manager is ADHOCRACY as seen in Figure 12 and Table 6. He wants a big shift towards the ADHOCRACY culture. Also he wants a big decrease in the HIERARCHY culture.

If we plot the current and the preferred organizational cultures on the same graph, Figure 13 is obtained. The difference between the scores of the current and preferred organizational culture is shown in Table 7.





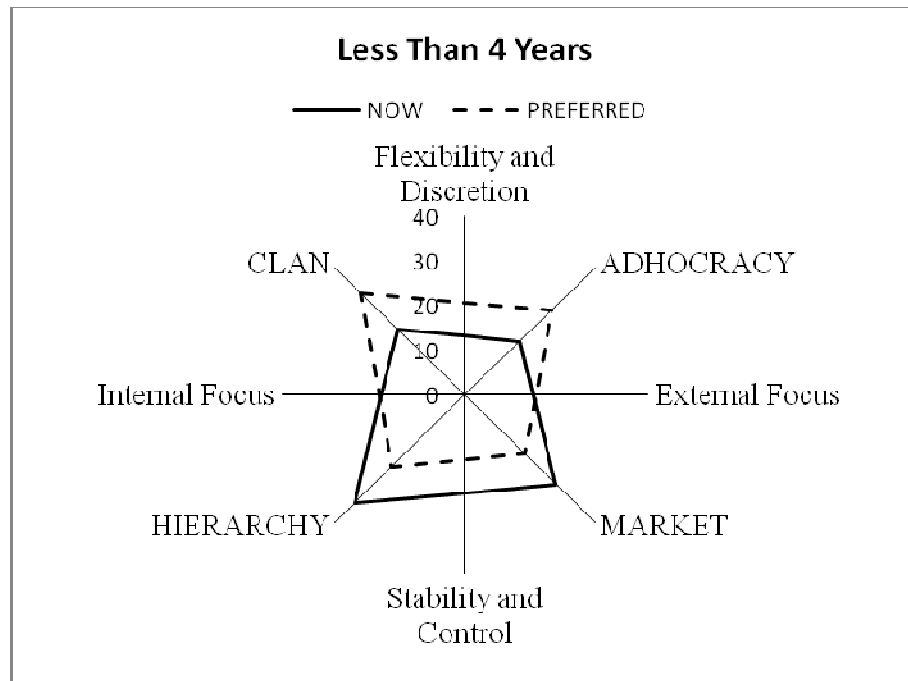
There is a shift from HIERARCHY culture to ADHOCRACY and MARKET cultures. The CLAN culture is seen as adequate in the present state as there is no change in its scores. From Table 7, it is easily observed how much decrease the General Manager wants in the dominance of the HIERARCHY culture.

#### 3.4.5. Cultural Profiles According to Length of Service

In this section, the cultural profile for different length of services will be presented. In Figure 14 the perceived current and preferred organizational culture of employees with length of service of less than 4 years is shown. The difference between the scores of the perceived current and preferred organizational cultures is shown in Table 8.

**Table 8 Difference between Scores of the Perceived Current and Preferred Organizational Culture of Employees with Length of Service of Less Than Four Years**

Culture Type	Current Culture Scores	Preferred Culture Scores	Difference
CLAN	20.81	32.16	11.35
ADHOCRACY	17.14	26.82	9.68
MARKET	28.08	18.42	-9.66
HIERARCHY	33.96	22.59	-11.37



**Figure 14 Perceived Current and Preferred Organizational Cultures of Employees with Length of Service of Less Than Four Years**

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current and preferred CLAN culture type of employees with a length of service of less than 4 years. The P value is 0 with a confidence level of 95%. The same result is also applicable for ADHOCRACY, HIERARCHY and MARKET culture types. For all of the culture types the P value was 0.

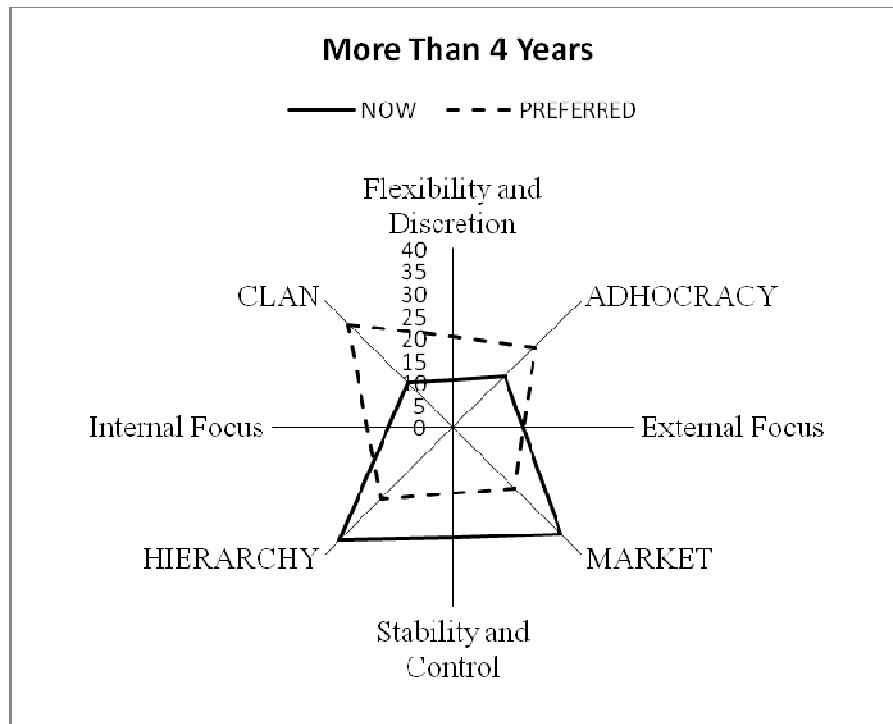
As seen in Figure 14 the general picture is the same as the overall company profile. There is a shift from the lower quadrants to the upper quadrants. The dominant culture is seen as HIERARCHY and CLAN is the dominant preferred organizational culture of employees with length of service of less than 4 years. As seen from Table 8, the desired decrease in HIERARCHY has shifted to the desired increase in CLAN. The same comment can be

also made for the MARKET and ADHOCRACY cultures. The decrease in the MARKET culture has gone to the desired increase in the ADHOCRACY culture.

Figure 15 shows the case of the employees who have a length of service of more than 4 years. The difference between the scores of the perceived current and preferred organizational cultures is shown in Table 9.

**Table 9 Difference between Scores of the Perceived Current and Preferred Organizational Culture of Employees with Length of Service of More Than Four Years**

Culture Type	Current Culture Scores	Preferred Culture Scores	Difference
CLAN	14.3	32.75	18.45
ADHOCRACY	16.25	25.65	9.4
MARKET	33.86	19.02	-14.84
HIERARCHY	35.6	22.57	-13.03



**Figure 15 Perceived Current and Preferred Organizational Culture of Employees with Length of Service of More than Four Years**

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current and preferred CLAN culture type of employees with a length of service of more than 4 years. The P value is 0 with a confidence level of 95%. The same result is also applicable for ADHOCRACY, HIERARHCY and MARKET culture types. For all of the culture types the P value was 0.

Figure 15 also resembles the overall company profile with some little differences. In this case, employees with a length of service of more than 4 years think that the company is dominated not only by the HIERARCHY but also by the MARKET culture. The scores for the perceived current cultures are very similar. Another difference is that, with the case of

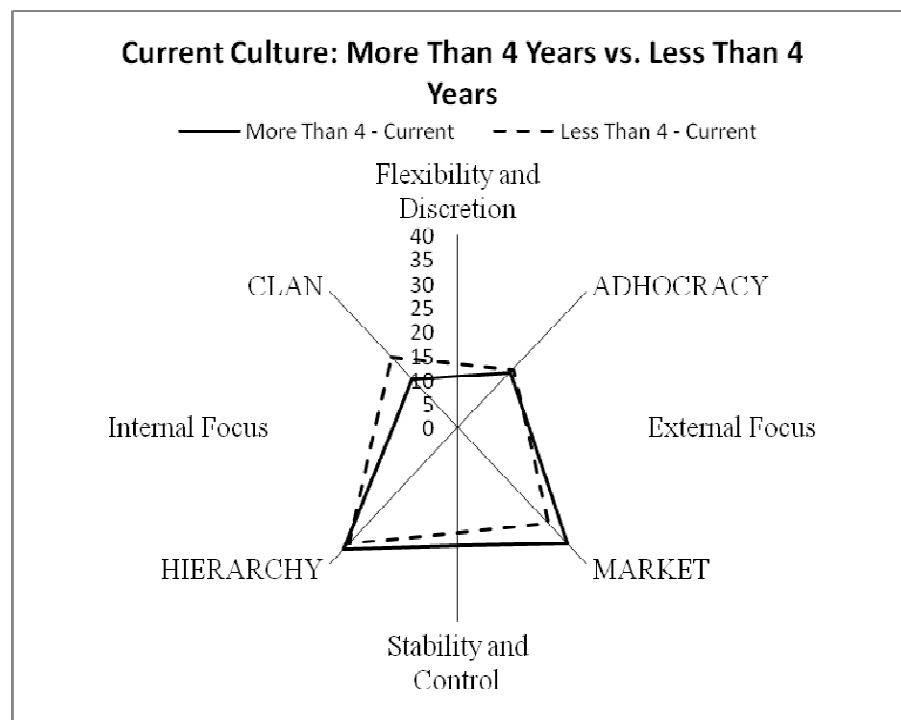
employees with length of service of more than 4 years, the CLAN culture has the lowest scores in the current situation while ADHOCRACY is the one that has the lowest score in the overall company profile. The preferred organizational culture of employees with a length of service of more than 4 years is almost similar to the preferred organizational culture of the company profile.

Figure 16 compares the perceived current culture for the two employee groups. Although there is similarity between these two groups, there are some little differences about how they see the current company culture. Employees who have worked more with the company see the company to possess a strong MARKET culture (with 33.86 score), while more new employees do not see the MARKET culture as strong as the senior employees see it. The score is 28.08 with more new employees. Another interesting thing is that new employees see the current culture to possess more CLAN type culture than the senior employees, with scores of 20.81 and 14.3 respectively. The difference between the scores of the perceived current organizational cultures for the two employee groups is shown in Table 10.

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current CLAN culture type for the two employees groups. The P value is 0,002 with a confidence level of 95%. Statistical difference for the current ADHOCRACY and MARKET cultures is also observed with P values of 0 and 0,047 respectively with a confidence level of 95%. There is not a statistical difference between the means of the current HIERARCHY culture of the two employee groups with a P value of 0,606 with a confidence level of 95%.

**Table 10 Difference between the Scores of Perceived Current Culture for Employment Groups with Different Employment Years**

Culture Type	Current Culture Scores: More Than 4 Years	Current Culture Scores: Less Than 4 Years	Difference
CLAN	14.3	20.81	6.51
ADHOCRACY	16.25	17.14	0.89
MARKET	33.86	28.08	-5.78
HIERARCHY	35.6	33.96	-1.64



**Figure 16 Perceived Current Culture: More Than 4 Years of Employment versus Less Than 4 years of Employment**

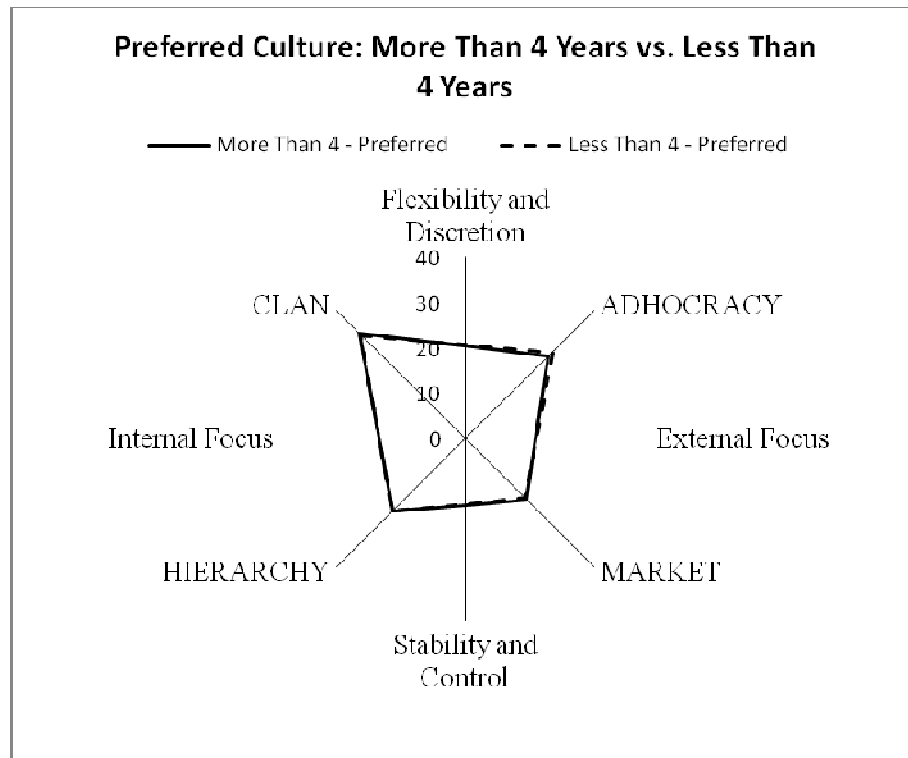
Figure 17 compares the preferred culture for the two employee groups. The difference between the scores of the preferred organizational culture for the two employee groups is shown in Table 11. As seen in Figure 17 and Table 11, the preferred organizational culture profiles are almost the same for the two employee groups.

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is not a significant statistical difference between the preferred culture types of the two employee groups. The P value for CLAN is 0,808, for ADHOCRACY culture is 0,643, for MARKET culture is 0,725 and for HIERARCHY is 0,643 with a confidence level of 95%.

**Table 11 Difference between the Scores of Preferred Culture for Employment Groups with Different Lengths of Service**

Culture Type	Preferred Culture Scores: More Than 4 Years	Preferred Culture Scores: Less Than 4 Years	Difference
CLAN	32.75	32.16	-0.59
ADHOCRACY	25.65	26.82	1.17
MARKET	19.02	18.42	-0.6
HIERARCHY	22.57	22.59	0.02





**Figure 17 Preferred Culture: More Than 4 Years of Employment versus Less Than 4 years of Employment**

3.4.6. Cultural Profiles for Management versus Non-Management Employees

In this section the cultural profiles for employees with managerial positions and employees with non-managerial positions are presented.

In Figure 18 the perceived current and preferred organizational cultures of employees with non-managerial positions are shown. The picture is similar to the overall picture of the company. The difference between the scores of the current and preferred organizational cultures is shown in Table 12.



One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current and preferred CLAN culture type of employees with non-managerial positions. The P value is 0 with a confidence level of 95%. The same result is also applicable for ADHOCRACY, HIERARHCY and MARKET culture types. For all of the culture types the P value was 0.

In Figure 19, the perceived current and preferred organizational cultures of employees with managerial positions are shown. The difference between the scores of the current and preferred organizational cultures is shown in Table 13.

**Table 13 Difference between Scores of the Perceived Current and Preferred Organizational Culture of Employees with Managerial Positions**

Culture Type	Current Culture Scores	Preferred Culture Scores	Difference
CLAN	18.13	31.75	13.62
ADHOCRACY	19.15	26.27	7.12
MARKET	31.52	19.55	-11.97
HIERARCHY	31.2	22.43	-8.77



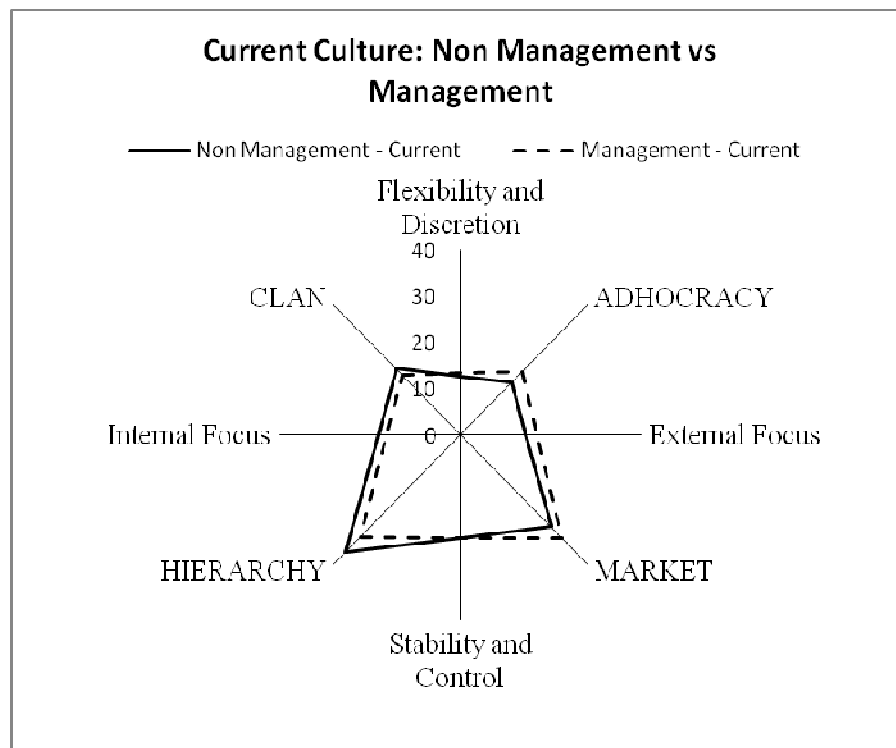
positions resembles the profile of the employees with length of service of more than 4 years. In both groups, the CLAN culture has the lowest score. The preferred organizational culture profile is similar to the overall company profile.

Figure 20 compares the perceived current culture for the two employee groups. The difference between managerial and non-managerial positions is that non-management's perceived current HIERARCHY culture is stronger than management's perceived culture, with scores of 35.88 and 31.2 respectively. On the contrary, the perceived current MARKET culture is stronger with managerial positions than non-managerial positions, with scores of 31.52 and 28.24 respectively. The difference between the scores of the perceived current organizational culture for the two employee groups is shown in Table 14.

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current CLAN culture type for the two employees groups. The P value is 0,289 with a confidence level of 95%. Statistical difference for the current ADHOCRACY, MARKET, and HIERARCHY cultures is also observed with P values of 0,02, 0,192, and 0,085 respectively with a confidence level of 95%.

**Table 14 Difference between the Scores of Perceived Current Culture:  
Non-Management versus Management**

Culture Type	Current Culture Scores: Non Management	Current Culture Scores: Management	Difference
CLAN	20.11	18.13	-1.98
ADHOCRACY	15.77	19.15	3.38
MARKET	28.24	31.52	3.28
HIERARCHY	35.88	31.2	-4.68



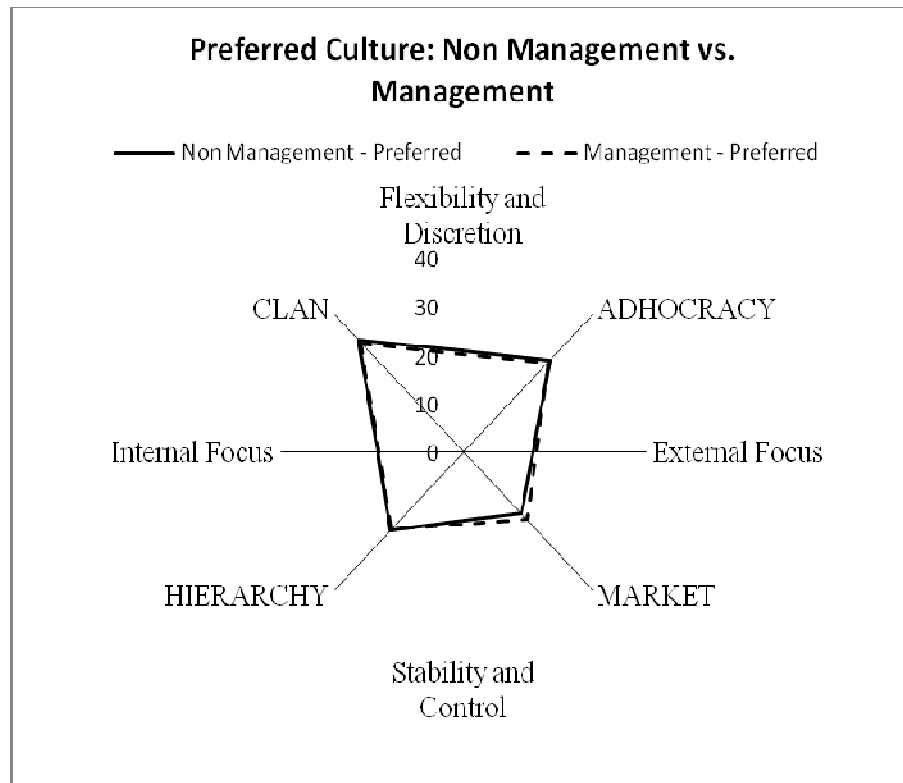
**Figure 20 Perceived Current Culture: Non-Management versus Management**

Figure 21 compares the preferred culture for the two employee groups. The difference between the scores of the preferred organizational culture for the two employee groups is shown in Table 15. As seen from Table 15 and Figure 21, the preferred organizational culture profiles are almost the same.

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is not a significant statistical difference between the preferred culture types of the two employee groups. The P value for CLAN is 0,656, for ADHOCRACY culture is 0,861, and for HIERARCHY is 0,864 with a confidence level of 95%. There is a statistical difference for the means of the preferred MARKET culture of the two employee groups with a P value of 0,268 with a confidence level of 95%.

**Table 15 Difference between the Scores of Preferred Culture: Non-Management versus Management**

Culture Type	Preferred Culture Scores: Non-Management	Preferred Culture Scores: Management	Difference
CLAN	32.67	31.75	-0.92
ADHOCRACY	26.65	26.27	-0.38
MARKET	17.93	19.55	1.62
HIERARCHY	22.74	22.43	-0.31



**Figure 21 Preferred Culture: Non-Management versus Management**

### 3.4.7. Cultural Profiles According to Engineering versus Non-Engineering Positions

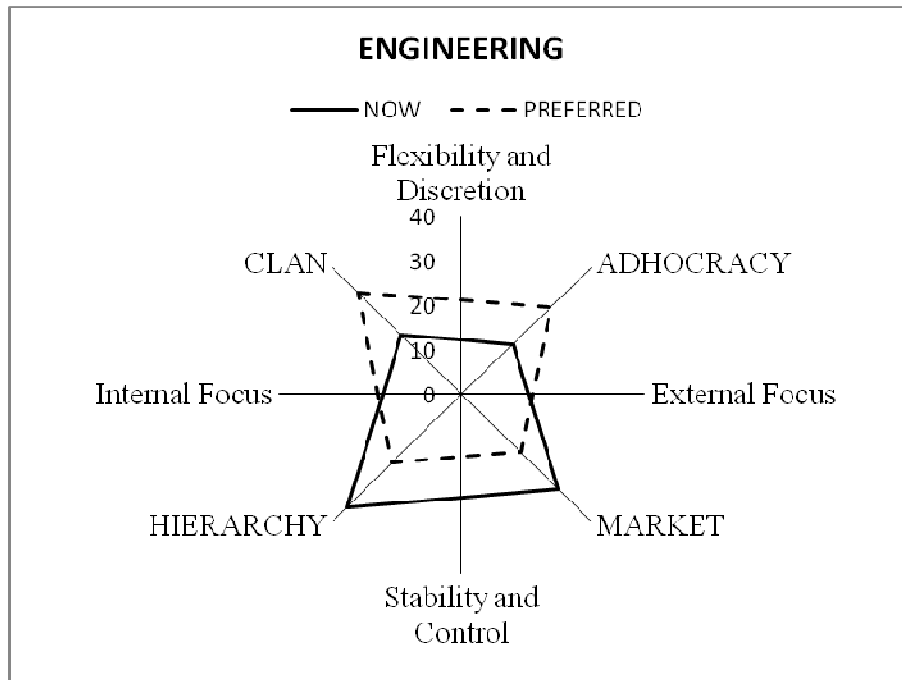
In this section the cultural profiles for employees of engineering and employees of non-engineering positions are examined.

In Figure 22 the perceived current and preferred organizational cultures of employees with engineering positions are shown. The difference between the scores of the perceived current and preferred organizational cultures is shown in Table 16.



**Table 16 Difference between Scores of the Perceived Current and Preferred Organizational Culture of Employees with Engineering Positions**

Culture Type	Current Culture Scores	Preferred Culture Scores	Difference
CLAN	18.9	32.18	13.28
ADHOCRACY	15.8	27.68	11.88
MARKET	29.73	18.41	-11.32
HIERARCHY	35.57	21.73	-13.84



**Figure 22 Perceived Current and Preferred Organizational Cultures of Engineering Positions**

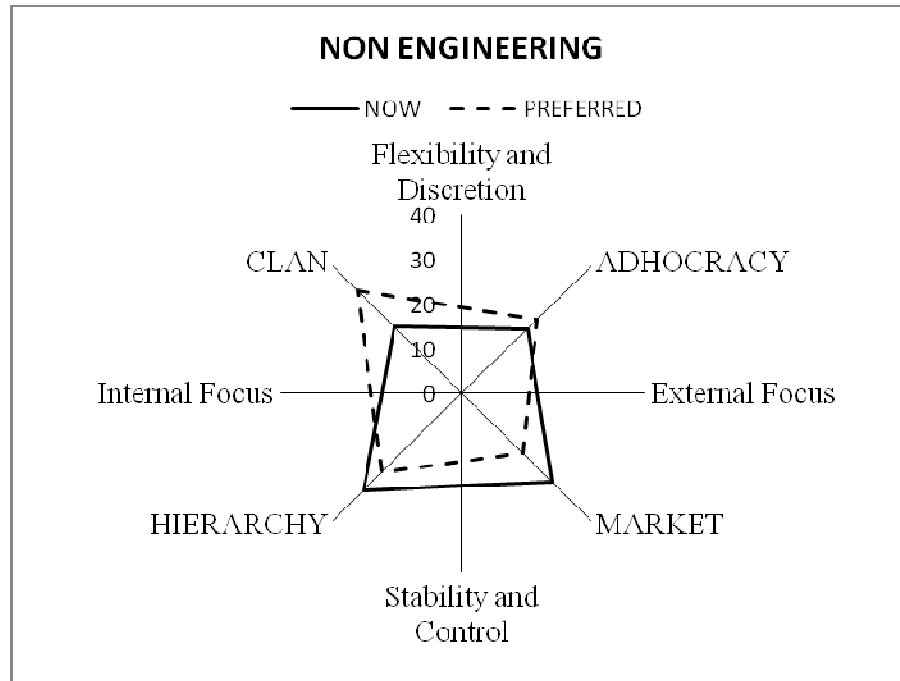
One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current and preferred CLAN culture type of employees with engineering positions. The P value is 0 with a confidence level of 95%. The same result is also applicable for ADHOCRACY, HIERARHCY and MARKET culture types. For all of the culture types the P value was 0.

As seen in Figure 22 and Figure 8, the profile of engineers is very similar to the overall profile of the company. The HIERARCHY culture has the highest score in the current culture, while the ADHOCRACY has the lowest, and the CLAN has the highest score in the preferred culture with the MARKET culture to have the lowest score.

In Figure 23 the perceived current and preferred organizational cultures of non-engineering positions is shown. The difference between the scores of the current and preferred organizational culture is shown in Table 17.

**Table 17 Difference between Scores of the Perceived Current and Preferred Organizational Culture of Employees with Non-Engineering Positions**

Culture Type	Current Culture Scores	Preferred Culture Scores	Difference
CLAN	21.16	32.57	11.41
ADHOCRACY	20.22	23.54	3.32
MARKET	27.91	18.92	-8.99
HIERARCHY	30.71	24.97	-5.74



**Figure 23 Perceived Current and Preferred Organizational Cultures of Non-Engineering Positions**

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current and preferred CLAN culture type of employees with non-engineering positions. The P value is 0 with a confidence level of 95%. The same result is also applicable for MARKET culture type. The P value for ADHOCRACY and HIERARHCY culture types is 0,094 and 0,005 respectively.

As seen in Figure 23, the profile resembles the overall company profile with a shift from the lower quadrants to the upper quadrants. There are some slight differences. Although HIERARCHY is the dominant one in the current profile, its score is not as high as it is in the current company profile. The scores of the other cultures are a little higher than the scores in the company profile. The preferred culture of non-engineering positions is

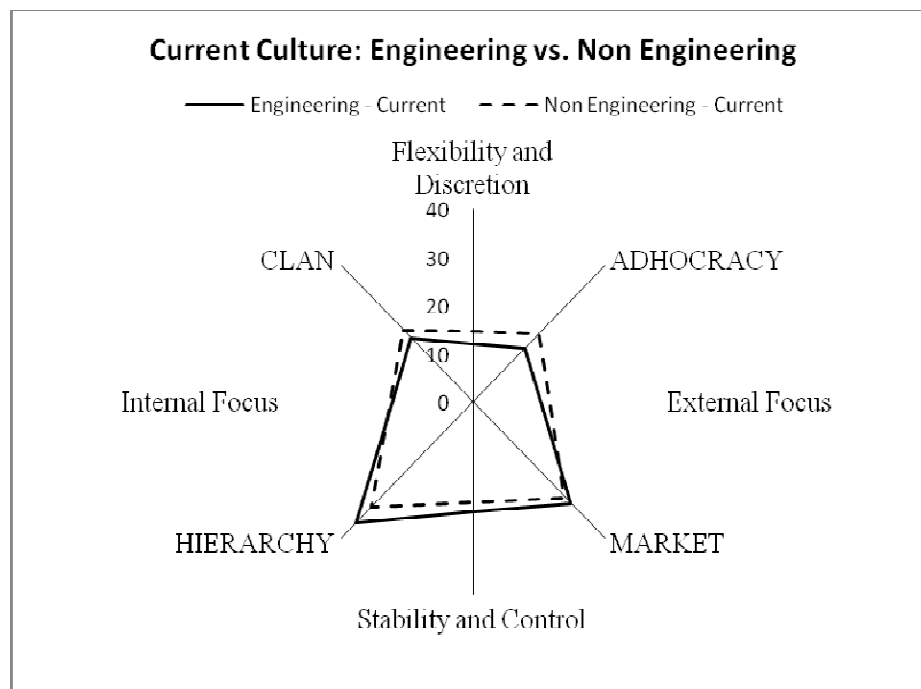
almost the same as the company's preferred cultural profile, with some little difference in the scores of the HIERARCHY and ADHOCRACY. The score of the ADHOCRACY is slightly lower than the overall company, while the score of the HIERARCHY is slightly higher than the overall company's score.

Figure 24 compares the perceived current culture for the two employee groups. When compared to the engineering profile, we see that the ADHOCRACY culture is perceived more in non-engineering positions with scores of 15.8 and 20.22 respectively. It is understandable since engineering positions' expectations about innovative culture is more than non engineering positions. Another difference is that the HIERARCHY culture is perceived more in engineering positions than non-engineering positions with scores of 35.57 and 30.71 respectively. The main reason behind this is that, procedures that engineers should follow are formed according to the Capability Maturity Model® Integration (CMMI). No one can ignore the procedures. This does not mean that there are no procedures for other departments. Procedures of other functions as well as core business functions also exist, but the core business functions are externally audited, and negligence is not allowed. The difference between the scores of the perceived current organizational culture for the two employee groups is shown in Table 18.

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is a significant statistical difference between the current culture types of the two employee groups. The P value for CLAN is 0,254, for ADHOCRACY culture is 0,004, for MARKET CULTURE is 0,498, and for HIERARCHY is 0,091 with a confidence level of 95%.

**Table 18 Difference between the Scores of Perceived Current Culture: Engineering versus Non-Engineering**

Culture Type	Current Culture Scores: Engineering	Current Culture Scores: Non-Engineering	Difference
CLAN	18.9	21.16	2.26
ADHOCRACY	15.8	20.22	4.42
MARKET	29.73	27.91	-1.82
HIERARCHY	35.57	30.71	-4.86



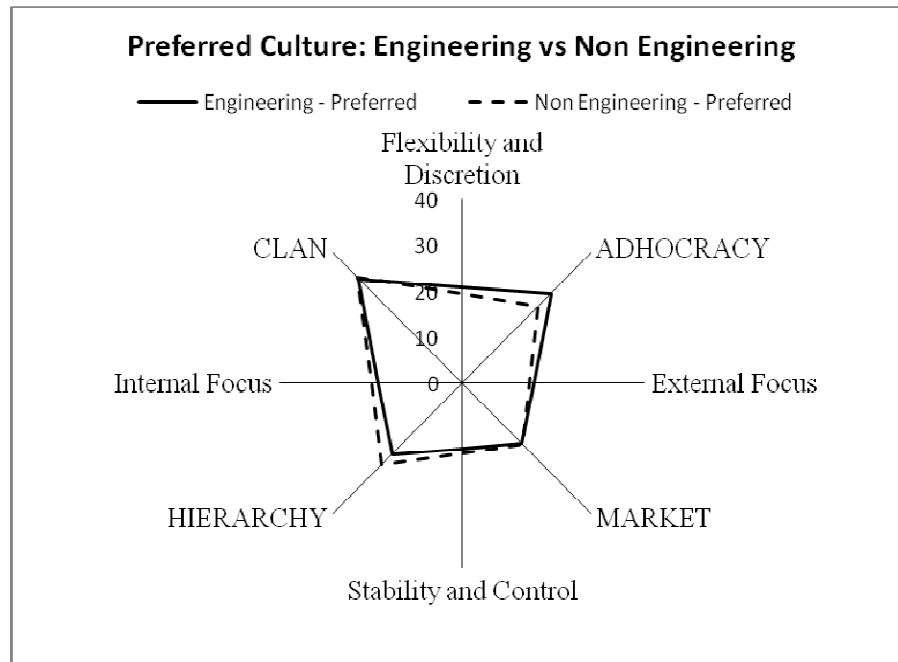
**Figure 24 Perceived Current Culture: Engineering versus Non-Engineering Positions**

Figure 25 compares the preferred culture for the two employee groups. The difference between the scores of the preferred organizational cultures for the two employee groups is shown in Table 19. Different from other situations, there is also a little difference in the preferred organizational culture. While the second preferred culture in engineering positions is the ADHOCRACY culture, in non-engineering positions it is the HIERARCHY culture.

One Way ANOVA test was performed in Minitab using the questionnaire results. According to the results, there is not a significant statistical difference between the preferred CLAN and MARKET culture types of the two employee groups. The P value for CLAN is 0,862 and for MARKET CULTURE is 0,744 with a confidence level of 95%. There is a statistical difference between the means for the ADHOCRACY and HIERARCHY culture types. The P value for ADHOCRACY is 0,071 and for HIERARCHY is 0,004 with a confidence level of 95%.

**Table 19 Difference between the Scores of Preferred Culture: Engineering versus Non-Engineering Positions**

Culture Type	Preferred Culture Scores: Engineering	Preferred Culture Scores: Non-Engineering	Difference
CLAN	32.18	32.57	0.39
ADHOCRACY	27.68	23.54	-4.14
MARKET	18.41	18.92	0.51
HIERARCHY	21.73	24.97	3.24



**Figure 25 Preferred Culture: Engineering versus Non Engineering Positions**

**3.5. Perception 1: The perceived current organizational culture of the company is ADHOCRACY**

The perceived current organizational culture of the company is shown in Figure 6. The scores of the four different culture types are shown in Table 2. As seen from the results, the first perception could not be supported. The results contradicted with the perception. The ADHOCRACY culture got the lowest score among the other types of the cultures. The highest score was received by HIERARCHY culture. The General Manager of the firm believed that the company possessed the qualifications of an ADHOCRACY culture, but as the results show, he was wrong. The main idea behind this perception was that the company has the certificate Capability Maturity Model® Integration (CMMI) Level 5, which stresses continuous improvement. Also, the General Manager believed that the company was first in many things, like

being the first in Turkey to get the international certificate Capability Maturity Model® (CMM) in 2003. As seen from the results employees do not think like the General Manager. It is the CMMI which makes employees think that the culture of the organization is the HIERARCHY, while the general manager thinks that it is the CMMI which makes the company culture an ADHOCRACY.

The definition of CMMI is as follows: “Capability Maturity Model® Integration (CMMI) is a process improvement approach that provides organizations with the essential elements of effective processes” (SEI, 2008). The main idea behind Capability Maturity Model was to be able to evaluate software development projects by the United States Air Force (WorldPress, 2008). The largest customer of the defense industry was tired of unfinished projects, projects finished with excessive budgets, so they decided to establish a standard for Software Development. The United States Air Force funded the study of the Carnegie-Mellon Software Engineering Institute (SEI). CMM was published in 1989 in the book of Watts Humphrey’s Managing the Software Process. CMM was replaced by CMMI in 2002.

Adopting CMMI has a great effect on the performance of organizations. According to the report of SEI (2006), the performance improvements can be seen in Table 20.

**Table 20 Performance Improvements in CMMI**

<b>Performance Category</b>	<b>Median Improvement</b>
Cost	34%
Schedule	50%
Productivity	61%
Quality	48%
Customer Satisfaction	14%
Return on Investment	4.0 : 1



(Source: Gibson, Goldenson and Kost, 2006, p. xi).

The five levels of CMMI are as follows:

Level 1: Performed

Level 2: Managed

Level 3: Defined

Level 4: Quantitatively Managed

Level 5: Optimizing

The last level of CMMI values continuous improvement.

In OCAI, the dominant characteristic of HIERARCHY culture is *“The organization is a controlled and structured place. Formal procedures generally govern what people do.”* It is believed that this is the main reason behind the results of the assessment.

### **3.6. Perception 2: The preferred organizational culture of engineers is ADHOCRACY**

The preferred organizational culture of engineers is shown in Figure 25. The scores of the four different culture types are shown in Table 18. As seen from the results, ADHOCRACY is a preferred culture, but after the CLAN type organizational culture. The ADHOCRACY culture is ranked second. The second perception also cannot be proved to be exactly true. In this case, although ADHOCRACY is not in the first place, we can see that engineers will prefer to have an ADHOCRACY culture rather than the HIERARCHY or MARKET. The reason why the CLAN culture ranked first in the preferred culture profile is that employees are seeking for values that they do not see the

company to possess in the current situation, like loyalty and trust, emphasize of human development, mutual commitment, etc. Employees want a safe and secure place to work, and after finding this environment employees will concentrate on new projects and generating new ideas. Weis (1988) stresses the importance of tolerating failures in order creativity and innovativeness to flourish in a company. The company should provide a safe and secure environment in order to establish an innovative culture. The company receives suggestions from employees who want the company to be more flexible and open to new ideas. The employees also want the company to give them freedom to spend their time on self-development; a specific time that they can spend on their own interest and not on the projects they are assigned to. This is in line with Lehr's (1988) suggestion who points out that in order to encourage innovation in organizations, companies should guarantee time for employees to work on projects of their own choice. All these suggestions of the employees actually show that in the long run what employees really want is a flexible environment where innovation and creativity can flourish.

### **3.7. Research Question 1: What is the perceived current organizational culture of the company?**

The perceived current organizational culture of the company is shown in Figure 6. The scores for each of the organizational culture type are given in Table 2. The dominant culture of the company is HIERARCHY. An organization possessing the HIERARCHY culture “focuses on internal maintenance with the need for stability and control” (Cameron and Quinn, 2006, p: 67). From Total Quality Management perspective, the quality strategies of HIERARCHY culture are: error detection, measurement, process control, systematic problem solving, quality tools (including fishbone diagrams, Pareto charting, affinity graphing, variance plotting) (Cameron and Quinn, 2006). All those quality strategies are part of the company processes

defined according to CMMI. For example, one of the process areas of CMMI Level 5 is Causal Analysis and Resolution. This process area aims to identify the root causes of problems or deviations and take preventive actions in order not to face them again. Fishbone diagram is used during the process in order to identify the root cause of the problems. Another process area is Measurement and Analysis which is a CMMI Level 2 process area.

The second culture type that has the highest score is the MARKET. An organization possessing the MARKET culture “focuses on external positioning with the need for stability and control” (Cameron and Quinn, 2006, p: 67). An organization with a MARKET culture is results-oriented. The most important thing is getting the job done (Cameron and Quinn, 2006, p: 66).

The two cultures that have the highest scores are on the same side of one of the dimensions. The Competing Values Framework was based on two main dimensions: stability and control versus flexibility and discretion and internal focus and integration versus external focus and differentiation. Both of the cultures are on the stability and control side of one of the dimensions.

The three most important aspects that the company mentions every time are: applying to processes, delivering a high quality product, delivering the product on time and within budget. These aspects give an idea why the two highest cultures are the HIERARCHY and MARKET. Delivering products on time and within budget is the most important thing in order to be viewed as successful. Employees do not have a chance to behave otherwise, no matter what. In the meantime, they must obey every process, no matter how much time it takes. As a result, it is not surprising that employees view the company as a “formalized and structure place to work”, place where “procedures govern what people do” and a place where “the major concern is getting the job done” (Cameron and Quinn, 2006, p: 66).

### **3.8. Research Question 2: What is the preferred organizational culture of the employees?**

The preferred organizational culture of the company is shown in Figure 7. The scores for each of the organizational culture type are given in Table 3. The dominant preferred organizational culture of employees is the CLAN. An organization possessing the CLAN culture “focuses on internal maintenance with flexibility, concern for people, and sensitivity to customers” (Cameron and Quinn, 2006, p.67). CLAN type organizations are defined as an extended family where people share a lot of themselves. Teamwork, loyalty, employee morale, and development are the important aspects of a CLAN type organization (Cameron and Quinn, 2006).

The second culture type that has the highest score is the ADHOCRACY. An organization possessing an ADHOCRACY culture “focuses on external positioning with a high degree of flexibility and individuality” (Cameron and Quinn, 2006, p.67). ADHOCRACY type organizations are dynamic, entrepreneurial and creative places to work. People value innovation, experimentation, and developing new products and services (Cameron and Quinn, 2006).

The two preferred cultures that have the highest scores are on the same side of one of the dimensions. But different from the current culture, the side of the dimension has changed. While in the current culture profile, the company was seen on the stability and control side of one of the dimensions, now in the preferred culture profile, employees want the company to be on the flexibility and discretion side of the same dimension. This move shows that employees want a more flexible place to work.

As seen from Figure 8, there is a difference between how employees see the organization in the current state, and how they want to see it in five years. They

want a shift from the lower level to the upper level. According to Cameron and Quinn (1999), during their lifetimes, organizations show evidence of possessing characteristics of the four organizational cultures. A culture shift from adhocracy, clan, hierarchy, and finally market is the typical pattern of most organizations. After they possess the characteristics of hierarchy and market organizational cultures, organizations try to shift to the upper quadrants in order to be more flexible and innovative.

We can also see the same pattern in this Turkish software company. Many employees complain about how the company has become slower in responding to new ideas, that it used to be easier to put new ideas into practice. Another complaint is that the company was more like a family before. The culture has shifted, from adhocracy and clan to hierarchy and market. There are many reasons behind this move; mostly the fast growth of the company, both in employees and business opportunities. It was easier to be like a family when there were 70 employees in the company than it is when there are more than 230 employees. Five years ago everybody knew each other, but now employees are not even aware of the fact that there are new employees coming to the company. The company becomes more hierarchical, especially because it has the CMMI Level 5 certificate. “Formal rules and procedures govern what people do” (Cameron and Quinn, 2006, p: 66) clearly explains the organization. Also it is very understandable why people see the organization to possess market culture. In the company everyone competes with time. There are tough budgets, related to both man-hour and time. The organization should complete its projects on time and within budget in order to meet the demands of the customer. The competition in the industry is high. The company should prove itself both in local and international markets. The company tries to be first in some areas, not only in Turkey but also in the international arena. Employees are challenged since each time more is requested from them.

### **3.9. Research Question 3: What is the preferred organizational culture of upper management?**

The preferred organizational culture of upper management is shown in Figure 12. The scores for each of the organizational culture types are given in Table 6. The General Manager wants to see the company possessing an ADHOCRACY culture in five years. When compared to the current culture that the general manager thinks to exist in the company, we see that it is the HIERARCHY culture. Please refer to Figure 11 and Table 5 for the perceived current culture of general manager.

When we look at Table 7, we see that the General Manager expects a big decrease in the HIERARCHY culture. The decrease in the HIERARCHY culture has been distributed nearly evenly as an increase to the MARKET and ADHOCRACY cultures. It is obvious that the General Manager wants a shift from an internal focus and integration and stability and control to an external focus and differentiation and flexibility and discretion.

Another interesting thing is that the General Manager believes that the company possesses an ADHOCRACY culture as the second dominant culture in the current state. This is very different from the overall picture in the company. Although there is a common view that the dominant culture is the HIERARCHY culture, there is a difference between the second dominant cultures. The general view of the employees is that the company possesses the HIERARCHY and MARKET cultures, but according to the General Manager, the company possesses the HIERARCHY and ADHOCRACY cultures. According to him, the company already has signs of innovativeness. He says that the company is leader in many things, like being the first to take the CMM Level 3 certificate in 2003 in Turkey. Furthermore the Level 5 in CMMI emphasizes continuous improvement. In order to attain CMMI Level 5, a company should prove that it continuously improves its process performance

via innovative changes. However he thinks that this level of ADHOCRACY culture is not enough and he also thinks company should allow its employees to spend more time for self-improvement and new ideas. Another opinion of the General Manager is that the company should establish a balanced culture by adopting the good aspects of the four culture types in order to be successful. The company should create a personal place where employees can take risks and create new ideas, but also be able to compete with other companies and apply some standards. He believes that only focusing on one culture will not lead the company to success. The idea is in line with Denison (1990), who also states that an effective culture should provide all the elements of the four different culture types. He states that “a culture that is at the same time adaptive, yet highly consistent, or responsive to individual involvement, but within the context of a strong shared mission, will be most effective” (Denison, 1990, p.15).

#### **3.10. Research Question 4: How can an innovative organizational culture be established?**

In this section, an answer will be given to the fourth research question using Lewin’s (1958) model of organizational change. The model is composed of three steps: unfreezing, movement, and refreezing. The model will be modified by removing the unfreezing stage, which is mostly used to manage the resistance to change. In this research case, the main idea is to establish a corporate culture for a Turkish software company. The desired corporate culture is an adhocracy culture that emphasizes innovativeness and continuous improvement. Although ADHOCRACY is not ranked first in the cultural profile of the employees, it is believed that in the long run what employees really want is a flexible and innovative place where they can be part of a team that will produce new products and ideas. In paragraph 3.7 the reason for the CLAN culture to be ranked first was given. Accordingly, it is believed that an innovative culture is what employees also want, so there will neither be

resistance to change, nor a need for the unfreezing stage. Goodstein and Burke (1991) define three levels of organizational change. The levels are individual, structures and systems, and climate and interpersonal style. At the individual level, values, skills, attitudes of employees are changed. At structures and systems level, work design, reward systems, reporting relationships are changed. At the last level, climate and interpersonal style, decision making ways, conflict management, interaction among people are managed.

When proposing actions to the Turkish software company, the literature review performed in paragraph 2.7 will be used. When performing the literature review, it was observed that very similar items were emphasized by different researchers in order to make an organization innovative. The similar items are: top management support, suitable reward systems and recognition, open communication: between management and employees and among different divisions, decentralized organizations, and no fear from failure.

In order to establish an innovative culture in the Turkish software company the following actions are proposed:

1. Movement Stage:

- a. Individual Level

In the movement stage, actions that will change the organization are taken. In the individual level, actions that will change the individual behavior, by changing individuals' beliefs and skills are taken. In this level, extensive training program will be planned. Every employee will attend training about innovation. The aim of the training is to increase the creativity of employees. Managers will also receive training about how to increase the creativity of their employees. In order the change to be successful, the



management style is also very important; managers should continuously support their employees.

b. Structures and Systems Level

In the structures and systems level, changes in the organizational structure should be performed. The company is implementing a Balanced Scorecard system whose results will be used for incentive payment. The Balanced Scorecard should be designed to emphasize the revenue from new products rather than the revenue from actual products. The Balanced Scorecard should also emphasize generation of new ideas.

The company has a well defined set of procedures established according to different quality standards like ISO, AQAP and CMMI. Although the processes can be tailored for different projects, the same set of processes is applicable for all the projects. Employees working for R&D projects complain frequently about the processes for not being applicable for their projects. A different set of processes should be defined for R&D projects and for customer projects. The processes should be lighter for R&D projects so that they will not block the creativity of the employees.

In the current structure, R&D programs are managed under the Engineering Directorate. Projects other than R&D projects that have a customer are managed under the Programs Directorate. The Engineering Directorate behaves like a source for engineers. All engineers are assigned to the Engineering Directorate when they do not work for a specific project. When an engineer is assigned to a project, he/she is taken from the Engineering Directorate and is assigned to the Programs Directorate. It is good that R&D and customer projects are managed under different directorates. But if

the company wants to emphasize innovation and R&D projects, R&D projects should also have a different department as other projects have. Besides this fact, the Engineering Directorate is also responsible for all engineering processes that are used in all projects. A separate department for R&D will help emphasize the importance of R&D and will help to form its own processes. Separation of R&D is in line with Weis's (1988) suggestion of separating management of innovation from management of established business.

c. Climate and Interpersonal Style Level

Employees are complaining about not spending time on self-development. If the company wants to create an innovative culture, it should provide a guaranteed time for self-development. Employees work 45 hours a week. Weekly task assignments are made from their projects and they should finish the assigned work. The company should provide 5 hours a week for every employee to spend on research, to get together and discuss new technology, etc. In order to increase the communication between employees, a technology portal should also be established in the company. Employees can share their ideas and look for answers to their questions in the portal. Employees should be encouraged to use this portal. In order to encourage the usage of the portal, employees can give points to the published material. A reward can be given to the employee who earns the most points; his/her name can be published in the monthly periodical of the company.

## 2. Refreezing Stage:

### a. Individual Level

In order to sustain the changes in the company the commitment of top management should be continuous. Top management should emphasize continuous improvement and innovativeness in all circumstances. In order for creativity to flourish in the company, employees should know that their innovative actions will be supported by top management.

In this stage and this level, employees with successful innovative ideas should be rewarded and these rewards should be visible to others. A separate parking lot in the directors' parking area can be given for a specific time interval. The names of the rewarded employees and their ideas can be published in the company's monthly periodical. Another thing that can be done in this stage and level is to introduce the coaching concept that will help new employees to be oriented to the company and its values. For every one or two new employees, a senior employee will be selected and the senior employee will be their coach for two or three weeks. His/her responsibility will be orienting new employees to the company, introducing them to their co-workers, presenting the working environment, introducing the company culture and values, thus making them adopt the company culture.

### b. Structures and System Level

In order to stabilize the changes in the company, the changes should be supported by the structures and systems of the company. Employees who can adopt the company culture should be promoted and employed. The competency for creativity and desire

for continuous improvement should be sought as important traits in new applicants, especially in the applicants for engineering positions. The competencies should not only be used in order to distinguish applicants but they should also be used during their employment. Employees should be appraised according to their creative ability, and their desire for continuous improvement and risk taking. The performance appraisal system should promote these competencies. The 360-degree performance appraisal system should also be introduced, so that the company will be able to see its managers' ability in supporting and managing creativity. Since management support is very crucial for a successful establishment of a culture, the company should be able to monitor the performance of its managers. The company should be able to see if managers support their employees' creativity and innovativeness.

Assessing the competencies of employees is a good way to see if the new culture is being supported but also results should be taken into account. The results of the actions should be measured by the Balanced Scorecard. The Balanced Scorecard should contain measures that will support the innovative culture. Measures like revenue from new products, return on R&D expenditures should gain more weight in the financial perspective of the Balanced Scorecard. Operations level perspective should contain measures about new product development processes. The Learning and Growth perspective should contain measures about the competency increase of the employees.

c. Climate and Interpersonal Style Level

Introduction of the coaching concept also affects the climate and interpersonal style of the organization. Being oriented by senior employees, new employees will be able to adopt the climate of the

organization in a better and faster way. Another thing that will sustain the change in this level is introducing the dual career path. Most of the engineers do not want to advance in management but they want to stay in their engineering positions. But while staying in the technical positions they want the same privileges as their colleagues in management. When engineers are given a dual career path with the same privileges, like a separate room, a cellular phone, etc., then they may be willing to participate in promoting the desired culture in the company. Only under such conditions engineers will be ready to concentrate on what they can best do for producing new ideas and new products.

The suggestions according to the modified Lewin's Model for Organizational Change are shown in Table 21.

**Table 21 Applying modified Lewin’s model for Organizational Change to the Turkish Software Company**

<b>Levels</b>	<b>Movement</b>	<b>Refreezing</b>
Individual	<p>Training given about Innovation</p> <p>Training given to managers about how to increase creativity of the employees</p>	<p>Continuous commitment of top management.</p> <p>Reward people with a good innovation idea, visible to everyone, like giving them a separate parking lot, or a cellular phone.</p> <p>Introduction of coaching concept for newly hired employees</p>
Structures and System	<p>Emphasize more the revenue from new projects in the Balanced Scorecard.</p> <p>Establish a different set of internal processes for R&amp;D projects</p> <p>Separating R&amp;D programs from the Engineering Department and making it a different department.</p>	<p>Hiring system that promotes creativity competency</p> <p>A new competency based performance appraisal system that promotes creativity, risk taking, continuous improvement</p> <p>360-degree performance appraisal system</p> <p>Update Balanced Scorecard system to give more importance to new product development</p>
Climate / interpersonal style	<p>Give employees 5 hours a week for self research</p> <p>Create a portal and encourage people to use it, by rewarding the person who has made the most contributions</p>	<p>Introduction of coaching concept.</p> <p>Introduction of a dual-career path, introducing the same privileges to both managerial and technical career paths</p>

## CHAPTER

### 4. CONCLUSION AND RECOMMENDATIONS

#### 4.1. Conclusion

This research paper provides a model for establishing an innovative culture in a Turkish software company by asking the following research question:

#### **What actions should be taken in order to establish an innovative culture?**

Four sub questions that helped to find an answer to the main research question were designed as follows:

1. What is the perceived current organizational culture of the company?
2. What is the preferred organizational culture of the employees?
3. What is the preferred organizational culture of upper management?
4. How can an innovative organizational culture be established?

In addition to these questions two perceptions of management were also tested in this research. The perceptions were:

1. The perceived current organizational culture of the company is ADHOCRACY.
2. The preferred organizational culture of engineers is ADHOCRACY.

During this process, an organizational culture assessment was performed in order to find out the perceived current and the preferred organizational cultures of the company. The organizational culture assessment was performed using Organizational Culture Assessment Instrument (OCAI) developed by Cameron and Quinn (1999). The cultural profiles of different employee groups were also analyzed during this research.

Below there are some brief results of the organizational culture assessment performed in the company.

- The perceived dominant current culture among employees is HIERARCHY. The main reason of this result is that the company has a strong process system based on CMMI Level 5. Every employee should obey the process and procedures while performing his/her job.
- The preferred dominant culture among employees is CLAN. Employees value trust, loyalty, teamwork, and participation. They also want the company to emphasize human development.
- Employees want a movement from stability and control to flexibility and discretion. Thus a shift from HIERARCHY and MARKET cultures to CLAN and ADHOCRACY cultures is desired.
- The perceived dominant current culture of General Manager is HIERARCHY. The General Manager's view is in line with the overall company profile.
- The preferred dominant culture of the General Manager is ADHOCRACY.
- ADHOCARCY has the lowest score among employees in the current state of the company, while it is ranked second in the current cultural profile of the General Manager. The General Manager believes that the company has some signs of innovation since the company is first in many things, like being the first in Turkey who gets the international



certificate Capability Maturity Model® (CMM) in 2003. As seen from the results employees do not think like the General Manager. It is the CMMI which makes employees think that the culture of the organization is HIERARCHY, while general manager thinks that it is the CMMI which makes the company culture ADHOCRACY. The General Manager also points out that CMMI Level 5 stresses the importance of continuous improvement.

- When the individual items of OCAI are analyzed we see that there is a cultural congruence in the current cultural profile except for the item *Management for Employees*. While HIERARCHY is dominant in all other five items, in this specific item MARKET is the dominant one. *“The management style in the organization is characterized by hard-driving competitiveness, high demands and achievement”* clearly defines the way how employees see the management style in the organization. There are always tough schedules to be met.
- The perceived dominant current organizational culture among managers is MARKET. In every other case, HIERARCHY is the dominant one. The reason behind this result is that managers are closer to top management than other employees. They are more familiar with the achievement orientation and high demands of top management.
- An ADHOCRACY culture is perceived more in non-engineering positions compared to engineering positions. Since the expectation of engineers about innovative and creative working climate is stronger compared to others, it is understandable why the score for ADHOCRACY is lower.
- The first perception claiming that the perceived current organizational culture of employees is ADHOCRACY turned out to be false, since HIERARCHY was the result.

- The second perception claiming that the preferred organizational culture of engineers is ADHOCRACY turned out to be false. ADHOCRACY comes second after CLAN culture.

When forming a model for establishing an innovative culture for the Turkish software company, Lewin's (1958) model for organizational change was used. Lewin's (1958) model is composed of three stages: unfreezing, movement and refreezing. The model was modified by removing the first stage: unfreezing. The purpose of the unfreezing step is to eliminate the resistance to change. The step is removed because it is believed that there will be no resistance when trying to establish an innovative culture. Although ADHOCRACY is not ranked first in the cultural profile of the employees, in the long run what employees really want is a flexible and innovative place where they can be part of a team that will produce new products and ideas. The suggestions made by the employees in their performance evaluations forms support the claim that there will be no resistance to change. Also, Lewin's model (1958) was prepared for companies that go through an enormous change due to changes in their external environments, and they do not have any other option except to change themselves in order to survive (as cited in Goodstein and Burke, 1991). Goodstein and Burke (1991) argue that organizations change because of the pressure of the external factors, not because of "internal desire" (p.5). In our case, the company does not face any external pressure, but rather it wants to determine and establish a culture that they think is suitable to their strategies and long-term goals. So the need for the first step is eliminated from the model, since the pressure for change is internal but not external.

The model established for the Turkish software company can be found in Table 21. An intensive training program for both employees and managers is suggested. Employees should be trained to increase their creative ability, while managers should be trained on how to increase the creative potential of their employees. The importance of top management's support during the change

process was viewed as very important. It is strongly believed that without actual commitment of top management, the model will not reach its goal. Changes in the current organization are recommended. The importance of separating R&D programs from the Engineering Directorate is also emphasized. A separate R&D department can accelerate the formation of different set of internal processes for R&D projects. It is also pointed out that the measurement system that can help to increase the innovation in the company has great importance. The Balanced Scorecard system of the company should support the generation of new products by measuring the revenue from new products rather than the revenue from actual products. Change in the performance appraisal system is also recommended. The 360-degree performance appraisal system may be a suitable tool to use in the company. The reason behind this suggestion is that it is important to see the managers' ability in supporting and managing creativity. The performance appraisal system should also support more competencies like creativity, risk taking, and continuous improvement. Communication is a very crucial element of innovative cultures. Without proper communication inside the company, the efforts of establishing an innovative culture will be in vain. Creating and promoting the usage of a technical portal where employees can share technical information is also recommended. The dual career path, for managers and technical staff, is also very important. Employees who want to remain as technical should be supported and given the same privileges as their colleagues in management. It is also suggested that by introducing the coaching concept, new employees will be more easily adapted to the company and its culture.

#### **4.2. Recommendations for Further Research**

In this research, the main idea was to make an attempt to establish an innovative culture in a Turkish software company. The current and preferred organizational cultures were assessed and actions were proposed. This research

will be fulfilled if the proposed model can be observed to reach its goal: to establish an innovative culture. The real process of establishing a culture is not easy and it does not happen in the short run, especially in this case, when the preferred culture is much more different than the current one. The proposed model can be tested to see if it reaches its goal of establishing an innovative culture. Tactical plans based on the model should be prepared and put into practice. Training should be planned and organized. The separation of R&D Programs from the Engineering Directorate should be planned and put into practice. Creating separate R&D processes should also be planned. The change in the performance appraisal and measurement system should be studied and put into practice. Then after implementing the changes, every year the same assessment can be performed to see if there is a change in the perceived organizational culture. After five years, the actual assessment that will show if the model works or not should be tested.

This research is a starting point of a much harder work. If the company really wants to establish an innovative culture it has a lot of work to do. This research helps the company to see where it stands in the present time and how its employees see the company. This research also provides a model that can be used in the change process. Everything put aside, top management should dedicate themselves to establishing an innovative culture, promoting and supporting innovativeness. Without their actual commitment, every effort will be useless in the change process.

Cameron and Quinn (1999) provide average cultural profiles for different industry groups. They also provided an average cultural profile of more than 1000 companies they studied. According to the average cultural profile, MARKET culture is the dominant one. Also in a High-Tech Manufacturer firm, ADHOCRACY is seen to be the dominant one. The current culture of the case study organization and the organizations provided by Cameron and Quinn (1999) do not resemble. The main reason behind this is the culture of nations that affect also the culture of organizations. As a further research, the cross cultural differences can be investigated.

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## **APPENDICES**

### **APPENDIX A:**

Source: Cameron and Quinn, 1999, p: 19-25

The purpose of the OCAI is to assess six key dimensions of organizational culture. In completing the instrument, you will be providing a picture of how your organization operates and the values that characterize it. No right or wrong answers exist for these questions just as there is not right or wrong culture. Every organization will most likely produce a different set of responses. Therefore, be as accurate as you can in responding to the questions so that your resulting cultural diagnosis will be as precise as possible.

You are asked to rate your organization in the questions. To determine which organization to rate, you will want to consider the organization that is managed by your boss, the strategic business unit to which you belong, or the organizational unit in which you are a member that has clearly identifiable boundaries. Because the instrument is most helpful for determining ways to change the culture, you'll want to focus on the cultural unit that is the target for change. Therefore, as you answer the questions, keep in mind the organization that can be affected by the change strategy you develop.

The OCAI consists of six questions. Each question has four alternatives. Divide 100 points among these four alternatives depending on the extent to

which each alternative is similar to your own organization. Give a higher number of points to the alternative that is most similar to your organization. For example, in question one, if you think alternative A is very similar to your organization, alternative B and C are somewhat similar, and alternative D is hardly similar at all, you might give 55 points to A, 20 points to B and C, and five points to D. Just be sure your total equals 100 points for each question.

Note, that the first questionnaire is labeled “Now”. This refers to the culture, as it exists today. After you complete the “Now”, you will find the questions repeated under a heading of “Preferred”. Your answers to these questions should be based on how you would like the organization to look five years from now.

**Table 22 The Organizational Culture Assessment Instrument – Current**

<b>1. Hakim Özellikler (Dominant Characteristics)</b>		<b>Şimdi (NOW)</b>
<b>A</b>	Şirket çok kişisel bir yerdir, geniş bir aile gibidir. İnsanlar kendileri ile ilgili pek çok şey paylaşabiliyor. (The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.)	
<b>B</b>	Şirket çok dinamik ve girişimci bir yerdir. İnsanlar riski göze alarak hareket etmeye, risk almaya can atarlar) (The organization is a very dynamic entrepreneurial place. People are willing to stick their necks out and take risks.)	
<b>C</b>	Şirket sonuç odaklı bir yerdir. En önemli kaygı işin tamamlanmasıdır. İnsanlar rekabetçi ve başarı odaklıdır. (The organization is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.)	
<b>D</b>	Şirket kontrollü ve yapısal bir yerdir. Resmi yöntemler insanların yaptıklarını yönetir. (The organization is a very controlled and structured place. Formal procedures generally govern what people do.)	
<b>Toplam (Total)</b>		0
<b>2. Organizasyonel Liderlik (Organizational Leadership)</b>		<b>Şimdi (NOW)</b>
<b>A</b>	Şirketteki liderlik genel olarak yol gösterme, kolaylaştırma ve öğretme konularında örnek olma şeklinde algılanır. (The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.)	
<b>B</b>	Şirketteki liderlik genel olarak girişimcilik, yaratıcılık ve risk alma konularında örnek olmak şeklinde algılanır. (The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.)	
<b>C</b>	Şirketteki liderlik genel olarak saldırgan, sonuç-odaklı olma özellikleri ortaya koyar. (The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.)	
<b>D</b>	Şirketteki liderlik genel olarak koordine etme, düzenleme ve verimlilik konularında örnek olmak şeklinde algılanır. (The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.)	
<b>Toplam (Total)</b>		0

<b>3. Çalışanları Yönetmek (Management of Employees)</b>		<b>Şimdi (NOW)</b>
<b>A</b>	Şirketteki yönetim stili, takım çalışması, fikir birliği ve katılım olarak nitelendirilir. (The management style in the organization is characterized by teamwork, consensus, and participation.)	
<b>B</b>	Şirketteki yönetim stili, bireysel risk alma, yaratıcılık, özgür hareket etme ve farklılaşma olarak nitelendirilir. (The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.)	
<b>C</b>	Şirketteki yönetim stili, sıkı rekabetçilik, yüksek hedefler ve başarı olarak nitelendirilir. (The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.)	
<b>D</b>	Şirketteki yönetim stili, istihdam güvenliği, kurallara uygunluk, tahmin edebilme ve tutarlılık olarak nitelendirilir. (The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.)	
<b>Toplam (Total)</b>		<b>0</b>
<b>4. Organizasyon Birliği (Organization Glue)</b>		<b>Şimdi (NOW)</b>
<b>A</b>	Şirketi bir arada tutan, sadakat ve karşılıklı güvendir. Şirkete bağlılık yüksektir. (The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.)	
<b>B</b>	Şirketi bir arada tutan, yaratıcılığa ve geliştirmeye olan bağlılıktır. Teknolojinin önünde olma vurgulanmaktadır. (The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.)	
<b>C</b>	Şirketi bir arada tutan, başarmak ve hedeflere ulaşmaktır. Saldırganlık ve kazanma ortak konulardır. (The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.)	
<b>D</b>	Şirketi bir arada tutan, resmi kurallar ve ilkelerdir. Düzenli işleyen bir organizasyonu idame ettirmek önemlidir. (The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.)	
<b>Toplam (Total)</b>		<b>0</b>

<b>5. Stratejik Önemler (Strategic Emphases)</b>		<b>Şimdi (NOW)</b>
<b>A</b>	Şirket insane gelişimine önem vermektedir. Yüksek güven, açık olma ve katılımcılık sürekli dir. (The organization emphasizes human development. High trust, openness, and participation persist.)	
<b>B</b>	Şirket yeni kaynaklar elde etmeye ve yenilikler yaratmaya önem vermektedir. Yeni şeyler denemeye ve yeni fırsatlar araştırmaya değer verir. (The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.)	
<b>C</b>	Şirket rekabetçi davranışlara ve başarıya önem vermektedir. Zor hedeflere ulaşmak ve pazarda kazanma arzusu hakimdir. (The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.)	
<b>D</b>	Şirket sürekli dir ve istikrara önem verir. Verimlilik, kontrol ve düzgün şleyiş önemlidir. (The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.)	
<b>Toplam (Total)</b>		<b>0</b>
<b>6. Başarı Kriteri (Criteria of Success)</b>		<b>Şimdi (NOW)</b>
<b>A</b>	Başarının temelindeki faktörlerin; insane kaynaklarının, takım çalışmasının, çalışan bağlılığının ve insanların ilgi alanlarının gelişimi olduğu düşünülür. (The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.)	
<b>B</b>	Başarının temelinde en eşsiz ve yeni ürünlere sahip olma yatmaktadır. Şirket ürün lideri ve yaratıcıdır. (The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.)	
<b>C</b>	Başarının temelinde pazarda birinci olma ve rakipleri geçme yatmaktadır. Pazar lideri olmak kritik faktördür. (The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.)	
<b>D</b>	Başarının temelinde verimlilik yatmaktadır. Güvenilir teslimat, düzgün zamanlama ve düşük maliyetli üretim çok kritiktir. (The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.)	
<b>Total</b>		<b>0</b>

**Table 23 The Organizational Culture Assessment Instrument – Preferred**

<b>1. Hakim Özellikler (Dominant Characteristics)</b>		<b>İstenen (Preferred)</b>
<b>A</b>	Şirket çok kişisel bir yerdir, geniş bir aile gibidir. İnsanlar kendileri ile ilgili pek çok şey paylaşabiliyor. (The organization is a very personal place. It is like an extended family. People seem to share a lot of themselves.)	
<b>B</b>	Şirket çok dinamik ve girişimci bir yerdir. İnsanlar riski göze alarak hareket etmeye, risk almaya can atarlar) (The organization is a very dynamic entrepreneurial place. People are willing to stick their necks out and take risks.)	
<b>C</b>	Şirket sonuç odaklı bir yerdir. En önemli kaygı işin tamamlanmasıdır. İnsanlar rekabetçi ve başarı odaklıdır. (The organization is very results oriented. A major concern is with getting the job done. People are very competitive and achievement oriented.)	
<b>D</b>	Şirket kontrollü ve yapısal bir yerdir. Resmi yöntemler insanların yaptıklarını yönetir. (The organization is a very controlled and structured place. Formal procedures generally govern what people do.)	
<b>Toplam (Total)</b>		<b>0</b>
<b>2. Organizasyonel Liderlik (Organizational Leadership)</b>		<b>İstenen (Preferred)</b>
<b>A</b>	Şirketteki liderlik genel olarak yol gösterme, kolaylaştırma ve öğretme konularında örnek olma şeklinde algılanır. (The leadership in the organization is generally considered to exemplify mentoring, facilitating, or nurturing.)	
<b>B</b>	Şirketteki liderlik genel olarak girişimcilik, yaratıcılık ve risk alma konularında örnek olmak şeklinde algılanır. (The leadership in the organization is generally considered to exemplify entrepreneurship, innovating, or risk taking.)	
<b>C</b>	Şirketteki liderlik genel olarak saldırgan, sonuç-odaklı olma özellikleri ortaya koyar. (The leadership in the organization is generally considered to exemplify a no-nonsense, aggressive, results-oriented focus.)	
<b>D</b>	Şirketteki liderlik genel olarak koordine etme, düzenleme ve verimlilik konularında örnek olmak şeklinde algılanır. (The leadership in the organization is generally considered to exemplify coordinating, organizing, or smooth-running efficiency.)	
<b>Toplam (Total)</b>		<b>0</b>

<b>3. Çalışanları Yönetmek (Management of Employees)</b>		<b>İstenen (Preferred)</b>
<b>A</b>	Şirketteki yönetim stili, takım çalışması, fikir birliği ve katılım olarak nitelendirilir. (The management style in the organization is characterized by teamwork, consensus, and participation.)	
<b>B</b>	Şirketteki yönetim stili, bireysel risk alma, yaratıcılık, özgür hareket etme ve farklılaşma olarak nitelendirilir. (The management style in the organization is characterized by individual risk-taking, innovation, freedom, and uniqueness.)	
<b>C</b>	Şirketteki yönetim stili, sıkı rekabetçilik, yüksek hedefler ve başarı olarak nitelendirilir. (The management style in the organization is characterized by hard-driving competitiveness, high demands, and achievement.)	
<b>D</b>	Şirketteki yönetim stili, istihdam güvenliği, kurallara uygunluk, tahmin edebilme ve tutarlılık olarak nitelendirilir. (The management style in the organization is characterized by security of employment, conformity, predictability, and stability in relationships.)	
<b>Toplam (Total)</b>		<b>0</b>
<b>4. Organizasyon Birliği (Organization Glue)</b>		<b>İstenen (Preferred)</b>
<b>A</b>	Şirketi bir arada tutan, sadakat ve karşılıklı güvendir. Şirkete bağlılık yüksektir. (The glue that holds the organization together is loyalty and mutual trust. Commitment to this organization runs high.)	
<b>B</b>	Şirketi bir arada tutan, yaratıcılığa ve geliştirmeye olan bağlılıktır. Teknolojinin önünde olma vurgulanmaktadır. (The glue that holds the organization together is commitment to innovation and development. There is an emphasis on being on the cutting edge.)	
<b>C</b>	Şirketi bir arada tutan, başarmak ve hedeflere ulaşmaktır. Saldırganlık ve kazanma ortak konulardır. (The glue that holds the organization together is the emphasis on achievement and goal accomplishment. Aggressiveness and winning are common themes.)	
<b>D</b>	Şirketi bir arada tutan, resmi kurallar ve ilkelerdir. Düzenli işleyen bir organizasyonu idame ettirmek önemlidir. (The glue that holds the organization together is formal rules and policies. Maintaining a smooth-running organization is important.)	
<b>Toplam (Total)</b>		<b>0</b>



<b>5. Stratejik Önemler (Strategic Emphases)</b>		<b>İstenen (Preferred)</b>
<b>A</b>	Şirket insane gelişimine önem vermektedir. Yüksek güven, açık olma ve katılımcılık sürekli dir. (The organization emphasizes human development. High trust, openness, and participation persist.)	
<b>B</b>	Şirket yeni kaynaklar elde etmeye ve yenilikler yaratmaya önem vermektedir. Yeni şeyler denemeye ve yeni fırsatlar araştırmaya değer verir. (The organization emphasizes acquiring new resources and creating new challenges. Trying new things and prospecting for opportunities are valued.)	
<b>C</b>	Şirket rekabetçi davranışlara ve başarıya önem vermektedir. Zor hedeflere ulaşmak ve pazarda kazanma arzusu hakimdir. (The organization emphasizes competitive actions and achievement. Hitting stretch targets and winning in the marketplace are dominant.)	
<b>D</b>	Şirket sürekli dir ve istikrara önem verir. Verimlilik, kontrol ve düzgün şleyiş önemlidir. (The organization emphasizes permanence and stability. Efficiency, control and smooth operations are important.)	
<b>Toplam (Total)</b>		<b>0</b>
<b>6. Başarı Kriteri (Criteria of Success)</b>		<b>İstenen (Preferred)</b>
<b>A</b>	Başarının temelindeki faktörlerin; insane kaynaklarının, takım çalışmasının, çalışan bağlılığının ve insanların ilgi alanlarının gelişimi olduğu düşünülür. (The organization defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.)	
<b>B</b>	Başarının temelinde en eşsiz ve yeni ürünlere sahip olma yatmaktadır. Şirket ürün lideri ve yaratıcıdır. (The organization defines success on the basis of having the most unique or newest products. It is a product leader and innovator.)	
<b>C</b>	Başarının temelinde pazarda birinci olma ve rakipleri geçme yatmaktadır. Pazar lideri olmak kritik faktördür. (The organization defines success on the basis of winning in the marketplace and outpacing the competition. Competitive market leadership is key.)	
<b>D</b>	Başarının temelinde verimlilik yatmaktadır. Güvenilir teslimat, düzgün zamanlama ve düşük maliyetli üretim çok kritiktir. (The organization defines success on the basis of efficiency. Dependable delivery, smooth scheduling and low-cost production are critical.)	
<b>Total</b>		<b>0</b>