ANALYSIS OF ORGANISATIONAL ROUTINES TO UNDERSTAND CHANGE IN CONSTRUCTION: THE CASE OF TURKISH CONSTRUCTION INDUSTRY

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ABSTRACT

ANALYSIS OF ORGANISATIONAL ROUTINES TO UNDERSTAND CHANGE IN CONSTRUCTION: THE CASE OF TURKISH CONSTRUCTION INDUSTRY

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Surrounding business environment, opportunities and requirements of organizations are under constant change. According to the evolutionary economics, organizations continuously make efforts to adapt themselves in line with changing circumstances of environments where they operate. In exploration of organizational change, organizational routines are recognized as the key analysis units. It is because when a change plan is required, routines undergo design or redesign processes.

The construction industry literature is quite limited in terms of explorations regarding to organizational routines evolution. In this study, an attempt has been made to support the arguments, which claim; organizations react to external pressures through modifying their organizational routines. The objective is fulfilled by demonstrating original evidences of adaptation processes of two organizational routines of Turkish construction firms', which were influenced by Turkish construction industry environmental evolution over the past twenty years.

Within this context, a questionnaire survey was administered to three Turkish construction professionals, in order to detect industry change drivers and events and their impact of organizational performance features. Business development and claim management routines were identified by industry survey respondents, as the two mostly changed routines over the past twenty years. Conducting further interviews with two Turkish Construction firms, the organizational evolutionary processes of these two routines, which were born as the reflection to the detected main industry change events, are mapped and investigated.

Research findings detected the principle change drivers of Turkish construction industry over the past twenty years as “Political”, “Economic Conditions” and “Socio-Cultural Conditions” factors. "The markets, where companies operate" and “The internationalization of Turkish contractors” are also recognized as the major determinants of organizational change of Turkish construction firms over the past twenty years. It is observed that the construction industry evolution influenced business development routine of the case study A, by making changes in “market focus”, “types of clients”, “strategy making”, “company experience acquisition”,” ways of finding job opportunities” and “marketing opportunities”. In the case study B, on the other hand, industry evolution changed its claim management routine by adding more steps to its processes; in order to meet the continuously increasing expectations of clients’ in different markets.

Keywords: Turkish Construction Industry Environmental Evolution, Organizational Change, Organizational Routines

ÖZ

YAPI SEKTÖRÜNÜN DEĞİŞİMİNİ ANLAMAK İÇİN ORGANİZASYON RUTİNLERİN ANALİZİ : TÜRK İNŞAAT SEKTÖRÜ VAKASI

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Bir organizasyonu çevreleyen iş ortamı ile olanak ve gereklilikler sürekli bir değişiklik içindedir. Evrimsel ekonomiye göre, organizasyonlar işlev gördükleri ortamın değişken koşullarına göre kendilerini ayarlayabilmek için sürekli bir gayret harcamaktadırlar. Organizasyonların içinde gerçekleşen bu değişiklikleri inceleyebilmek amacıyla, organizasyon rutinlerinin ana analiz birimleri olarak kullanıldığı bilinmektedir . Bunun sebebi, bir değişiklik planına ihtiyaç duyulduğu durumda, rutinlerin tasarlanması ya da yeniden tasarıma tabi tutulması gerekliliğidir.

Yapı endüstrisine dair literatürde, organizasyon rutinlerinin evrimine ilişkin çalışmalar oldukça kısıtlı sayıdadır. Bu çalışma, son yirmi yıllık Türk yapı endüstrisi evrimi tarafından etkilenmiş olan iki adet Türk yapı firmasının organizasyon rutinlerinin adaptasyon süreçlerine dair orjinal kanıtlar öne sürerek, organizasyonların dışarıdan gelen baskılara, kendi rutinlerini değiştirerek karşılık verdiği argümanını destekleyecek bir nitelik taşımaktadır.

Bu amaçla, üç adet Türk yapı firmasının deneyimli yöneticilerine bir anket uygulanmış ve endüstride gerçekleşen değişiklikler ve bunların itici kuvvetleri ile

bütün bunların bir organizasyonun performans özellikleri üzerindeki etkileri incelenmeye çalışılmıştır. İş geliştirme rutini ile hak talep (claim) yönetim rutininin, anketin uygulandığı kişiler tarafından son yirmi yılda en çok değişikliğe uğramış iki rutin olarak tanımlandığı görülmüştür. Ayrıca, iki adet Türk Yapı firması ile yapılan görüşmeler aracılığıyla, temel endüstriyel değişikliklere bir reaksiyon olarak gerçekleşmiş olan bu rutinlere ait evrimsel süreçler haritalandırılmış ve incelenmiştir.

Araştırma sonuçları, Türk yapı endüstrisinin son yirmi yılda uğradığı değişiklikleri açıklayan en itici faktörlerin "Politika", "Ekonomik Koşullar ve "Sosyo-Kültürel Koşullar" olduğunu göstermektedir. "Şirketlerin iş yaptıkları pazarlar" ve "uluslararasılaşma" da Türk yapı firmalarının son yirmi yılda yaşadıkları organizasyon değişikliklerinin ana belirleyicileri olarak ön plana çıkmıştır. Yapı endüstrisi evriminin, örnek şirket A'da görülen iş geliştirme rutinini, "pazar hedefi", "müşteri tipi", "strateji geliştirme", "şirket deneyim birikimi", "iş bulma olanakları", ve "pazarlama olanakları"nda değişiklikler yaparak etkilediği gözlemlenmiştir. Örnek şirket B'de ise, endüstri evriminin hak talepleri (claim) rutinini, farklı pazarlardaki müşterilerin artan beklentilerini karşılayabilmek amacıyla, süreçlere fazladan adım ekleyerek değiştirdiği görülmektedir.

Anahtar Kelimeler: Türk Yapı Endüstrisi Evrimi, Organizasyonsal Değişiklik, Organizasyon Rutinleri

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Dedicated to my family...

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

LIST OF ABBREVIATIONS

BOT	Build-Operate-Transfer
CIS	Commonwealth of Independent States
HRM	Human Resource Management
ENR	Construction, Building and Engineering News
ISO	International Organization for Standardization
PESTEL	Political, Economic, Socio-cultural, Technological, Environmental, Legal
QCR	Quality Control Report
REA	Request Equitable Adjustment
TCA	Turkish Contractors Association
TUBA	Turkish Academy of Sciences
USSR	Union of Soviet Socialist Republics

CHAPTER 1

INTRODUCTION

This chapter initially presents the argument and aim of the current study. Thereafter, it extends by reporting a brief research methodology and introducing contents of the following chapters.

1.1. Argument

As a result of repetitive alterations in surrounding business environment, opportunities and requirements of organizations; change has turned into one of the inherent characteristics of organizations (Raineri, 2010). Literally, it is a strategy undertaken by organizations to not only survive but also remain competitive in the ever-changing environments (Burnes, 2004).

According to the evolutionary economics (Nelson and Winter, 1982); organizations consistently adapt themselves in a "process of creative destruction" in an effort to excel other competitors through enhancing compatibility with the ever-changing environment. As a consequence, Schumpeter (1934) defined the remarkably successful organizations as the most adaptive ones.

Organizational Changes may be developed as a result of exogenous pressures like novel technologies, new markets or changed laws and regulations or internal choices such as change in personnel or changed polices and processes (Kauppinen *et al.*, 2011). "Globalization" and" Technological change" are identified as the prominent change drivers of corporate strategies and structures over the recent past years (e.g. Kay, 2002; Markides, 1995; Whittington and Mayer, 2000).

In order to get adapted to the change impacts, organizations frequently exercise novel practices in their structures, strategies or business models (Raineri, 2010). Leaders of companies are frequently involved in seeking and executing new methods and techniques to change favorably in order to make their organizations capable of adapting to the constraints of the prevalent markets (Choi and Ruona, 2011). They are interested in fine-tuning their business strategies and implementing value-added systems to successfully manage the performance of the organizations.

In order to analyze organizational change, many researchers recognized organizational routines as the key analysis unit (e.g. Aldrich, 1999; Hodgson and Knudsen, 2004; Nelson and Winter, 1982). "Organizational routines" are defined as the main elements of the organizational structure, by which organizations execute their performances (e.g. Cyert and March, 1963; Hannan and Freeman, 1984; Levitt and March, 1988; March and Simon, 1993; Nelson and Winter, 1982). Although in the relevant literature, many researchers defined routines as a "repetitive stable pattern of behavior"; i.e. as the source of inertia in organizations (e.g. Bresnen *et al.*, 2005; Levinthal and March, 1993), recent researches reveal that routines can be regarded as a source of flexibility and change (e.g. Feldman, 2004; Feldman and Pentland, 2003).

The role of routines in organizational change process is highlighted by proposition of Cohen and Bacdayan (1994) which declares that when a change plan is required, routines undergo design or redesign process.

This research supported the arguments claiming that organizations react to external pressures through changing their organizational routines.

1.2. Objective

Regarding the construction industry literature, limited numbers of studies have been conducted to explore organizational change concept. Particularly the focus in examination of change through analysis of organizational routines processes is neglected.

Recognizing the gap in the literature on empirical investigation of the influence of construction industry environmental evolution on organizational routines through tracing routines' adaptation processes, the objective of the current research was set to bridge the gap reflecting case studies from Turkish contractors. Original evidences from two Turkish construction firms were used in mapping and tracing the routines' adaptation processes.

With regard to the construction industry, three factors of "Uniqueness", "Immobility" and "High variety" of construction projects make it considerably different from other industries (Eccles, 1981a and 1981b). Taking into account the above-mentioned factors, examining routines of the construction firms in order to detect what changes have took place is not an easy task, as construction industry is project-based and processes at the project level tend to change accordingly in order to meet the needs and expectations of the clients and project requirements.

This research focuses on providing professionals with several key insights into anticipating the influence of the future industry changes on the organizations by (1) reviewing the models/concepts of organizational change, (2) highlighting the importance of organizational routines in analyzing organizational change, (3) presenting the recent main industry change determinants and events, (4) describing the influence of industry changes on organizations, and (5) empirically demonstrating the evolution of two case study organizational routines, impacted by industry evolution, which enables managers of organizations to previously plan for the probable industry change impacts on the organizations.

1.3. Methodology

The objective of this research was initially addressed via literature-based reviews and running brainstorming sessions to prepare a questionnaire. Subsequently, three pilot qualitative individual interviews were conducted with senior managers of Turkish Construction sector. Oral History-based interview is offered as a proper method for this purpose, which is appropriate to provide historical data that is combined with insights and experiences of the data collecting sources (Yow, 1994). During the interviews, the respondents were asked to respond to the questions of a previously prepared questionnaire. They were requested to explain the impact and magnitude of the PESTEL environmental analysis factors, i.e. all the political, economic and social events, laws, standards and technologies that affected the Turkish construction industry over the past twenty years, and finally explain the impact of the industry change events on the company performance features. Incorporating drivers of industry change and change events, a map was constructed, utilizing cognitive mapping technique to visualize the external pressures causing organizational change in Turkish Construction Companies. This method is distinguished as an efficient visual tool to mirror the ideas and beliefs of a group of people, related to causes and effects of an event and their internal relationships. This technique of representation is recognized as more effective approach than other verbal explanations (Atasoy, 2007).

Furthermore, during the industry survey, two organizational routines were introduced by the respondents as significantly evolved over the past twenty years. The evolutionary processes of two organizational routines, influenced by Turkish construction industry evolution over the past twenty years, were explored by selecting the case study companies and conducting interviews with their managers.

1.4. Disposition

The current dissertation is composed of five chapters. The introduction chapter stands as the Chapter 1. The Chapter 2 presents the literature review on organizational change and organizational routines. The research methodology is reported in Chapter 3.

In Chapter 4, the constructed change map is presented and the overall impacts, resulting in organizational change, are discussed. Moreover, the flowcharts of two case study organizational routines, before and after the changes are demonstrated. Finally, the justifications of the changes occurred in organizational routines, adapted to the construction industry evolution over the past twenty years, are explained in detail.

The last chapter, which is Chapter 5, demonstrates a brief outline and findings of the study together with its bottlenecks and a discussion for future researchers.

Additionally, Appendix A covers the prepared questionnaire used for identification of the Turkish industry change drivers, change events and their impact on performance features of the companies.

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CHAPTER 2

RESEARCH BACKGROUND

This chapter covers the background of the current study in two main sections. In the first section, the concept of change, organizational change, its definitions and classifications, various attitudes toward organizational change, prevailing perspectives on organizational change, models of organizational change and conducted empirical studies in the literature related to the organizational change topic are presented. Second section, on the other hand, explores the definitions of organizational routines, its characteristics, difficulties of understanding, and its organizational role and causes of change.

2.1. Organizational Change

2.1.1. Change Definition

Exploring the literature, the definition of change differs according to the various perspectives. The concept of change has been perceived and defined differently by various researchers such as Van de Ven and Rogers (1988), Porras and Robertson (1992), Huber *et al.* (1993), Ford and Ford (1994).

Table 2-1 presents some of the different definitions of change within the literature.

Table 2-1: Definitions of Change

Source	Definition
Van de Ven and Rogers (1988)	"Observation of differences in time on one or more dimensions of an entity."
Ford and Ford (1994)	"Change is a phenomenon of time. It is the way people talk about the event in which something appears to become, or turn into, something else, where the something else is seen as a result or outcome."
Huber *et al.* (1993)	"Change involves differences in how an organization functions, who its members and leaders are, what form it takes, or how it allocates its resources."
Porras and Robertson (1992)	"Change is a set of behavioral science-based theories, values, strategies, and techniques aimed at the planned change of the organizational work setting for the purpose of enhancing individual development and improving organizational performance, through the alteration of organizational members' on-the-job behaviors."

2.1.2. Organizational Change Definition

Exploring the literature on "Organizational Change", there are several definitions denoted by researchers such as Daft (1998), Wagner and Hollenbeck (1998), Valle (2002), Struckman and Yammarino (2003), as shown in Table 2-2.

Table 2-2: Definitions of Organizational Change

Source	Definition
Daft (1998)	"The adoption of a new idea or behavior by an organization".
Wagner and Hollenbeck (1998)	"The act of varying or altering conventional ways of thinking or behaving".
Valle (2002)	"Process of identification and implementation of new organizational routines and practices."
Struckman and Yammarino (2003)	"Organizational change is a managed system, process, and/or behavioral response over time to a trigger event".

2.1.3. Classifications of Organizational Change

Reviewing the literature, several studies categorized concept of organizational change, focusing on different aspects. For example, Weick and Quinn (1999) proposed the taxonomy of radical change versus evolving change for organizations. While radical change involves "the transformation of the organization", the continuous change is "fine tuning the existing orientation" (Greenwood and Hinings, 1996). The difference between radical and continuous change has also been a source of concern for other researchers in organizational field. This contrast highlights the differences in the observation perspectives. While, from a macro level analysis viewpoint, the flow of events seems as routines and repetitive actions, from micro level of analysis viewpoint, they seem as continuous adaptation and adjustment,

which are capable of changing structure and strategy (Weick and Quinn, 1999). Orlikowski (1996) also treats continuous adaptations as the core concept of organizational change.

From another perspective, conventional organizational change theories are classified into two different categories. While Bennis (1966) classified organizational change as theory of change and the theory of changing, Porras and Robertson (1987) categorized it as change process theories and implementation theories. While the former one is associated with dynamics, created by change in organizations, the latter explains how to manage change process in organizations.

2.1.4. Attitudes toward Organizational Change

Various attitudes toward change co-exist in literature; scholars investigated organizational change from different perspectives such as "Readiness for Change", "Resistance to Change", "Commitment to change", "Openness to change", "Coping with change", "Acceptance of change", "Adjustment to change", and "Cynicism about organizational change" (Bouckenooghe, 2010).

2.1.5. Prevailing Perspectives on Organizational Change

There are two central challenging perspectives toward change in literature, which are "environmental selection" and "adaptation" perspectives. The former perspective considers organizations as inert, and argues that the main organizational adaptations, regarding to the business environments, happen through the selection of the entire firm (Hannan and Freeman, 1989). The latter perspective, on the other hand, suggests that organizations are flexible entities that adapt themselves to business environments by making changes in their organizational routines (e.g. Cyert and March, 1963; Levitt and March, 1988). Several other researchers considered the two

above-mentioned perspectives as complementary rather than opposing ones (e.g. Singh *et al.*, 1986; Astley and Van de Ven, 1983).

2.1.6. Models of Organizational Change

Reviewing the literature, six main models of organizational change are introduced as evolutionary, teleological, life cycle, dialectical, social cognition, and cultural models. The assumptions of each one of the mentioned models are different, based on their underlying reason, process, duration and outcomes of change (Kezar, 2001).

Evolutionary theory grounds on the basis of assuming change as a response to the external conditions and environments (Morgan, 1986). Teleological or planned change models presume that change happens because organizational leaders find it necessary. (Carnall, 1995) Life-cycle theories concentrate on growth, maturity and organizational decline (Levy and Merry, 1986). Dialectical theories see change as a consequence of clashing ideology (Morgan, 1986). In social-cognition models, change is tied to learning and occurs as a result of members' need to learn and change their behavior. Lastly, in cultural theories the models stands on the fact that "cultures are always changing" and occurrence of change is due to alterations in the human environment (Morgan, 1986). In a study conducted by Van de Ven and Poole (1995), properties of four main organizational change theories of life cycle, evolution, dialectic and teleology are classified as represented in Figure 2-1.

Family	Life Cycle	Evolution	Dialectic	Teleology
Members	Developmentalism Ontogenesis Metamorphosis Stage & cyclical models	Darwinian evolution Mendelian genetics Saltationism Punctuated equilibrium	Conflict theory Dialectical materialism Pluralism Collective action	Goal setting, planning Functionalism Social construction Symbolic interaction
Pioneers	Comte (1798–1857) Spencer (1820–1903) Piaget (1896–1980)	Lamarck (1744–1829) Darwin (1809–1882) Mendel (1822–1884) Gould & Eldridge (1977)	Hegel (1770–1831) Marx (1818–1883) Freud (1856–1939)	Mead (1863–1931) Weber (1864–1920) Simon (1916–)
Key Metaphor	Organic growth	Competitive survival	Opposition, conflict	Purposeful cooperation
Logic	Imminent program Prefigured sequence Compliant adaptation	Natural selection among competitors in a population	Contradictory forces Thesis, antithesis, synthesis	Envisioned end state Social construction Equifinality
Event Progression	Linear & irreversible sequence of prescribed stages in unfolding of immanent potentials present at the beginning	Recurrent, cumulative, & probabilistic sequence of variation, selection, & retention events	Recurrent, discontinuous sequence of confrontation, conflict, and synthesis between contradictory values or events	Recurrent, discontinuous sequence of goal setting, implementation, and adaptation of means to reach desired end state
Generating Force	Prefigured program/rule regulated by nature, logic, or institutions	Population scarcity Competition Commensalism	Conflict & confrontation between opposing forces, interests, or classes	Goal enactment consensus on means cooperation/symbiosis

Figure 2-1: Organizational Change Theories (Van de Ven and Poole, 1995)

Within the context of this study, it was aimed to investigate the impact of external pressures on organizations. For this aim, organizational evolutionary approach was selected since the change process within the framework of this study would be best explained through this model, as discussed in the following sections.

2.1.7. Theoretical Analysis of Organizational Evolution

Within the relevant literature, the behavior of the firm is repeatedly explicated by the evolutionary theory of the organization that is "a theory which defines the structure and the behavior of a firm as an emergent property of the dynamics of interactions of both its constituent parts among each other and of the firm itself with its environment" (Holzl, 2005). Regarding the evolutionary theory approach, the behavior of a firm is understandable by examining its reaction to the detected environmental changes (Cohendet and Llerena, 1998). The underlying assumption, of evolutionary theory proposes that business climates are diversified and complicated systems that naturally evolve as time passes (Kezar, 2001), and the organizations are only capable of managing these changes rather than planning a response for them (Kieser, 1989).

Durand (2006) detected the basis of organizational evolution as "heterogeneous sources", "environmental shifts", "technological races", "multipoint competition" and "global trends economizing effects", "developing market presence", and "accruing profits".

It has been a source of challenge in many disciplines to explain how and why organizations change. In order to understand the concept of organizational change, management scholars received many concepts from other disciples such as biology (Van de Ven and Poole, 1995). Reviewing the literature, two evolutionary focuses exist, which are "evolutionary economics" and "population ecology", both inspired by biological evolution debates. While the first focus is based on economic

properties, the second one grounds on sociological characteristics (Valle, 2002). Both of the above-mentioned focuses suggest that change occurs via a continuous cycle of "variety", "selection" and "retention" (Campbell, 1969). Variety aspect proposes the diversity of the behaviors between firms (Metcalfe and Boden, 1992) that results in the creation of new organizational forms through random chance (Aldrich, 1999; Campbell, 1969). On the other hand, selection of organizations happens as a result of a competition to choose the most appropriate processes for the organization, in other words, its objective is to provide organizational adaptation. Lastly, the retention of organizations includes forces that maintain specific types of organizational forms. Researchers such as Miner (1994) interpreted organizational evolution as the evolution of the different organizational routines through "variation", "selection" and "retention".

According to the population ecology focus, organizational routines are dominated by inertia that confines the organizational adaptation capability (Hannan and Freeman, 1984). Therefore organizational adjustments to the environmental evolution are made through death of the old and birth of the new organizations. On the contrary, from evolutionary economics perspective, organizational adaptation process is parallel to the environmental evolution (Valle, 2002).

In the context of this research, organizational evolution was explained through evolutionary economics approach.

2.1.7.1. Evolutionary Economics Focus

The organizational evolution in economic studies was first introduced by the Alchian (1950). In Alchian's work, the focus was on a stream of incremental changes, occuring as a consequence of environmental influence. This focus of change provides explanations for the organizational development process according to the environments, which organizations operate in (Valle, 2002). In the following years,

many other studies explored the theories of organizational evolution (e.g. Baum 1990; Aldrich and Frost 1999; Aldrich 2000; Eisenhardt and Martin 2000).

In process of organizational evolution by evolutionary economic focus, "Adaptation" is distinguished as the principle driver of change (Vassileva, 2006). Organizations constantly make an effort to ameliorate their compatibility with the environmental changes and exceed their competitors through innovation (Massini *et al*, 2002).

According to Van de Ven and Poole (1995), an evolutionary model of development is constructed based on "variation, selection, and retention" events between organizational entities. This evolutionary cycle is a result of competition among organizations to catch the scarce environmental resources.

2.1.8. Several Studies Regarding to Organizational Change

Most of the studies in the literature related to the organizational change concept are theoretical studies, which explore the relation between organizational change and other organizational attributes. For example, in a study conducted by Kotter and Heskett (1992), organizational evolutionary process is examined from cultural perspective. They asserted that culture provides legitimacy to the activities in the process of adaptation and it holds significant importance in continuous change. It also provides know-how of adaptation into the values of the organization (O.Reilly and Chatman 1996).

Levinthal (1991) highlighted the central role of organizational learning on acceleration of the organizational evolution processes. Several researchers defined organizations as an "entity of learning", whose capabilities are measured according their knowledge and their learning capacity (Foss, 1994; Caccomo, 1995). As this knowledge is mirrored in organizational routines (Valle, 2002), in the way of modification of routines, the role of learning shall not be overlooked. Motivating

individual learning, sharing, and executing the lessons learned expedites the process of change and shapes the organizational memory (Garvin, 1993; Huber, 1991; Watkins and Marsick, 1993). That is why organizational learning is suggested as a prerequisite of prosperous change in many researches (Garvin, 1993; Lundberg, 1995). In order to describe the relationship between the change and learning, several researchers defined change as "a cyclical process of creating knowledge (the change or innovation), disseminating it, implementing the change, and then institutionalizing what is learned by making it part of the organization's routines" (Watkins and Marsick 1993). Lundberg (1995) suggested that in an organization with a stable learning culture, routines are continuously modified.

Accordingly, Vassileva (2006) proposed a conceptual model, by which the evolutionary process of the firms is explained, emphasizing on the importance of organizational knowledge. The model is presented in Figure 2-2. In the proposed model, cycle 1 demonstrates the opportunity identification and transformation, i.e. (F2 – f2 – F3) and (F6 – f4 – F5), while cycle 2 highlights the importance of sufficient knowledge and skills, and appropriate usage of them, in order to be capable of exploitation of the opportunity after its identification. The transformation process indicates the evolution process of the company.

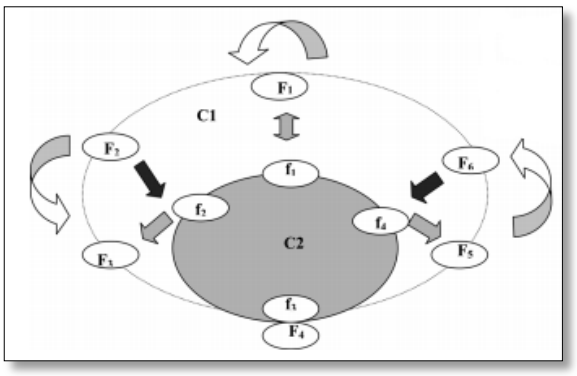

Figure 2-2: C into C Process of Organizational Evolution (Vassileva, 2006)

In 2010, Rees and Johari explored strategic organizational changes, focusing senior managers' attitude toward human resource management (HRM) function, during rapid change. Conducting interviews and analyzing the obtained data, leadership and an established HRM outcome were the factors, distinguished as having the most prominent impact on the performance of the organizations in the time of change.

Massini *et al.* (2002) explored the relation between adaptation/adoption of new organizational routines and practice of technological innovations in large Western and Japanese organizations.

Burgelman (1991) investigated organizational change by combining internal and external selections.

In a study conducted by Van de Ven and Huber (1990), organizational change is treated by investigation of its antecedents and consequences, or its development and suppression.

In 2004, Dulaimi *et al.* explored Singapore's construction industry to identify several methods of stimulating the construction organizations to undergo positive organizational changes in order to improve their performance, focusing on "professional standards", "skills levels", "buildability", "construction safety", and "internationalization" fields. In this study, a considerable amount of support was allotted to market forces to stimulate change in Singapore's construction industry.

Mcgrath-Champ and Rosewarne (2009) detected inclinations toward "Re-engineering" or "Leanness" as the major changes happening in the Australian construction industry. Extension of the subcontracting chain, elimination of the head contractors from the direct operational activities, increase in the self-employment rates, casualization of work, and diminished investment in training were recognized as the impacts of "leanness" tendency on construction organizations.

2.2. Organizational Routines

Individuals operating in an organization, regularly interact with each other, in a repetitive manner. However, the nature of these interactions depend on each member's unique preferences, level of knowledge, the amount of received pay offs, and the surrounding environmental conditions. Therefore, in order to provide coordination in organizations, a series of common rules, routines and standards shall be defined, which can be understood and shared by all of the members of the organization (Cohendet and Llerena, 1998). Organizational routines are defined as the performance programs, which form organizational functioning vehicles (March and Simon, 1958). Several researchers pointed out that substantial amount of work in organizations are executed in a routinized way (Becker and Zirpoli, 2008).

2.2.1. Definition of Organizational Routines

"Organizational Routines" has been defined differently based on the various interpretations of the organizational field researchers such as Winter (1964 and 1986), Nelson and Winter (1982), Koestler (1967), Pentland and Rueter (1994), Feldman (2000), Cohen and Bacdayan (1994), Cohen *et al.* (1996), Gavetti and Levinthal (2000) as represented in Table 2-3.

Table 2-3: Definitions of Organizational Routines

Source	Definition
Winter (1964)	"Pattern of behavior that is followed repeatedly, but is subject to change if conditions change"
Nelson and Winter (1982)	"The organization's genetic material explicitly embedded in bureaucratic rules, as well as implicitly in the organization culture."
Winter (1986)	"Ways of doing things"
Koestler (1967)	"Flexible patterns offering a variety of alternative choices"
Pentland and Rueter (1994)	''Ordered sets of actions'' or ''Grammars of action''
Cohen and Bacdayan (1994)	''Patterned sequences of learned behavior involving multiple actors who are linked by relations of communication and/or authority''
Cohen and Bacdayan (1994)	"Multi-actor, interlocking, reciprocally-triggered sequences of actions"
Cohen *et al.*(1996)	''An executable capability for repeated performance in some context that has been learned by an organization in response to selective pressures''
Feldman (2000)	''Repeated patterns of behavior that are bound by rules and customs and that do not change very much from one iteration to another"
Gavetti and Levinthal (2000)	"Routines reflect experiential wisdom in that they are the outcome of trial and error learning and the selection and retention of past behaviors".

As it is clear from the above definitions, many researchers focused on describing routines as 'patterns' to show the regularity of them. In order to denote the basic characteristics of pattern, four different terms are used in the literature, which are action, activity, behavior and interaction. Action and activity are generally used as synonyms. Behavior, on the other hand, is regarded as a sub-set of action; it is differentiated from action by the fact that the behavior is observable. Interaction is also a sub-set of action, which is done collectively (Becker, 2004).

2.2.2. Characteristics of Organizational Routines

(1) Patterns of interdependent actions, (2) repetition, (3) collective and processual nature, and to be (4) context dependent, (5) specific for a particular organization, and (6) initiated and shaped through time are some of the generally accepted characteristics of routines (Becker, 2004).

Becker (2004) elucidated "collective", "embedded" and "path dependent" nature of organizational routines as their principle characteristics.

Becker (2005) outlined the concept of routines as;

1. "Behavioral regularities": Routines are distinguished as "recurrent interaction patterns" or "regular and predictable behavioral patterns" (Nelson and Winter, 1982).

2. "Rules": Routines are described as 'if–then' rules, "rules of thumb" (Becker 2004), and "standard operating procedures" (Cyert and March, 1963).

3. "Dispositions to express certain behavior": Routines can behave distinctively in different conditions (Hodgson and Knudsen, 2004).

2.2.3. Classifications of Organizational Routines

Feldman and Pentland (2003) divided organizational routines as ostensive and performative classes. The ostensive aspect is related to 'abstract, narrative description', while the performative aspect refers to "actual performances by specific people, at specific times, in specific places". In other words, while the ostensive aspect is the just an "idea"; the performative aspect, is the "enactment".

Routines are also classified into two groups as "higher-order" and "operational" routines. The higher-order routines, which constitute the basis of organizations' dynamic capabilities, are utilized in order to manage the organizational resources. On the other hand, operational routines control day to day actions (Teece *et al.*, 1997; Eisenhardt and Martin, 2000; Zollo and Winter, 2002).

Cohen *et al.* (1996) also categorized organizational routines into two classes as "complicated" and "unconscious" behaviors versus "plain" and "conscious rules".

2.2.4. Difficulties of Understanding the Organizational Routines

Due to three principle characteristics of routines, it is argued that understanding organizational routines is a difficult task (Cohen and Bacdayan, 1994).

- The dispersed nature of Organizational Routines: As they are executed by multiple actors, observation of routines is more difficult comparing with single-actor phenomenon.
- The emerging quality of Organizational Routines: This characteristic of the routines provides stimulating situations for evolution of routines through gradual multi-actor learning.

- The inability of the individual actors of different parts of the routine to articulate the underlying knowledge of a particular routine.

“Social”, “technological”, “motivational” and “cognitive” nature of organizational routines makes it difficult to utilize routines in order to analyze organizational change (Becker *et al.,* 2005).

2.2.5. Role of Organizational Routines

Nelson (1994) explained the role of routines in organizations as "A firm can be understood in terms of hierarchy of practiced organizational routines, which define lower order organizational skills and how these skills are coordinated and higher order decision procedures for choosing what is to be done at the lower level".

Researchers such as Stinchcombe (1990), and March and Simon (1958) emphasized on the central role of routines in providing efficient organizational structures.

According to Becker’s study (2004), routines affect organizations by codifying the activities, establishing a truce, economizing cognitive resources, diminishing the uncertainty, constructing stability and accumulating knowledge.

Developing structured routines and communication channels enables organizations to appropriately deal with the complicated environmental circumstances (Deutsch, 1952).

Holzl (2005) described the behavior of a firm by its technological capabilities, and individual skills and decision rules, which are internally linked together by means of routines. The integration of the skills at an individual level with routines at an organizational level forms the knowledge repository of the firm, which is not easily transferable (Holzl, 2005).

From another perspective, organizational routines were defined as the central segment of organizational capabilities (Gong *et al.*, 2005). Several models of "capability development" proposed that the organizational capabilities are constructed on the basis of the current exercising routines, or they are being strengthened by replacement of the extinct routines (e.g. Nelson and Winter, 1982; Teece *et al.*, 1997).

Gong *et al.* (2005) shed light on the importance of organizational routines and capabilities in organizational "survival and prosperity". They defined organizational capabilities as "An organization has a capability when it can reliably perform particular activities or reliably accomplish particular classes of intended outcomes at or above a given performance level."

Evolutionary economics points out that organizational operation is heavily based on routinized behaviors and processes, i.e. organizational routines, which are preserved and reinforced by time (Massini *et al.* 2002).

In a study conducted by Cohen *et al.* (1996), organizational routines are treated as "dynamic systems" with constant framework, which generate various consequences in correspondence with different circumstances**.** Organizational routines, as a regular pattern of interplays, make the "creation", "recombination" and "transfer" of the knowledge possible (Grant, 1996).

Nelson and Winter (1982) claimed that organizational routines and decision-making rules compose the organizational legacy, and also pattern organizational behavior and provide the capability to anticipate future.

Several studies defined organizational routines as the critical factor in comprehending the concept of organizational change and flexibility (Pentland and Feldman, 2005; Howard-Grenville, 2005).

Within the literature, organizational routines are frequently examined, utilizing three different approaches of dealing with routines as black boxes, inspecting only one aspect of routines, and focusing on interactions between several other aspects of routines (Pentland and Feldman, 2005).

2.2.6. Change of Organizational Routines

There are two different views toward the causes of change in routines, which are exogenous and endogenous influences (Bresnen *et al.*, 2005). Some researchers suggest that the change of the routines is because of exogenous impacts such as environmental pressures or managerial decisions (Cohen and Bacdayan, 1994; March *et al.*, 2000). On the other hand, many other researchers think that the change is because of the interaction between ostensive and performative aspects of routines, which is a stimulus of the endogenous change (Orlikowski, 2002; Feldman and Pentland 2003).

Nelson and Winter (1982) asserted that organizational performance is carried out by exercising a bundle of organizational routines, which are adjusted according to the performance feedbacks. If the outcome of execution of a certain routine is not satisfactory anymore, "routine-guided, routine-changing" process is commenced. In other words, by interaction of the parts of the organization, positive feedbacks of the past practices are enhanced and the others are attenuated (Allen 1990). Cyert and March (1963) described performance feedback as a mechanism, by which organizations can determine whether to initiate a change in routines or not. Therefore, the routines are suggested as an efficient analytical lens in examining change in organizations (Becker and Zirpoli, 2008).

Becker *et al.*, (2005) stressed that routines "[. . .] are fundamental to understanding change partly because they provide a basic definition of what change 'really is' at the organizational level".

Feldman (2000) denoted that change of routines is the outcome of "people doing things, reflecting on what they are doing, and doing different things (or doing the same thing differently) as a result of the reflection". As routines change, they are adapted to the new environmental conditions (Pavlov and Bourne, 2011).

The earlier studies of routines centrally focused on describing the concepts of the organizational stability and inertia. However, successive researchers made more effort to describe routines from a dynamic perspective (Pentland and Rueter, 1994; Feldman, 2000; Feldman and Pentland, 2003). Following studies focused on the dynamic characteristics of routines, in order to examine organizational change (Tranfield and Smith, 1998; Zellmer-Bruhn, 2003; Bresnen *et al.*, 2005).

When actors learn from their experiences, they change routines and codify them into action, therefore, the organizational routines are constantly updated (March *et al.*, 2000; see Figure 2-3.).

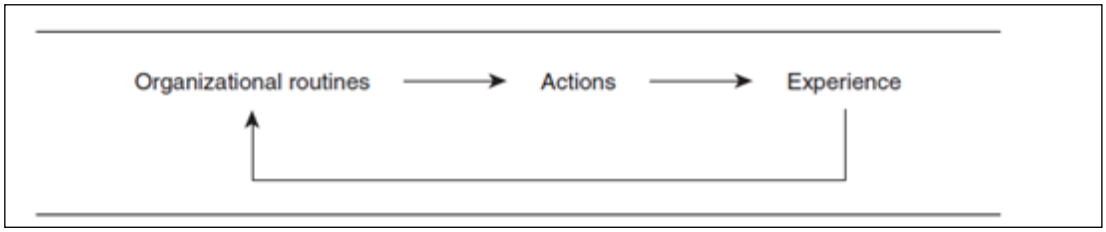

Figure 2-3: Learning Perspective (March *et al.*, 2000)

By application of dynamic capabilities on organizational routines, they are developed and adapted, i.e. they are evolved. "Dynamic capabilities" are comprised of organized procedures to modify the operating routines of the organization (Zollo and Winter, 2002)."Dynamic capabilities" is elucidated as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly

changing environments" (Teece *et al.*, 1997). Zollo and Winter (2002) defined the concept of "dynamic capability" as "a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness." Learning mechanisms are comprised of "experience accumulation", "knowledge articulation", and "knowledge codification", while dynamic capabilities are comprised of "Process RandD", "Restructuring", "Re-engineering", and "Post-acquisition Integration" (Zollo and Winter, 2002).

CHAPTER 3

RESEARCH METHODOLOGY

Reviewing the six main models of organizational change, "Organizational evolution" was chosen as the best model of explaining organizational change, within the context of this study. It is because, organizational evolution presumes change as a response to environmental pressures (Morgan, 1986), and this study aimed to explore change due to the industry evolution.

The mostly known model of organizational evolution proposes that change occurs via a continuous cycle of "variety", "selection" and "retention". The selection element of this model grounds on the premise that change happens as a result of a competition to choose the most appropriate processes for the organization. In other words, its objective is to provide organizational adaptation (Campbell, 1969).

It is observed that an extensive set of studies defined organizational routines as a promising source to investigate organizational change (Becker *et al.,* 2005; Hoeve and Nieuwenhuis, 2006; Nooteboom, 2004). Because organizations react to the environmental changes by modifying their operational routines and standard procedures (Cyert and March, 1963; Levitt and March, 1988). Organizational evolution is also referred as evolution of the different organizational routines through "variation", "selection" and "retention" (Miner, 1994).

Within the context of this study, after detecting the Turkish industry change events over the past twenty years, it was aimed to explore the evolutionary process of two organizational routines, which were impacted by the industry change events. For this aim, two Turkish construction firms were chosen as study cases. Within this framework, it was focused on selection element of "variety, selection and retention",

model of organizational evolution, which recognizes adaptation as the main change driver.

This chapter reports the research methodology in four major sections. The first section describes the questionnaire design, the second section covers preferred method of interview administration together with interview form content, the third section continues with descriptions related to the method of result demonstration. The last section covers the reasons for choosing case study approach in this study.

3.1. Questionnaire Design

This study proposed PESTEL (Political, Economic, Social, Technological, Environmental and Legal) framework, in order to develop an in-depth understanding of the drivers and hurdles of the Turkish construction industry evolution (See Figure 3-1).

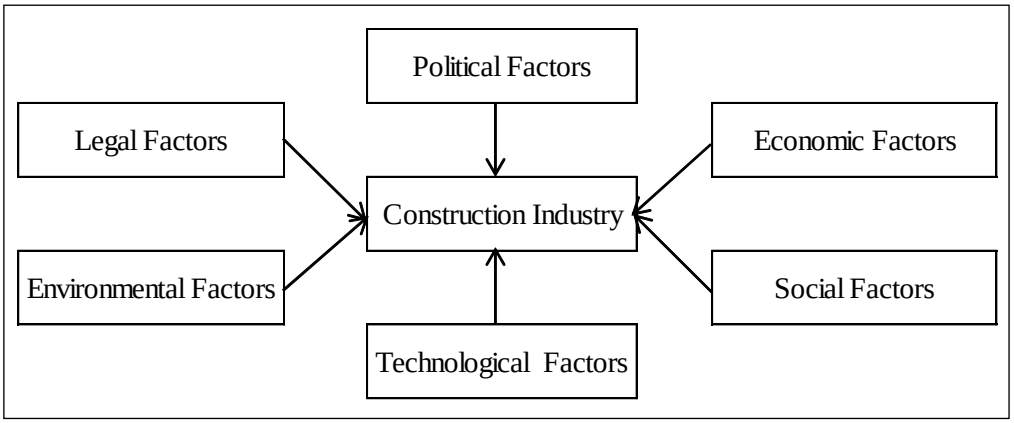

Figure 3-1: PESTEL Framework

As the Turkish construction industry evolution over the past twenty years is concerned, the environmental element (Green Issues) of PESTEL framework is not

as relevant as other factors. Therefore, it is not taken into consideration in preparation of the questionnaire.

Afterwards, running brainstorming sessions, the main company performance features, which are subject to change as industry evolves, were detected (Table 3-1).

Table 3-1: Construction Company Performance Features Chart

Company Performance Features
Profitability
Level of Institutionalization
Managerial Ability
Technical Skills
Business Culture

An initial questionnaire was prepared, practicing PESTEL macro environmental analysis factors, and detected company performance features. The questionnaire covers four sections, containing a general information part and three main sections, which are designed in order to (1) identify the change drivers and change events of Turkish construction industry, (2) discuss industry change impacts on performance features of construction firms, and (3) recognize the mostly evolved organizational routines of construction firms over the past twenty years.

Each section entails several questions. After explaining the principle aim of the research to the respondents, they were requested to answer the inquired questions.

3.2. Performing the Interviews

Three pilot face-to-face interviews were performed with respondents at the managerial level of the Turkish construction firms. Oral history interview method was utilized to perform interviews. Each interview lasted for approximately 2 hours. Three large construction companies got involved in this research, all of which are the members of the Turkish Contractors Association (TCA).

The Table 3-2 shows the age of the respondent companies and titles of the interviewees.

Table 3-2: Information about the Professionals

Professionals	Current Position in the Company	The Number of Years That the Company Has Been Active in the Construction Sector
Professional 1	General Manager	20 Years
Professional 2	General Manager	48 Years
Professional 3	President	18 Years

3.2.1. Oral History Methodology

McCarthy (2010) identified oral history interview as the most suitable method for proper documentation and historical inquiry. Perks and Thomson (1998) considered oral history as an efficient tool of exposing overlooked topics and deamonstrating various aspects of them. Yow (1994) defined oral history as the result of the interaction between the narrator and interviewer. Sutherland (1988) shed light on the

fact that collecting historical events by means of oral history approach also enables individuals to interpret the events from their own point of view. Yow (1994) referred to oral history as a form of information that enables the public documents more conceivable.

3.2.1.1. Definitions of Oral History

Table 3-3 presents some of the definitions of oral history as made by a number of researchers such as Okihiro (1981), Allen and Montell (1981), Henige (1982), Seldon and Pappworth (1983), Ritchie (1995), Portelli (1997), Perks and Thomson (1998), and Yow (1994).

Table 3-3: Definitions of Oral History

Source	Definition
Okihiro (1981)	“The recollections of a single individual who participated in or was an observer of the events to which s/he testifies.”
Allen and Montell (1981)	"By which oral information about the past is collected and recorded" and to "the body of knowledge that exists only in peoples' memories”.
Henige (1982)	"By means of life histories or personal recollections where informants speak about their own experiences".
Seldon and Pappworth (1983)	"Information transmitted orally, in a personal exchange, of a kind likely to be of historical or long-term value."
Ritchie (1995)	“Collection of spoken memories and personal commentaries of historical significance through recorded interviews".
Portelli (1997)	“Oral history expresses the awareness of the historicity of personal experience and of the individual's role in the history of society and in public events."
Perks and Thomson (1998)	“The interviewing of the eye -witness participants in the events of the past for the purpose of the historical reconstruction.”
Yow (1994)	“The recorded in-depth interview”

3.2.1.2. Limitations and Advantages of Oral History Method

Allen and Montell (1981) identified the advantages of the oral history method as its main role in providing data, which is not available in the recorded documents, and a complementary tool for the existing data.

On the other hand, there are a number of drawbacks and limitations in managing studies, employing oral history method. Dunaway and Baum (1984) mentioned the first stage of conducting an oral history interview as identification of the "significant sources". Hodysh and McIntosh (1988) supported the importance of "significant sources" and referred to the objectiveness of the data collecting sources as the most critical limitation of oral history approach.

Grele (1973) mentioned "the possibility for distortion in the interview while little discussion has focused on the exact nature of the oral document which is the end product of that interview" as the main concern in writing oral history. Yow (1994) was concerned about the effect of "passage of time" and "self-selectivity" in choosing available interviewees. He also emphasized the inherent subjectivity of the oral history, claiming that it depends on the interpretations of the narrator about the present and the past.

3.2.2. Content of the Interviews

A sample of the interview form is available at Appendix A. The interview includes four sections. After replying to the questions related to the company and the respondent, they are asked to fulfill the next three sections of Industry change drivers and events, as well as changes in the organizational performance features and recognition of the mostly evolved organizational routines of construction firms over the past twenty years.

3.2.2.1. General Information about the Company and the Respondent

Respondents are asked to state the name of the company, their current position in that organization, the number of years, which the company is operating in the construction sector, the types of the projects mainly pursued by the company, the annual domestic turnover of the organization over the last five years, and the number of employees within the organization.

If the company has operated in international markets, the name of the different overseas countries, where the company has operated for the last five years, and the annual international turnover over the last five years are additionally requested.

Furthermore, if the company operates in other market areas related/unrelated to the construction industry, the name of the market areas, where the company carries out projects, is asked.

3.2.2.2. Industry Changes

The respondents are asked to determine and explain the degree of impact of the five extracted environmental analysis factors on Turkish construction industry. The rating scale is based on the typical five-level Likert item. In addition, the respondents are free to choose the “not applicable” option if they think the factor did not have any effect on the Turkish construction industry.

In the next section, they are requested to name events such as wars, conflicts, earthquakes, etc. that from their point of view had a significant impact on the Turkish construction industry, as sub-factors of the upper level environmental analysis factors.

In the last section, the respondents are asked to determine and explain if their company experienced any changes in the past 20 years, considering the following

organizational performance features: profitability, level of institutionalization, managerial ability, technical skills and business culture.

3.2.2.3. Evolution of Organizational Routines

In this section, respondents are asked to mention the name of some of the organizational routines, employed by Turkish construction firms, which, from their point of view, considerably changed over the past twenty years.

3.3. Construction of the Maps

The cognitive mapping technique was practiced in order to reflect the beliefs of the respondents of this research. This technique of representation is recognized as a more effective approach than other verbal explanations (Atasoy, 2007).

Brainstorming and interviews are introduced as the two appropriate methods, used in order to acquire cognitive data for constructing cognitive map (Scavarda *et al.*, 2006). Due to the partial deficiency of the brainstorming method in identifying some important factors (Eden, 1988), the interviewing method was preferred in this research.

The essential point in the maps' construction is meticulously perceiving, interpreting and delineating the data, taken from the interviews to accurately reflect the ideas of the respondents without combining the researchers' beliefs (Swan, 1997).

The map was constructed manually. The factors and their relationships were precisely evaluated according to the comments of the participants and were subsequently placed on their current position in the map.

3.3.1. Cognitive Maps

It is proposed that people construct maps in their mind to attain a better understanding of their experiences (Fiol and Huff, 1992). Atasoy (2007) recognized cognitive mapping as a technique, which can unfold and represent these mental maps.

Cognitive mapping technique was initially proposed by Tolman (1948) in his psychology studies, where he constructed the map in order to explain an individual's mental representation of the concepts and their relations with each other, as he tries to understand its environment. Afterwards, this method was used by several researchers in various contexts of study, such as analyzing political decisions (Hart, 1977), information analysis (Montezemi and Conrath, 1986), management and administrative sciences (Eden, 1992), knowledge management (Noh *et al.*, 2000).

There is a limited number of studies in construction management field, where cognitive mapping technique is employed. For example, Ashley and Bonner (1987) practiced the method to appraise political risk, Eden *et al.* (2000) used it to explore delays and disruption in the projects, Poh and Tah (2006) exercised the method in a cost-time integration study, and Dikmen *et al.* (2007) used cognitive mapping technique for modeling risks in overseas construction projects.

3.3.2. Drawing the map

Following the three individual face-to-face interviews with the respondents, in the first step, the change drivers of Turkish construction industry that are subset of five categories of politics, economic conditions, socio-cultural conditions, technology, and legal issues were detected.

In the next step, the Turkish construction industry change events over the past twenty years were extracted from explanations of the respondents.

At the last step, the impact of the industry change events on company performance features were analyzed, according to the explanations of the respondents.

Incorporating the industry change drivers and industry change events, a map, which utilizes cognitive mapping technique, was constructed. This map visualizes the external pressures, causing organizational change in Turkish construction companies.

3.3.3. Interpreting

The final step constitutes of the interpretation of the constructed map. The interpretation was accomplished in terms of verbal expressions. The interpretation of the constructed map is discussed in detail in Chapter 4.

3.4. Case Study Research

Case studies have been extensively practiced in organizational research area. This approach has turned into one of the most popular research strategies in recent years. Case study research entails an in-depth exploration of collected data, over a period of time, within a context. The aim of the case study research is to illuminate the understudy theories and propositions, by analysis of the processes of a phenomenon. It is especially suitable for responding to the research questions, which require detailed understanding of organizational processes, when sufficient amount of detailed data is available in this context (Cassell and Symon, 2004).

3.4.1. Advantages and Limitations of the Case Study Research

Several researchers (e.g. Ragin, 1992; Geertz, 1995; Wieviorka, 1992), who have conducted comprehensive studies related to the case study approach, claim that the case study research compelled them to revise some of their hypothesis, related to the critical points. Upon in-depth case study researches, they found out that some of their views, assumptions and hypothesis were not correct.

Flyvbjerg (2006) described the main advantage of the case study research as its capability to test the views related to a phenomena more precisely, because the case study research approach empirically unfolds the processes of a phenomena.

The major criticism of the case study research in the relevant literature is its dependence on a single case or on a limited numbers of cases. This makes case study approach incapable of drawing a general conclusion (Tellis, 1997).

CHAPTER 4

RESEARCH FINDINGS

The current chapter is comprised of three main sections. In the first section, a brief summary of the interviews related to the change drivers of the Turkish construction industry are reported, and the main change drivers are determined. Subsequently, the constructed map of the determinants of organizational routines evolution of the Turkish construction companies over the past twenty years is depicted and interpreted.

The second section covers explanations of the influence of industry change events on company performance features.

In the third section, on the other hand, the two organizational routine processes of case study companies are represented, and discussions are made regarding to their evolutionary processes influenced by industry change events.

4.1. Summaries of the Interviews

The following summaries can be formed according to the interviews related to the industry change determinants and their impacts on the Turkish construction industry. It should be noted that because the three respondents mentioned about similar things, it was decided that three experts' opinion reflect the general opinion in the construction sector.

4.1.1. Change Drivers of Turkish Construction Industry

The identified Turkish construction industry change drivers by the respondents are presented in the Figure 4-1.

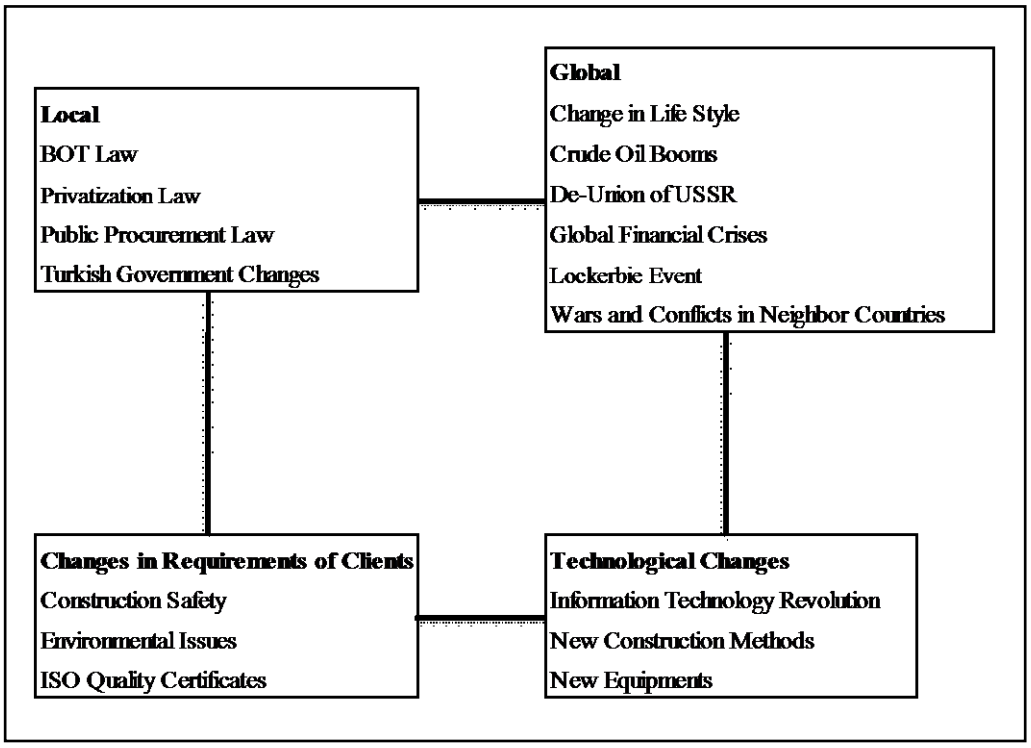

Figure 4-1: Identified Construction Industry Change Sources chart

4.1.1.1. Built-Operate-Transfer (BOT) Law as a Change Driver

After the introduction of Build-Operate-Transfer (BOT) Law in 1984, the role of contracting companies in the industry changed; they were not only constructors anymore, but also investors and operators. In BOT projects, as contractors had to provide the financing for the projects by themselves, they could develop their financial management ability to a great extent.

This capability heightened Turkish contractors' presence in international markets.

4.1.1.2. Privatization Law as a Change Driver

During 1985 to 1995, Turkey commenced a series of reforms to change its economy model to a private sector market model. As a result, several foreign financiers chose Turkey to invest, and got the role of partner for Turkish contractors in domestic market. This situation increased the volume of the domestic construction works, through which Turkish companies gradually could enhance their organizational culture, managerial abilities, technical skills, etc. Subsequently, as a consequence of possessing high level of capabilities, Turkish contractors increased their presence in international markets.

4.1.1.3. Public Procurement Law as a Change Driver

The introduction of the Public Procurement Law in 2003 increased the level of competition in the domestic market. This situation persuaded Turkish Contractors to increase their presence in international markets.

4.1.1.4. Turkish Government Changes as a Change Driver

Following the formation of the new Turkish government (2003), domestic construction market attracted a large number of new entrants, which accordingly caused a dramatic rise in the level of competition in construction business in domestic market. This situation encouraged Turkish contractors to seek job opportunities in overseas markets.

Therefore, the ultimate impact of the Turkish governmental changes, over the past twenty years, on the Turkish construction industry could be distinguished as an increase in the presence of the Turkish contractors in international markets.

4.1.1.5. Change in Life Style as a Change Driver

The changes in life style of people ameliorated the people's standard of living and modernized the community, which consequently resulted in specialization of the Turkish Contractors in certain types of projects like shopping centers, hotels, high-rise buildings, etc.

4.1.1.6. Crude Oil Booms as a Change Driver

The increase in the oil prices led to the economic growth of the oil exporting countries, which turned them to a new destination for Turkish contractors.

In consequence, the influence of the crude oil booms on Turkish construction industry is detected as an increase in the volume of construction works in international markets and differentiation of markets.

4.1.1.7. De-Union Of USSR as a Change Driver

Collapse of Soviet Union (USSR) (1991) provided Commonwealth of Independent States (CIS) countries as new markets for Turkish Contractors. It also opened the markets of the former communist East European and Balkan Countries to Turkish Companies. As a result, the impact of the De-union of USSR as a change driver is detected as an increase in the volume of construction works in international markets and differentiation of markets.

4.1.1.8. Global Financial Crises as a Change Driver

Global financial crises (2008) are identified as a factor which adversely affected the Turkish construction sector. Due to the global recession, the amount of international contracts, signed by Turkish contractors, severely decreased.

4.1.1.9. Lockerbie Event as a Change Driver

Before 1990, Libya, a country located in North Africa was a favorable construction market for Turkish contractors. After the Lockerbie event and starting a series of sanctions against Libya in 1991, Turkish contractors had to leave Libya.

4.1.1.10. Wars and Conflicts in Neighborhood Countries as a Change Driver

Occurrence of wars and conflicts in neighborhood countries (2001 and 2003) was followed by reconstruction thrust in order to renew and repair the damaged infrastructure and superstructure systems. The ultimate influence of wars and conflicts in neighborhood countries as a change driver is detected as an expansion in the volume of construction works and provision of differentiation of markets for Turkish contractors.

4.1.1.11. Clients Requirements as a Change Driver

ISO Quality certificates are considered as a source of competitive advantage for construction companies, because they are representing the companies' qualification to tender for both local and international projects. ISO quality certification system is considered as a change driver, because contractors are required to acquire the certificate by the clients. Clients additionally asked contractors to take stringent construction safety systems and to consider the environmental issues, while undertaking construction projects.

Consequently, the impact of the increase in clients' requirements as a change driver is perceived as intensification of the level of competition in international markets.

4.1.1.12. Information Technology Revolution as a Change Driver

The revolution in information technology increased the level of productivity in the supply chain industry.

4.1.1.13. New Construction Methods as a Change Driver

The development of new construction methods resulted in heightened productivity level. Contractors, which learnt new construction methods, gained a competitive advantage against their other rivals in construction markets.

4.1.1.14. New Equipment as a Change Driver

Introduction of new mechanized equipment to perform construction tasks increased the level of productivity.

4.2. Identification of the Main Change Drivers of Turkish Construction Industry

The results obtained at the end of the interviews, practicing the Likert Scale rating to determine the magnitude of influence of PESTEL macro environmental analysis factors on Turkish construction industry by respondents, reveal that changes in "Political", "Economic conditions" and "Socio-Cultural Conditions" constitute the most prominent change drivers of Turkish construction industry.

4.3. Turkish Construction Industry Change Events

The detected Turkish construction industry change events, over the past twenty years are presented in Table 4-1.

Table 4-1: Detected Construction Industry Change Events

Detected Turkish Industry Change Events
Increase in Number of New Entrants into the Domestic Market
Increase in the Volume of Works in International Markets
Differentiation of Markets
Increase in the Level of Productivity
Specialization in Certain Types of Projects
Increase in Competition in International Markets
Increase in Competition in Domestic Markets
Increase in Presence of Turkish Contractors in International Markets

4.3.1. Turkish Construction Industry Change Drivers and Events

The Turkish construction industry change determinants and change events over the past twenty years are shown in Table 4-2.

Table 4-2: Industry change determinants/ impact table

Identified Change Drivers	Final Impact on Turkish Construction Industry
Turkish Governmental Changes	Increase in presence of Turkish contractors in international markets.
Privatization Law	Increase in presence of Turkish contractors in international markets.
BOT Law	Increase in presence of Turkish contractors in international markets.
Public Procurement Law	Increase in presence of Turkish contractors in international markets.
Global Financial Crises	Decrease in volume of works in international markets.
Crude Oil Booms	Increase in volume of works in international markets / Differentiation of markets
De-Union of USSR	Increase in volume of works in international markets / Differentiation of markets
Wars and Conflicts in Neighborhood Countries	Increase in volume of works in international markets / Differentiation of markets
Change in Life Style	Increase in experience of contractors in certain types of projects
Clients Requirements	Increase in level of competition in international markets
Information Technology Revolution	Increase in productivity level
New Construction Methods	Increase in productivity level
New Equipment	Increase in productivity level

4.4. Construction of the Organizational Routines Evolution Map

The organizational routines evolution map of the Turkish construction companies over the past twenty years, incorporating the industry change drivers and events, is presented in Figure 4-2.

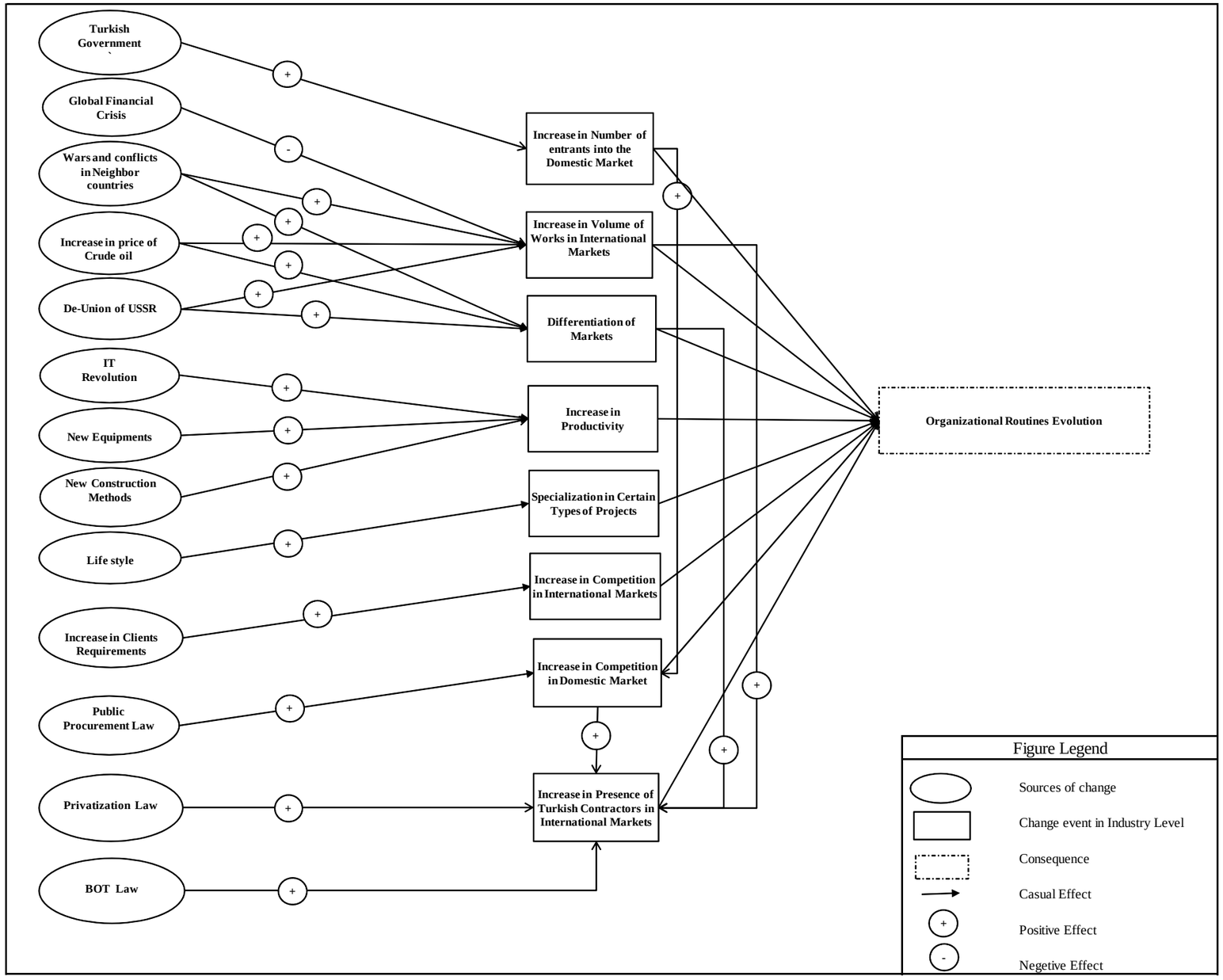

Figure 4-2: Determinants of Organizational Routines Evolution

4.5. Interpretation of the Constructed Map

In this stage, the specific focus is interpreting the map, constructed based on the interviews with professionals. This interpretation is figured out with the analysis of the map in terms of verbal expressions.

Introducing the basic industry change determinants to the interviewees as “political”, “economic conditions”, “socio-cultural conditions”, “technology” and “legal”, it is observed that the Turkish construction industry evolutionary process over the past twenty years has been heavily influenced by de-union of USSR (1991), occurrence of wars and conflicts in neighborhood countries (2001 and 2003), oil price booms and change of Turkish government (2003), global financial crises (2008), BOT Law (1984), Privatization Law (1985-1995), information technology revolution, Public Procurement Law (2003), change in life style and clients’ requirements .

Impacted by the above-mentioned sources, significant change events in the Turkish construction industry were identified by the interviewees as (1) increase in number of new entrants into the domestic market, (2) increase in the volume of works in international markets, (3) differentiation of markets, (4) increase in productivity, (5) specialization in certain types of projects, (6) increase in competition in international markets, (7) increase in competition in domestic markets, and (8) increase in presence of Turkish contractors in international markets.

In order to manage the influence of the above-mentioned industry change events, and to remain successful in the construction business, firms were in a continuous cycle of organizational routines evolution and adaptation in parallel to the environmental evolution.

This research supports the claim, arguing that organizations response to the external pressures through adapting their organizational routines. However, within the context of this research, it is not feasible to investigate all of the organizational routines,

employed by the Turkish construction firms. Therefore, it is decided to explore two of the most significantly evolved routines, recognized by the industry survey participants, which are the business development and claim management routines, in order to partially explain and demonstrate the organizational routines evolutionary process, originated as a result of the emergence of industry change events.

4.6. Influence of Industry Change Events on Company Performance Features

4.6.1. Profitability

Increase in the number of new entrants into the domestic market (2003) decreased the amount of profits, earned by Turkish contractors in local market. This situation encouraged contractors, who, as a result of an increase in the volume of works in international markets, had overseas job opportunities, to intensively enter into the international markets. This situation leaded to increase in the presence of the Turkish contractors in international markets, or, in other words, internationalization of the Turkish contractors.

4.6.2. Level of Institutionalization

Internationalization, in parallel with the opportunity of differentiation of markets for Turkish contractors, made companies more institutionalized, as they learnt much in overseas markets.

4.6.3. Managerial Ability and Technical Skills

The internationalization of Turkish contractors and differentiation of markets provided an opportunity for them to strengthen their managerial ability and learn new technical skills from their partners in the international markets.

4.6.4. Business Culture

By internationalization of Turkish contractors and differentiation of markets, business culture of the Turkish construction companies strengthened.

Figure 4-3 indicates the Turkish construction industry change forces and events that impacted the company performance features over the past twenty years.

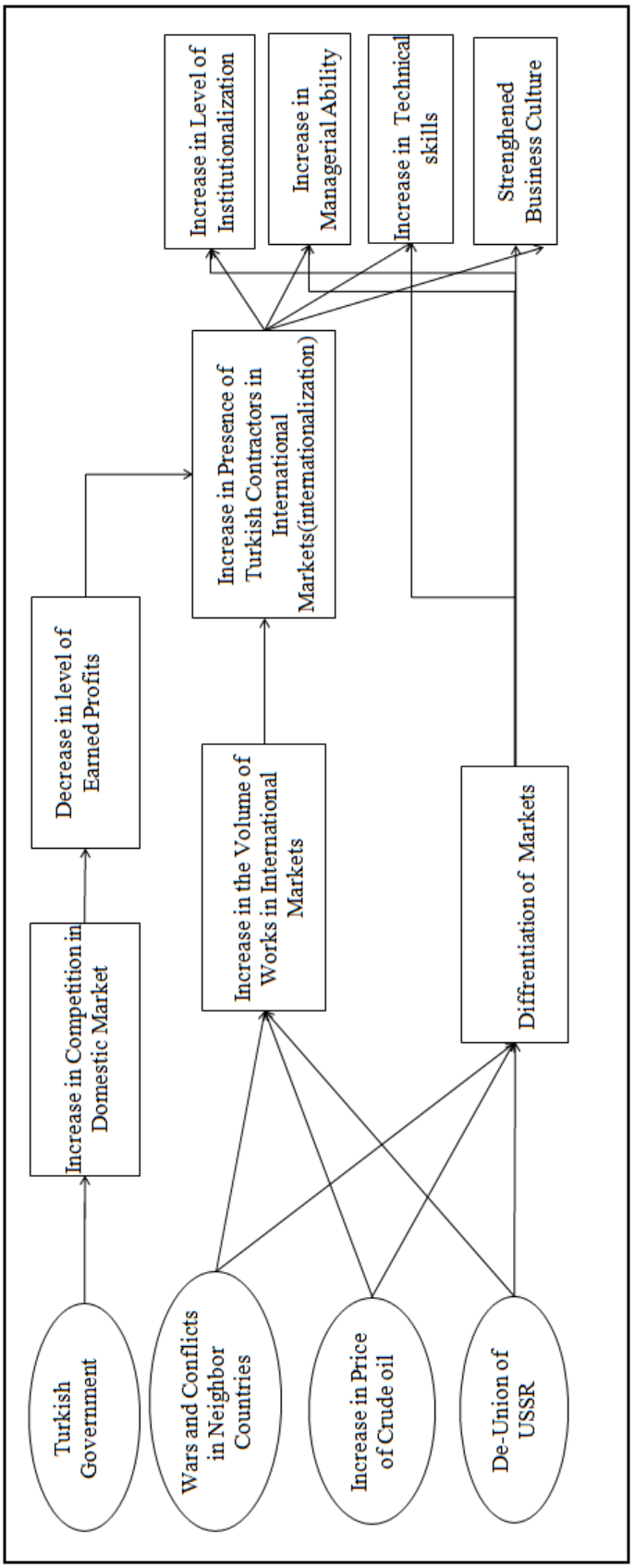

Figure 4-3: Influence of Industry change events on Company Performance Features

4.7. Identification of Main Drivers of Organizational Change

As it is clear in Figure 4-3, "The markets, where companies operate" and “The internationalization of Turkish contractors” are recognized as the main determinants of organizational change of Turkish construction firms over the past twenty years.

4.8. Case Studies

This section introduces two companies, which were selected since they have organization schemes, appropriate to the research question of this thesis.

Giving a brief description of each case study company, the organizational routine, which its change processes are explored through evolutionary theory approach, is introduced.

The justifications of the routines evolution process, originated by construction industry environmental evolution over the past twenty years, are discussed in the following sections.

4.8.1. General Information about the Companies

The following paragraphs provide the profiles of the case study companies. The age of the respondent companies, titles of the interviewees and the studied routines are presented in the Table 4-3.

Table 4-3: Information about Case study Companies

Company	Age	Title of the Interviewee	Studied Routine
A	37	Vice President	Business Development
B	42	Technical Group Manager	Claim Management

4.8.2. Case study 1: Company A

Company A has been active in construction sector for approximately 37 years. Since its foundation, the company has been active in general contracting business, particularly in infrastructure constructions. The group companies of Company A could rapidly gain their positions as leading companies both in national and international markets through the know-how strategies. They not only expanded their experience in all stages of construction and project cycles, but also operated in a wide geography from Sudan to Iraq, Afghanistan to Kazakhstan, Saudi Arabia to Azerbaijan, Algeria to Uzbekistan, Nigeria to Romania and Turkmenistan to Libya.

The group companies of Company A are formed by 21 companies, 10 of which are located outside Turkey. Considering the company's focus on construction, consulting, engineering, and energy businesses in a wide range of international markets, the engineering magazine Construction, Building and Engineering News (ENR) selected Company A in the top 225 International Contractors.

Taking into account that the large number of international projects was successfully executed by the company in different markets over the past recent years, in the context of this research, it is aimed to explore the evolutionary process of the business development routine of Company A, since this routine is playing a significant role in success of the company.

Conducting interviews with the vice president of the Company A, the business development strategies, steps and evolution processes are discussed in detail. The processes of business development routine, before and after change, are presented and interpreted in the next sections.

4.8.2.1. Business Development Routine of Company A

Generally, the objective of the business development routine of a construction company as a contractor is to search for new markets and clients, penetrate to the existing markets and search for different types of construction projects.

The vice president of Company A, which is a successful company in construction business in the last 30 years, described the key success factors of their business development strategy as:

- Entering to the potential markets at the right time,
- Having unique thinking toward each project,
- Being very dynamic in preparing business development strategy for new markets,
- Evaluating a wide range of job opportunities and conducting comprehensive feasibility studies, in comparison with other companies operating in the market as indicated in Figure 4-4.

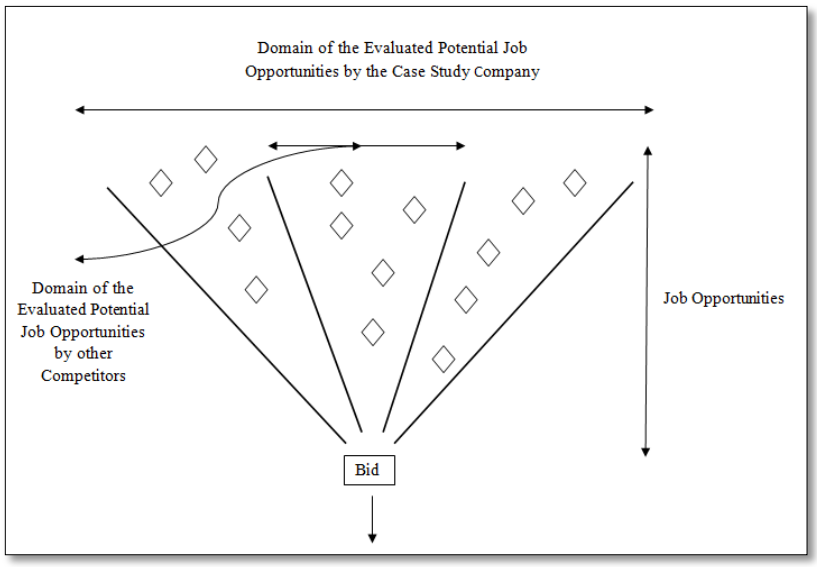

Figure 4-4: Critical Success Factor of Business Development Strategy

4.8.2.2. Steps of Business Development Routine in a Specific Country where the Company has Previously Entered

The general steps of the current business development routine of the Company A are introduced as client definition in a specific country and assessment of the company experience.

Intersection of the market availability and company experience composes the company strategy for a specific country, by which the targets are achieved.

4.8.3. Case Study 2: Company B

Company B is a project and engineering company, which accomplished many construction projects over the past 43 years in different countries. While its main markets can be listed as Saudi Arabia, Libya and Russia, the company also operated in Afghanistan, Romania, and Uzbekistan and Kazakhstan markets. The field of

activities of Company B is composed of buildings, airports, bridges, highways and industrial plants, grain storages and silos, marine works, river structures and irrigation premises, pump stations, treatment plants and restoration of historical structures.

Taking into account, the large number and size of the projects, undertaken by the Company B in international markets, within the context of this study, it is determined to explore evolution of its claim management routine.

Conducting interviews with technical group manager of the Company B, the processes of claim management routine development and the impact of the industry change events on execution processes of the routine are discussed in detail in the following sections.

4.8.3.1. Claim Management Routine of Company B

Works of claims management department of Company B covers preparation of services in respect to the claims related to the projects, which are undertaken by the company. The claim case may be related to compensation, restitution or repayment issues, or due to some other obligations.

The processes of claim management routine before and after change are represented and interpreted in the following sections.

4.9. Business Development Routine of Company A

Two face-to-face interviews were held with the vice president of Company A. Each interview lasted for almost two hours. In the first session of the interviews, the vice president was asked to explain the objective of the business development routine and the critical success factors in execution of the routine. Afterwards, he was requested

to describe the steps of conducting business development routine of company A, for almost twenty years ago and today. Based on the obtained information, two flowcharts were constructed which are presenting the execution steps of the business development routine of Company A. In the second session of the interviews, comparing the two constructed flowcharts, the respondent was asked to explain the reasons behind the observed changes in processes, taking into consideration the industry change events over the past twenty years.

Conductiong the interviews, it was seen that almost twenty years ago , business development routine of the understudied company was comprised of only two following steps:

- Identification of the market opportunities, in which most of the time was limited to a single project,
- Tendering for that specific available project.

The process of conducting the routine got more complicated during the past twenty years, through adaptation of the routine in line with the industry environmental evolution. This is because the leaders of Company A tried to select the most compatible processes for this routine.

The general simplified steps of the adapted routine of Company A, for developing its business in a specific international market that it has previously entered, are constituted of the steps indicated below:

- Definition of the potential clients in a specific country,
- Evaluation of the company experience regarding to the available projects of the defined clients in that specific market,
- Identification of potential local partners if required,

- Strategy-making for that specific market,
- Reaching Targets.

It is worth to mention that the above-mentioned processes commence upon conducting comprehensive target market studies, related to the topics such as employment rates, financial issues information, market conditions, and the like.

It shall also be noted that the studied routine process is one of the business development routines employed by Company A. In the case of entering to a market for the first time, the processes would be completely different.

The first step of the routine is the definition of the potential clients. The client repertoire targeted by Company A covers all the clients from public sector, private sector and public-private partnerships. Public sector is also sub-divided into clients from ministry, municipality, and military. Private sector, on the other hand, is divided into local firms, international firms and Turkish firms.

The second step entails assessment of the company experience regarding to the available projects of the defined clients in the target market.

The third step includes searching for local partners, if it is required by the rules and regulations of the targeted market, or if the company determines that it is beneficial to be competitive in that specific market.

At the last step, company reaches its objective via marketing (client visits, brochures, and reference files), tendering or direct negotiations.

The flowcharts regarding to the old and adapted routine processes are presented in Figure 4-5 and Figure 4-6.

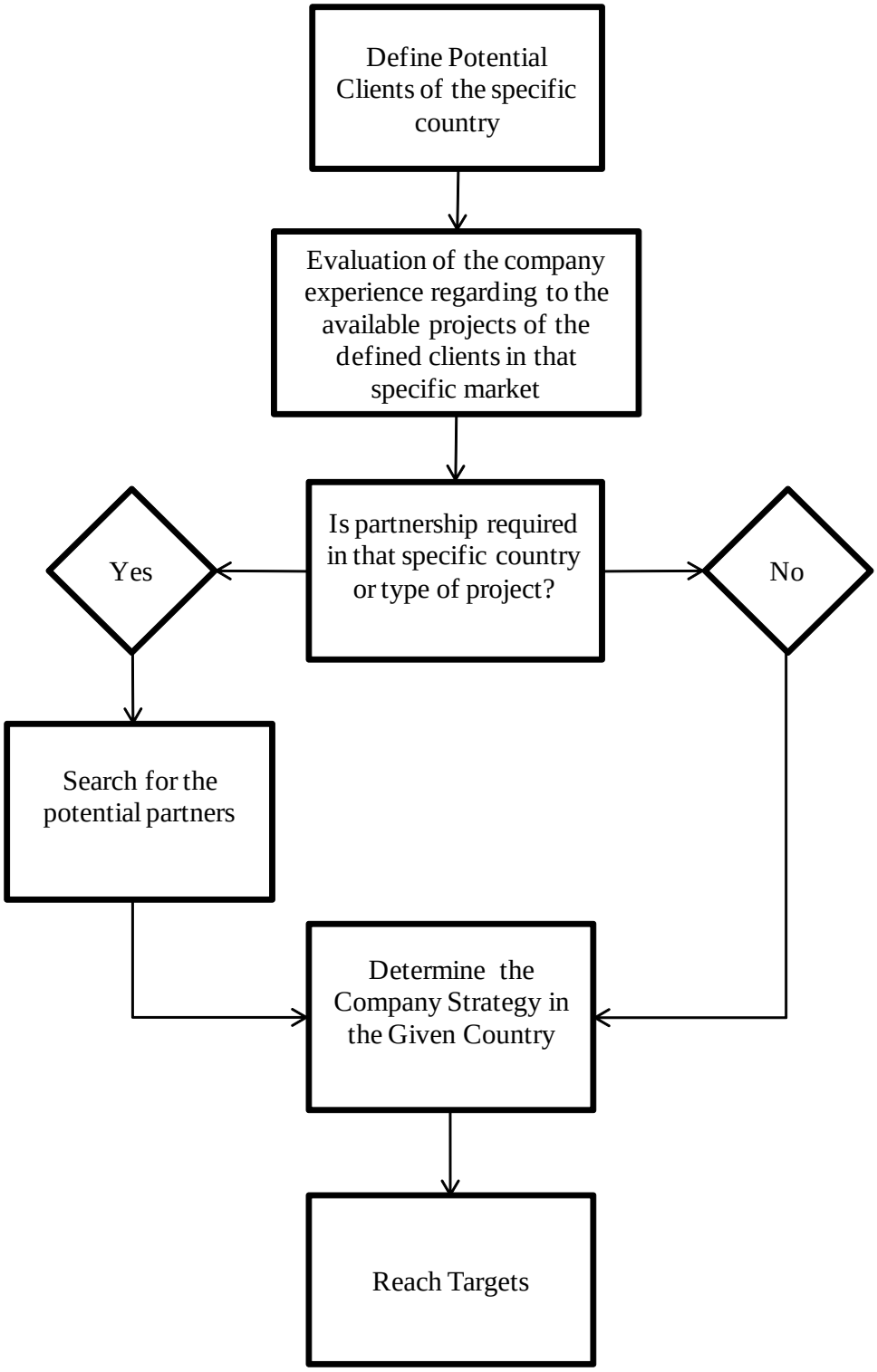

Figure 4-5: Current simplified business development flowchart of Company A for a specific market that the company has previously entered

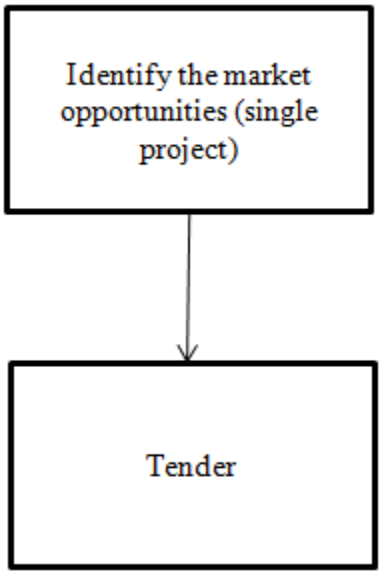

Figure 4-6: Previous (nearly twenty years ago) business development flowchart of Company A

4.9.1. Comparison of the Factors Affecting Business Development Routine Processes

During the past twenty years, there have been changes in factors, influencing the processes of business development routine, which are given in Table 4-4.

Table 4-4: Comparison of the factors affecting business development routine

Current (2010)	Past (1990)
Strategy Making	
Specific strategy for each target market	No strategy
Types of Clients	
Public Sector Private Sector Public-Private Partnerships	Public Sector
Markets Focus	
National International	National
Finding Job Opportunities	
Relationship-Based / Research-Based	Relationship-Based
Marketing	
High Level of Marketing	No marketing Opportunities

- At first sight, it is observed that the number of steps in executing the routine is increased. While in the past the routine process was composed of only two steps, current routine process entails more steps.

- Considering the routines processes, it is detected that the previous routine process was only focused on identification of projects and tendering without making any specific strategy for a target market. Whereas, in the current process, the company prepares different strategies considering various types of markets, as a result of differentiation of markets, conducting comprehensive research and market studies.

- While in the past, due to the information technology deficiency and transportation difficulties, the company could only tender for the available

projects, nowadays it can additionally reach its objectives via marketing (client visits, brochures, and reference files) and direct negotiations.

- In the past, the routine focused on identifying available projects from public sector, whereas in the adapted routine, client repertoire of Company A is constituted of all public, private and public-private partnerships.

- The market focus of the preceding business development routine was heavily based on national projects. Currently, on the other hand, the market focus of the routine covers both of the national and international projects as a result of progresses in information technology and enhancements in transportation facilities.

- While in the past, the job opportunities were found through establishing strong relationships with clients, in the adapted routine, project opportunities are substantially caught through research, as a result of high access to the internet, large numbers of conferences and meetings, having representatives of local office in international markets, establishing local offices abroad, and available bids in newspapers.

4.9.2. Impact of the Industry Change Events on Factors Related to the Business Development Routine of Company A

Industry change events and their corresponding impacts on business development routine are shown in Table 4-5.

The Table 4-5 entries are explained in the following paragraphs.

Table 4-5: Industry change events/ impact on business development routine

Detected Industry Change Events	Change
Increase in the Number of New Entrants into the Domestic Market	Market Focus
Increase in the Volume of Works in International Markets	Types of Clients / Market Focus
Differentiation of Markets	Strategy Making
Increase in Productivity (As a Result of Information Technology Revolution)	Ways of Finding Jobs / Emergences of Marketing Opportunities
Specialization in Certain Types of Projects	The Company A started to increase its knowledge and experience regarding those specific types of projects. Therefore the intersection of market availability and company knowledge covered larger domain of projects.
Increase in Competition in International Markets as a Result of Change in Clients' Requirements	No change
Increase in Competition in Domestic Markets	Market Focus
Increase in Presence of Turkish Contractors in International Markets	Strategy Making

- As a result of increase in the number of new entrants into the domestic market, the level of competition accordingly intensified. This situation encouraged Turkish contractors to seek job opportunities in the international markets. In other words, the large numbers of new competitors in domestic market altered market focus of Company A. While in the past it was centrally operating in domestic market, the company gradually entered into the international markets.

- Company A not only changed its market focus and commenced operating in overseas markets but also its client type domain expanded from public sector only, to clients from public, private and public-private sector, as a result of the increasing volume of works in the international markets.

- As a result of differentiation of markets, the client types and markets changed, therefore the company made different strategies regarding to the specific markets and types of clients.

- Rising productivity level in supply chain industry provided an easier identification of large numbers of available projects, and marketing opportunities for the company.

- By developing a tendency to the certain types of projects in the market, the company started to increase its knowledge and experience regarding those specific types of projects. Therefore the intersection of market availability and company knowledge covered larger domain of projects.

- An increase in the level of competition in international markets, as a result of emergence of more strict ISO quality certificates, construction safety and environmental issues requirements, did not have a noticeable impact on the routine being studied, since there were no stringent requirements in the markets, where company was operating.

- Rising level of competition in the domestic market resulted in changes in the market focus. As a consequence, the company started searching for international job opportunities.

- As a result of increase in presence of Turkish contractors in the international markets, Company A started to already define the potential clients in the different markets comparing other competitors in the market.

In order to favorably manage the impacts of the industry evolution and remain successful and competitive in the construction business, the Company A has been in a continuous cycle of changes. These changes were centrally made by selecting the most appropriate processes for its business development routine in order to provide adaptation with the environment, where it operates. Over the past twenty years, the company incorporated the know-how of adaptation of business development routine into the values of its organization and enhanced the culture of continuing adaptation of the routine. The managers have set the organizational routine evolution as their primary goal. The construction industry evolution over the past twenty years impacted Company A, by making changes in factors related to business development routine, which are “market focus”, “types of clients”, “strategy making”, ”ways of finding job opportunities” , “marketing opportunities” and “gaining knowledge and experience regarding specific types of construction projects”.

The industry change drivers and events, influencing business development routine, and their impacts on the routine are represented in Table 4-6.

Table 4-6: Industry Environmental Evolution and Changes in Factors related to the Business development Routine of Company A

Industry Change Drivers
Turkish Government Changes
Wars and Conflicts in Neighborhood Countries
Crude Oil Booms
De-union of USSR
Information Technology Revolution
New Construction Methods
New Equipments
Change in Life Style
Privatization Law
BOT Law
Public Procurement Law

→

Industry Change Events
Increase in the Number of New Entrants into the Domestic Market
Increase in the Volume of Works in International Markets
Differentiation of Markets
Increase in Productivity
Specialization in Certain Types of Projects
Increase in Competition in Domestic Market
Increase in Presence of Turkish Contractors in International Markets

→

Change in Factors related to the Routine
Market Focus
Types of Clients
Strategy Making
Ways of Finding Jobs
Marketing
Gaining knowledge and Experience Regarding Specific Types of Construction Projects

4.10. Claim Management Routines of Company B

Two face-to-face interviews were held with the technical group manager of Company B. Each interview lasted for almost two hours. In the first session of the interviews, the technical group manager was asked to explain the objective of the claim management routine. Subsequently, he was requested to describe the steps of conducting claim management routine of company B, for almost twenty years ago and today. According to the obtained information, two flowcharts were constructed which are presenting the execution steps of the claim management routine of Company B. In the second session of the interviews, comparing the two constructed flowcharts, the manager was asked to explain the reasons behind the observed changes in processes, taking into consideration the industry change events over the past twenty years.

Conducting the interviews, it was observed, claim management routine of Company B, almost twenty years ago, was comprised of four steps, which are (1) determination of the request equitable adjustment (REA) case, (2) evaluation of the effect of the REA case on the project, (3) calculation of the effect of the REA case on the project, and (4) presenting the claim to the department. By approval or refusal of the claim case by the department, the process of the claim management routine would be terminated.

The process of conducting routine got more complicated, through adaptation of the routine in line with the industry evolution. The general steps of the adapted routine are constituted of (1) determination of the REA case and notification of the case to the department, according to the timing, mentioned in contract clauses, (2) investigating the REA case at quality control report (QCR), (3) evaluation of the effect of the REA case on the project, (4) calculation of the effect of the REA case on project through time-impact calculations by the relevant program, and visiting the work site, (5) provision of the supporting documents, (6) development of the REA case in a certified format, (7) approval of the site manager, (8) presentation of the

claim case to the department, (9) negotiations with the department related to the REA case. The process terminates upon refusal of the case, while in the case of approval, further amendments may be required. The flowcharts regarding the old and adapted routines are presented in Figure 4-7 and Figure 4-8.

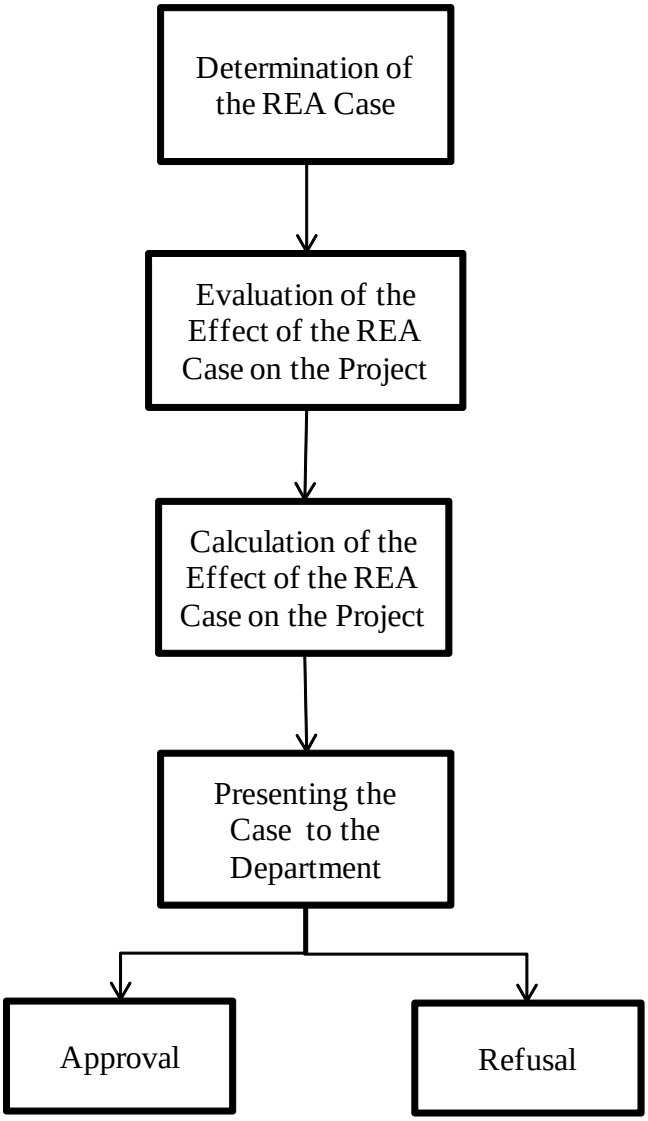

Figure 4-7: Previous (almost twenty years ago) claim management flowchart of Company B

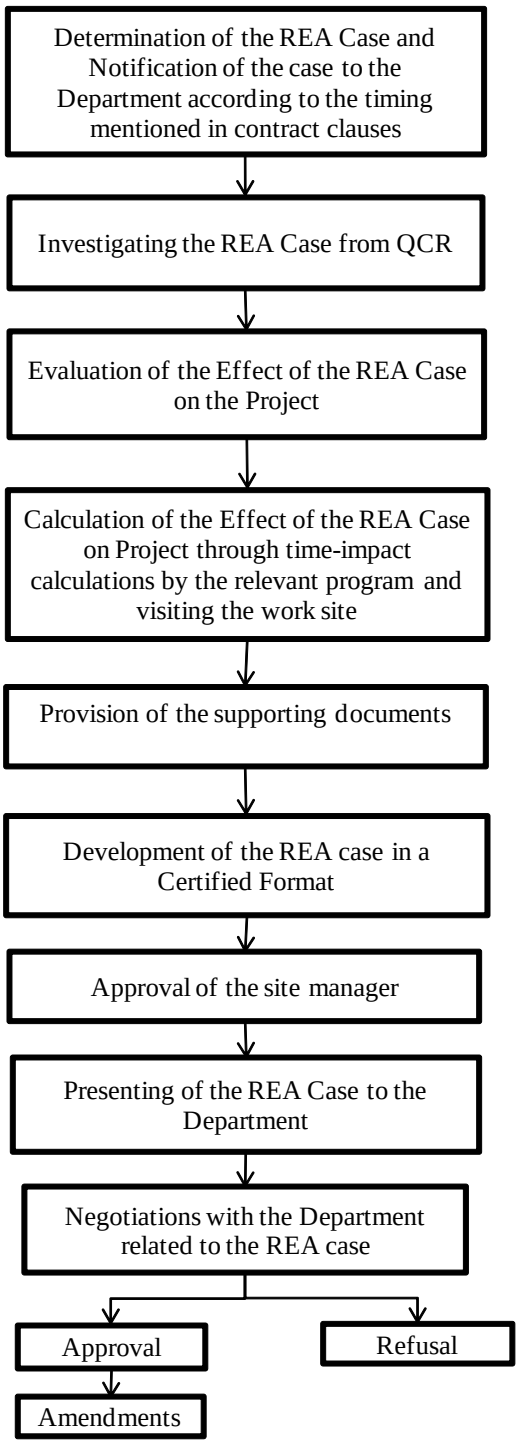

Figure 4-8: Current claim management flowchart of Company B

4.10.1. Comparison of the Claim Management Routines Before and After Industry Evolution

Over the past twenty years, Company B has exercised changes in its claim management routine to manage the industry change impacts.

- First of all, it is observed that the number of steps for executing the routine is increased. In the past the routine process was composed of four steps, while the routine process got more complicated through adaptation. Steps of the current process account for ten.

- As can be seen in Figure 4.7, it is observed that in the current process an emphasis is put on the notification of the REA case to the department according to the timing, mentioned in contract clauses.

- A step is added to the adapted process, which investigates the REA case at QCR.

- In the current process, the calculation of the effect of the REA case on project is made through time-impact calculations by the relevant program, and visiting the work site. Whereas in the previous process, it was not a requirement to calculate time-impact effects or visit site.

- Provision of the supporting documents is added to the adapted routine process, as a new step.

- Another step, which is development of the REA case in the certified format, is added to the routine process.

- Approval of the site manager is a requirement in the new routine process.

- Negotiations with the department related to the REA case is added to the routine process.

- In the case of approval of the claim case by the department, further amendments may be required.

4.10.2. The Effect of the Industry Change Events on Claim Management Routine

Industry change determinants and their corresponding impact on claim management routine are given in Table 4-7. The Table 4-7 entries are explained in the following paragraphs.

Table 4-7: Industry change events/ impact on claim management routine

Detected industry change events	Impact
Increase in the Number of New Entrants into the Domestic Market	No Change
Increase in Volume of Works in International Markets	No Change
Differentiation of Markets	Required development of more precise claims. Therefore, added steps to the previous routine process
Increase in Productivity(As a result of Information Technology Revolution)	Required development of more precise claims. Therefore, added steps to the previous routine process
Specialization in Certain Types of Projects	Improved claim files/ More information about contract liability
Increase in Competition in International Markets As a Result of Change in Clients Requirements	No Change
Increase in Competition in Domestic Markets	Decreased profit ratios and increased the need for precise claims and contract liability
Increase in Presence of Turkish Contractors in International Markets	Increased the need for precise claims and contract liability

- The following events did not have any direct effect on the process of claim management routine: (1) increase in the number of new entrants into the domestic market, (2) increase in volume of works in international markets, (3) increase in competition in international markets.

- Differentiation of markets, as an industry change event, resulted in conducting construction projects in different market conditions. Over the past twenty years, as a result of the improvements in the market conditions, where Company B was operating, the client expectations equivalently increased. As a consequence, the processes of claim management routine accordingly evolved to meet the client expectations. In parallel with differentiation of markets, increase in the productivity level as a result of information technology revolution, as another change event, impacted the process of case study routine, because quality control processes could be conducted more precisely than before. Specialization in certain types of projects, improved the claim files and information about contract liability as the Company B, undertook many construction projects having the same characteristics. Increase in competition, in the domestic markets, resulted in decrease in profit ratios and therefore increased the need for precise claims and contract liability. Finally, increase in presence of Turkish contractors in international markets, gradually intensified the level of competition and therefore increased the need for precise claims and contract liability. The summarized changes in claim management routine of the case study Company B are (1) notification of the REA case to the department according to the timing, mentioned in contract clauses, (2) investigating the REA case at QCR, (3) provision of the supporting documents, (4) time-impact calculations by a relevant program and visiting of the work site, (5) development of the REA case in the certified format, (6) approval of the site engineer, (7) negotiations with the department related to the REA case, and (8) further amendments, if required.

In order to favorably manage the impacts of the industry evolution, the Company B has been in a continuous cycle of changes. The company selected the most appropriate processes for its claim management routine, in order to provide adaptation with the environment, where it operates. Company B evolved its claim management routine by adding more steps to its previous routine, to develop more precise claims and achieve client satisfaction.

The industry change drivers and events influencing claim management routine and their impact on the routine are represented in Table 4-8.

Table 4-8: Determinants of Evolution of Claim Management Routine of Company B

Industry change drivers	Industry change events	Change in Routine
		Notification of the REA case to the Department according to the Timing Mentioned in Contract Clauses
Wars and Conflicts in Neighborhood		Investigation the REA Case at QCR
Crude Oil Booms	Differentiation of Markets	Calculation of the Effect of the REA Case on the Project through Time-Impact Calculations by the Relevant Program and Visiting the Work Site
De-union of USSR	Increase in Productivity	Provision of the Supporting Documents
Information Technology Revolution	Specialization in Certain Types of Projects	Development of the REA case in the certified format
New Construction methods	Increase in Competition in Domestic Markets	Taking Approval of the Site Manager
New Equipment	Increase in Presence of Turkish Contractors in International Markets	Negotiations with the Department Related to the REA Case
		Further Amendments, if Required

CHAPTER 5

CONCLUSIONS

This chapter covers the summary of the study, including the aim and methodology. The main research findings are reported and the limitations are discussed. The recommendations for future studies are given at the end of the chapter.

5.1. Summary of the Research

Due to the external forces regularly imposing pressures, the organizations' effort to evolve and get adapted to the new environmental conditions has been a source of challenge in organizational research area (e.g. Hannan and Freeman, 1984; March, 1991; Levinthal and March, 1993; Tushman and Romanelli, 1985; Levinthal, 1991). As a response to the external forces, organizations continuously refine and improve their routines, or adopt new organizational routines to not only survive but also remain competitive in the market.

Based on the arguments, claimed by previous studies, this study aimed to demonstrate that organizations react to external pressures by adapting/adopting organizational routines. Within the context of this study, an attempt has been made to empirically investigate the influence of the environmental evolution of Turkish construction industry on adaption of two case study organizational routines.

The main objectives of this study can be summarized as identification of the change drivers and change events of Turkish construction industry over the past twenty years, analyzing the impact of the change events on organizational performance features, and investigating the adaptation process of two case study organizational routines, incorporating industry environmental evolution.

The principle contribution of this research is a heightened understanding of how construction organizations evolve with the evolution of the construction industry by making use of case studies, which rarely exist in the relevant literature.

Within the context of this study, a literature survey about “Organizational Change” and “Organizational Routines” was initially accomplished. Subsequently, a questionnaire was prepared to grasp dynamics of Turkish construction industry and make discussions, related to the impacts of industry changes on organizational performance features.

The second stage comprised three in-depth interviews with the managers/CEOs of Turkish construction companies. The provided information by the questionnaires was precisely recorded. Upon the interviews, a map was constructed by using Cognitive Mapping Technique, which indicated the Turkish industry change determinants and events, in order to visualize the external pressures, resulting in the evolution of organizational routines of construction firms.

In the third stage, the processes of business development and claim management routines, before and after change, were delineated by using the flowchart method, and their evolution were discussed, incorporating the industry change determinants and change events.

5.2. Main Results

The main results obtained at the end of this study are summarized as follows:

- The main change drivers of Turkish construction industry over the past twenty years are identified as “Political”, “Economic conditions” and “Socio-Cultural Conditions” factors.

- "The markets, where companies operate" and “The internationalization of Turkish contractors” are also recognized as the major determinants of organizational change of the Turkish construction firms over the past twenty years.

- It is demonstrated how two case-study organizational routines reacted to the environmental evolution of the Turkish construction industry. It is seen that the construction industry evolution influenced business development routine of Company A, by making changes in “market focus”, “types of clients”, “strategy making”, “ways of finding job opportunities” and “marketing opportunities”. In the case of Company B, on the other hand, industry evolution changed its claim management routine by adding more steps to its processes, in order to meet the continuously increasing expectations of the clients’ in different markets.

- The changes in the environment may affect companies in different ways. The changes in organizational routines may be in the form of the changes in “processes” or in the “focus” (competitive scope or competitive strategy). The two case studies demonstrate two potential differences that can be traced, while examining the organizational routines.

- Looking to the results obtained from this study; construction managers can predict the impacts of the probable future industry changes on their organizations and already plan for the change impacts by modifying their organizational routines. Also, if they want to learn from experience and monitor changes in their organizations, they should have a “system” to define their routines, update them as needed and store this information. By this way, they can examine their evolutionary pattern and increase their adaptation ability.

5.3. Limitations of the Study

There were some drawbacks regarding the current study, which are listed as follows:

- As oral history interview methodology was employed in performing interviews, the subjectivity of the acquired data, to a certain extent, shall be taken into consideration.

- Difficulties in understanding the organizational routines were constituted as one of the major limitations of this study. Due to the dispersed nature of organizational routines, observation of the routine processes was difficult. The emerging quality of routines made understanding the routines even more difficult. The other problem was the inability of an individual actor to articulate all the underlying knowledge of a specific routine.

- As construction activities are project-based, the routine processes tend to be different in order to meet different project requirements and clients' expectations. Therefore, the two case study organizational routines, which were analyzed within the framework of this study, were only one type of business development routine employed by Company A, or one kind of claim management routine practiced by Company B.

- In the current research, the understudied cases are limited to only two organizational routines of two different case study construction firms, whereas investigating more case studies can provide better understanding of the organizational behavior in the times of environmental evolution.

5.4. Recommendations for Future Researches

For future studies, it is recommended to consider mapping the evolutionary processes of more organizational routines, which belong to a single construction company. However, in this case the main problem would be to find an appropriate case study company that is willing to participate in this research. It is because it would require involvement of high number of knowledgeable staff to talk about the company history and how things changed in the company over the years.

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APPENDIX A

CONSTRUCTION INDUSTRY CHANGE AND ORGANIZATIONAL ROUTINES EVOLUTION

This questionnaire is build up regarding to the master's thesis "Drivers Of Change In The Turkish construction industry", which is a research study at Construction Engineering and Management division of Civil Engineering Department, Middle East Technical University. It is planned to identify drivers of change in the Turkish construction industry during past **twenty years** and correspondingly examine the organizational change of Turkish construction companies.

Joining to this study, you will not only contribute us in providing research data but also assisting in refinement of the questionnaire. After completing the section related to general information about you and your company, you are asked to answer the rest of the questions in two section sections. The outline of the questionnaire is as follows:

I. General information
II. Industry changes
III. Organizational changes

The results obtained from the questionnaires will be used only for academic purposes. Thanks in advance for your time and consideration.

Maryam Daneshvar

Thesis Supervisors: Prof. Dr. İrem Dikmen Toker, Prof. Dr. M.Talat Birgonül

A.1.GENERAL INFORMATION ABOUT THE COMPANY AND THE RESPONDENT

1. Please state the full name of your company.

   …….....

2. Please state your current position in the company.

   …….....

3. Please state the number of years that your company has been in the construction sector…….....

4. What kind of construction projects does your company mainly pursue? Please check the appropriate boxes.

   - ☐ **Building**
   - ☐ **Housing**
   - ☐ **Industrial**
   - ☐ **Infrastructure**
   - ☐ **Transportation**
   - ☐ **Energy**
   - ☐ **Other**

5. Please state the average Annual <u>Domestic</u> Turnover of your organization over the last five years ……US Dollars.

6. Does your organization operate in overseas construction projects? Please check the appropriate box.

   ☐ No ☐ Yes

7. If your answer for the above question is yes, Please state the name of different overseas countries your company has operated over the last 5 years.

   …….....**.....**

8. If your organization carries out projects in abroad , please state the average Annual International Turnover of your organization over the last five years ……US Dollars.

9. Please check the proper box for the Number of employees within the organization.

   □ < 100 □ 100-500 □ > 500

10. Does your organization operate in other sectors related/unrelated to construction industry? (Finance, manufacturing, tourism, etc.)

    Please check the appropriate box.

    □ No □ Yes

11. If your answer for the above question is yes, please state the sectors: …….....

A.2.CHANGES IN THE CONSTRUCTION INDUSTRY

I. To what extent the below factors affected **Construction Industry** in the past 20 years?

Factors	Impact On Industry						Explain the impact
	N/A	1	2	3	4	5	
Change in Politics							
Change in Economic Conditions							
Change in Technology							
Change in Regulations (Laws, Standards, etc.)							
Change in Socio-Cultural Conditions							

II. Please name the events which affected **construction industry** over the past 20 years. (A new regulation, new government, earthquake, etc)

No.	Event	Date	Explain the impact (what has changed in the construction industry?)
1			
2			
3			
4			
5			
6			

III. What has changed in the **Turkish construction companies in general** in the last 20 years? Please indicate the amount of change regarding the listed factors.

Factors	**Turkish contractors in general**			
	No change	Slight change	Significant change	Explain the "type" and "magnitude" of change
Profitability				
Level of Institutionalization				
Managerial ability				
Technical skills				
Business Culture				
Other 1 (please indicate)				
Other 2 (please indicate)				

A.3.ORGANIZATIONAL CHANGES

Please give examples of events (specific to your company or general changes in the construction sector) over the past 20 years which affected **your organization** the most.

Routines are defined as patterns of behavior which are done repetitively and are subject to change if conditions change.

Event/ Change Date	Before the event	After the event	Any changes in organizational routines? Please explain.	Any changes in abilities/ competencies? Please explain.	Any changes in strategies? Please explain.
	Our company was ……	Our company became…			

APPENDIX B

QUESTIONNAIRE RESPONSES

Table B-1: Questionnaire responses for general information about the company and the respondent

1. Please state the full name of your company.	Professional 1	Company 1
	Professional 2	Company 2
	Professional 3	Company 3
2. Please state your current position in the company.	Professional 1	General Manager
	Professional 2	General Manager and member of board of directors
	Professional 3	President
3. Please state the number of years that your company has been in the construction sector.	Professional 1	20 Years
	Professional 2	48 Years
	Professional 3	18 Years
4.What kind of construction projects does your company mainly pursue?	Professional 1	Dams, Irrigation and Potable Water Distribution Systems, Sewerage Treatment Plants, Hydroelectric power plants, Natural gas combined cycle power plants, Buildings
	Professional 2	Building, Housing, Industrial, Infrastructures, Transportation, Energy, Marine, Environmental and Purification Facilities
	Professional 3	Building, Housing, Industrial, Infrastructure, Energy, Marine, Environmental and Purification Facilities
5. Please state the average Annual Domestic Turnover of your organization over the last five years.	Professional 1	36 million US Dollars
	Professional 2	314 million US Dollars
	Professional 3	500 million US Dollars

Table B-1: Questionnaire responses for general information about the company and the respondent (Continued)

6. Does your organization operate in overseas construction projects? Please check the appropriate box.	Professional 1	No
	Professional 2	Yes
	Professional 3	Yes
7. If your answer for the above question is yes, Please state the name of different overseas countries your company has operated over the last 5 years.	Professional 1	N/A
	Professional 2	Uzbekistan, Kazakhstan, Ukraine, Georgia, Romania, Afghanistan, Iraq, Jordan, Saudi Arabia, Qatar, Dubai, Libya
	Professional 3	Kazakhstan, Afghanistan, Iraq, Yemen, Tajikistan, Azerbaijan
8. If your organization carries out projects in abroad, please state the average Annual International Turnover of your organization over the last five years.	Professional 1	N/A
	Professional 2	314 million US Dollars
	Professional 3	500 million US Dollars
9. Please state number of employees within the organization.	Professional 1	More than 500
	Professional 2	More than 500
	Professional 3	More than 500
10. Does your organization operate in other sectors related/unrelated to construction industry? (Finance, manufacturing, tourism, etc.)	Professional 1	Yes
	Professional 2	Yes
	Professional 3	Yes
11. If your answer for the above question is yes, please state the sectors.	Professional 1	Tourism
	Professional 2	Tourism, Finance, Information Technology, Manufacturing and Investment
	Professional 3	Tourism, Finance, Manufacturing

Table B-2: Questionnaire responses for changes in the Turkish construction industry

Factors	Professionals	Impact On Industry						Explain the impact
		N/A	1	2	3	4	5	
Change in Politics	Professional 1					4		(1) Ministry of Özal (1985-1995), (2) Lockerbie Event Investigataions (1991), (3) De-union of USSR(1991) , (4) Invasion of Afghanistan (2001), (5) Formation of New Turkish Governmnet (2003), and (6) Invasion of Iraq (2003) were the political events which intensively impacted Turkish construction industry over the past twenty years.The mentioned changed all together persuaded Turkish contractors to go abraod.
	Professional 2					4		
	Professional 3						5	
Change in Economic Conditions	Professional 1						5	(1) Global Financial Crises (2008), and (2) Increase in price of crude oil were the factors heavily impacted the Turkish construction industry over the past twenty years.
	Professional 2						5	
	Professional 3						5	
Change in Socio-Cultural Conditions	Professional 1				3			(1) Change in Life style impacted theTurkish construction industry over the past twenty years.Over the past twenty years, socio-cultural conditions improved.As a consequence the need for high-rise buildings, shopping centers, trasportation facilities , hotels, airports and infrastructure systems intensified.
	Professional 2				3			
	Professional 3						5	
Change in Technology	Professional 1			2				1) Technological changes did not signifacantly affected the construrion industry.This is because, construction industry is heavily manpower dependent.On the other hand, technological changes increased the level of productivity in the supply chain industry. These changes also increased the quality and safey of construction works.As an example, the changes decreased the time needed for construction related tests.
	Professional 2		1					
	Professional 3	✓						
Change in Regulations	Professional 1				3			(1) Implementation of the Public Procurement Law (No. 4734) (2003), and (2) BOT Law are detected as the regulations that impacted the Turkish construction industry.
	Professional 2						5	
	Professional 3			2				

Table B-3: Questionnaire responses of three professionals related to the events which affected Turkish construction industry over the past 20 years

No.	Event	Date	Explain the impact (what has changed in the construction industry?)
1	Turgut Özal Ministry Period	1985 - 1995	Increase in the presence of Turkish contractors in international markets
2	Tayeb Erdogan Ministry Period	From 2003	Increase in the presence of the Turkish contractors in international markets
3	BOT Law	1984	change in the role of Turkish contractors
4	Public procurement Law	2003	Increase in the presence of the Turkish contractors in international markets
5	Global Financial Crises	2008	Decrease in the volume of construction works
6	Crude Oil Booms		Increase in the volume of construction works in international markets and differentiation of markets
7	De-union of USSR	1991	Increase in the volume of construction works in international markets and differentiation of markets
8	Invasion of Afghanistan	2001	Increase in the volume of construction works in international markets and differentiation of markets
9	Invasion of Iraq	2003	Increase in the volume of construction works in international markets and differentiation of markets
10	Lockerbie Disaster Investigations	1991	Libya was not any more the target market of Turkish contractors
11	Change in Life Style		Specialization of the Turkish Contractors in certain types of projects
12	Change in Clients Requirements		Intensification of the level of competition in international markets
13	Technological Changes		Increase in the level of productivity in the supply chain industry, and quality and safety of construction works
14	New Construction Methods		Became a competitive advantage
15	New Equipment		Increase in productivity of construction activities

Table B-4: Questionnaire responses of three professionals related to the factors which has changed in the Turkish construction companies in general in the last 20 years

Factors	Turkish contractors in general			
	No change	Slight change	Significant change	Explain the "type" and "magnitude" of change
Profitability			ok	Increase in the number of new entrants into the domestic market (2003) decreased the amount of profits, earned by Turkish contractors in local market.
Level of Institutionalization			ok	Internationalization, in parallel with the opportunity of differentiation of markets for Turkish contractors, made companies more institutionalized, as they learnt much in overseas markets. For example, companies started to file correction reports, give precautions to prevent occurrence of accidents , arrange occupational accident or illness loss time reports, or determine visions and set periodical objectives, discipline works , apply quality and safety management systems, establish several other departments like logistic , procurement, labor hiring, scheduling, contract administration, etc.
Managerial ability			ok	The internationalization of Turkish contractors and differentiation of markets provided an opportunity for them to strengthen their managerial ability in the international markets. An observable change in managerial level can be mentioned that while nearly twenty years ago, a construction manager was controlling the construction works in the site, nowadays there are management teams supervising the works.
Technical skills			ok	The internationalization of Turkish contractors and differentiation of markets provided an opportunity for them to learn new technical skills from their partners in the international markets. For example, a Turkish construction company who learnt tunnel formwork system from its partner in international market attained a competitive advantage over its other rivals in the market.

Table B-4: Questionnaire responses of three professionals related to the factors which has changed in the Turkish construction companies in general in the last 20 years (Continued)

Business Culture			ok	By internationalization of Turkish contractors and differentiation of markets, business culture of the Turkish construction companies strengthened. The professionals claim that the tangible culture of the companies increased, whereas the intangible culture did not significantly improved.

Table B-5: Organizational Changes

Organizational Routines Which Generally Changed in Turkish Construction Firms Over the Past Twenty Years	Business Development Routine
	Contract Managemnet Routine