DEVELOPMENT OF INTERORGANIZATIONAL DOMAIN IN TURKISH CONCRETE PREFABRICATION INDUSTRY

MBA THESIS

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DEVELOPMENT OF INTERORGANIZATIONAL DOMAIN IN TURKISH CONCRETE PREFABRICATION INDUSTRY

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By

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September, 1995

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ABSTRACT

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M.B.A

Supervisor: Assoc. Prof. Oğuz BABÜROĞLU

September 1995

Collaboration is a viable and necessary approach to confronting many complex problems faced by the societies. Efficient response to problems such as declining industries or environmental issues which affect multiple sectors of society require analysis at the domain level.

Search conferences and referent organizations are instruments for the inter-organizational domain development. In this study, domain development efforts and change process in the Turkish Concrete Prefabrication Industry after a search conference is analyzed.

Keywords: Collaboration, Search Conference, Turkish Concrete Prefabrication Industry

OZET

TÜRK BETON PREFABRİKASYON SEKTÖRÜNDE ORGANIZASYONLAR ARASI İSBİRLİĞİ GELİŞTİRİLMESİ

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Çağımızda toplumların karşı karşıya bulunduğu çeşitli sorunların çözümünde işbirliği geçerli ve gerekli bir yaklaşımdır. Düşüşe geçen sektörler ya da çevre sorunları gibi toplumun çeşitli bölümlerini etkileyen sorunlara etkili çözüm ancak toplumun bu bölümlerinin beraber incelenmesiyle ve katkısıyla bulunabilir.

Arama konferansları ve referans organizasyonlar, organizasyonlar arası işbirliğini geliştirmek için sıkça kullanılan araçlardır. Bu çalışmada, arama konferansı sonrası Türk Beton Prefabrik Endüstrisindeki değişim süreci ve işbirliği incelenmiştir.

Anahtar Sözcükler: Işbirliği, Arama Konferansı, Türk Beton Prefabrik Sektörü

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CHAPTER I

INTRODUCTION

Turkish concrete prefabrication industry is a part of the construction industry in Turkey. The construction industry is important and also vulnerable to government policies. The market share of the concrete prefabrication industry is about 5% of the total construction industry and the companies in this field think that, this is very low when compared to European and American examples. They claim that prefabrication is a rational way of building, and it must be promoted rather than being blocked.

The articulated problem of concrete prefabrication industry is, having a small market share in the total construction industry, but there are other problems that are covered and not easily observed. The prefabricated concrete component manufacturers are trying to adapt to, and survive in a rapidly changing environment. This rapid change in the environment causes turbulence and necessitates to develop new tools for adaptation. If new tools are not developed, then there is the danger of maladaptation or not to survive.

The remedy for adaptation to turbulent environments is the interorganizational domain development. In other words, fostering collaboration rather than competition among actors of domain. The tools would enable this collaboration in a democratic (participatory) way but not in a coercive way.

One of the important tools for interorganizational domain is founding a referent organization, to be a center for regulation and enabling the member organizations to have a common appreciation about the field. The firms in the Turkish concrete prefabrication industry had founded a referent organization. The Association of Prefabricated Concrete Component Manufacturers (APCCM) is founded in 1984 and served the purpose of domain development successfully since then. Although, all the organizations in this field are not members of the referent organization, it represents and shapes the domain adequately.

Another tool that is frequently used to develop interorganizational domain and create a shared appreciation is search conferences. In these conferences, all the stakeholders participate and appreciate meta problems in the domain by themselves. In addition to that, they try to design a desired future. This methodology for interorganizational domain development is also used by APCCM .

This thesis aims to capture the change in this industry after the search conference. The perceptions of the stakeholders before and after the search conference, learning process, comments on the search conference will be examined to reveal the ongoing process. This is an intervention by the researcher to the organizational domain and the findings of this study are a result of field work conducted within APCCM. This qualitative research essentially depends on watching and interacting with people in the field. Thus, participant field research is the term used to describe the approach taken for conducting research.

One who thinks that, we are living in a turbulent world and there must be different tools for adaptation could benefit from this study as it tries to reflect a case about Turkish concrete prefabrication industry.

In the second chapter of this study, prefabrication and the Turkish concrete prefabrication industry is analyzed. In the following chapter, types of environments, active adaptation to turbulent environments and its tools are given within the context of literature survey . In the fourth chapter, the intervention to the field by holding a search conference is analyzed. The change process and the resistances & shortcomings are given. Finally, in the last chapter, discussion of the findings are presented.

CHAPTER II

CONCRETE PREFABRICATION INDUSTRY

2.1 Introduction

In its simplest form, prefabricated concrete elements can be defined as; produced in a plant other than its final location, transported and assembled structural components. They may be unreinforced, reinforced, or prestressed. They include in their numbers a wide range of products; blocks, bricks, pipes, slabs, conduits, beams and girders, columns, trusses and truss components, curbs lintels, lampposts, piles, wall panels, elevator shafts, and balconies. They are produced in plants, in small factories or even in the sites with the sufficient quality control. (Martin & Korkosz, 1982)

The main difference between conventional way of framing and prefabrication technique is, the industrial characteristic of prefabrication. In other words, prefabrication technique involves economy and intensive production. However, application of prefabrication technique to construction industry is delayed when compared to other industries, such as automobile, electronics etc. The main causes of this delay are:

- Prefabricated elements are larger and heavier
- Each structure is designed according to its environment
- Construction industry has a long history and traditions

In spite of the stated disadvantages for industrial production, prefabricated elements are used in

various structures such as; buildings, bridges, factories, harbors etc. The stages of prefabrication can be listed as follows:

- Design Phase
- Production Phase
- Transportation Phase
- Erection Phase
- Completion of the construction phase

Prefabrication technique should be used in accordance with the desired performance of the structure and it should enable to speed the completion of the construction phase to have an aspired finishing.

2.2 Classification of Prefabrication Techniques

Prefabrication can be classified into various categories by the altering criterion. Prefabrication technique can be divided roughly into two; as "closed system" and "open system". Designing a special building for its special conditions and producing these elements is the "closed system" prefabrication. All the details are considered, the planning is done with the special care and produced elements can be used only in that structure that is designed. In "open system" the produced elements are used nearly in all structures. This system has great flexibility and contains industrial character in itself. (Baysal, 1991)

Prefabrication can also be categorized as heavy weight or light weight, according to the weight or density of the materials used in it.

In addition to the above stated categories, prefabrication can be classified with respect to the

utilization areas. Buildings, transportation facilities, water structures, electrification, landscaping, infrastructures are the fields that the prefabrication industry is used in general.

2.3 Advantages & Disadvantages of Prefabrication

There are numerous advantages of prefabrication, compared to the conventional building systems both for the designer and the producer that are listed as follows;

- High strength concrete is obtained as it is produced in factories rather than in sites.
- By the help of the experienced workers and the hi-tech equipment the production time is cut
- The necessary time period for erection is shorter
- The elements are tested during transportation and installation
- Industrial production is obtained as standardized elements are produced
- Less maintenance and repair costs
- Precast elements can easily be produced for challenging structures

Although prefabrication technique is used widely, there are a few points that must be kept in mind about prefabrication.

- Tolerances are small, so careful production and erection necessary
- There must be adequate manufacturing facilities within a hauling distance of the project to fully realize the advantages
- Compared with timber and steel, concrete members are heavier and bulkier, which can be a disadvantage in seismical active areas, or on sites with proper soils
- The transportation and installation must be made with special equipment

2.4 History of Prefabrication Industry

In a relatively short period of time, precast concrete has become an important method for framing structures. Advantages of this system is partly because the material is prefabricated and partly because it is concrete. Thus the historical evolution of the prefabrication industry is closely related with the history of reinforced concrete.

In 1861, some prefabricated elements are used in Crystal Palace in London and the first patent was given in 1886 in United States, though the initial shortcomings were solved almost 50 years later. In the first decade of the 20th century, concrete and reinforced concrete was accepted in the construction industry in US and Europe.

As it is known, World War II was the most destructive one and the need for the new buildings was enormous. Because of time limitations for framing new structures the vivid period for the prefabrication began in 1946 and this intensive reconstruction lasted about 20 years in Europe. In this period more than 600 patent was registered. In 1970s the economy and energy crises as well as the saturation of the market slowed the growth. Although the market of the prefabrication industry is somehow narrowed nowadays, it is still an important part of the construction industry.

2.5 Construction Industry in Turkey

In 1994, the share of Turkish construction industry in GNP is approximately 5.5%. Although this number fluctuates about 6 %, the share of the industry in GNP is declining. In the last 10 years, the growth of the construction industry is slower than the overall economy. In spite of this decline, the

construction industry has always been very important for the economy because of high employment and direct relations with the production industries. In order to overcome recession, construction industry is usually promoted by the governments.

Another fact about construction industry is the decline of government expenditures in this industry. It is about 70 % when 1986 is taken as the base year. Government expenditures is increasing only for infrastructure constructions. However, the expenditure of private sector goes mainly to superstructures. (Akguc, 1992)

The share of house constructions is about 80% (Table 1). Thus, the growth of construction industry is directly related with the house construction expenditures and in Turkey house construction is mainly produced by the private sector. In addition to that , private sector is the biggest investor for the construction industry. The share of housing investments of private sector is about 40% and government investments is about 2%.Finally, the potential demand for housing is great but the construction rate is slower and the gap increases every year.

TABLE 1
Constructions in 1994 according to Construction Licenses

TYPE OF STRUCTURE	CONSTRUCTION LICENSE (1000 m²)	SHARE (%)
HOUSES	64774	80.0
COMMERCIAL BUILD.	9054	11.2
INDUSTRIAL BUILDINGS	3905	4.8
HEALTH-SOCIAL & CULTURAL BUILDINGS	1735	2.2
OTHERS	1422	1.8
TOTAL	80909	100.0

Source : DIE, 1995

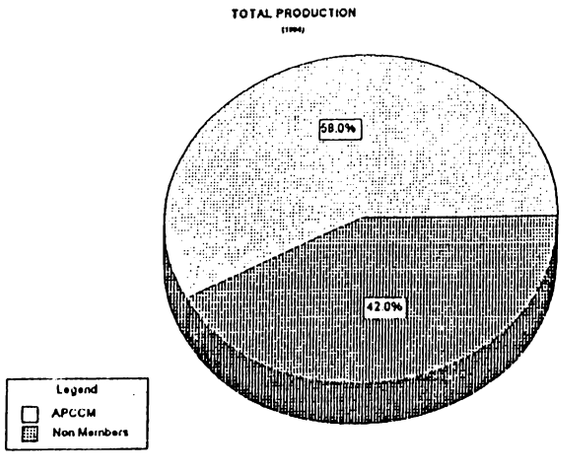
2.6. Prefabrication Industry in Turkey

Prefabrication technique is used in Turkey especially after 1960s. It is mainly used following the earthquakes to supply houses in a short period of time, in industry buildings and in infra-structures. The speed in construction was the main reason for all the preferences. In 1984, the Association of Prefabricated Concrete Component Manufacturers (APCCM) was founded, which is going to be discussed in detail, and it tried to shape the industry. In 1994, there are 63 organizations in this field. 10 of them belongs to government and others are private organizations. Out of this 63 organizations 23 of them are members, which are all private organizations, of the APCCM. The plant number of the APCCM members are 39 and they employ 4400 people. Total number of plants in the field is 79, but the data for total employment is not available.

TABLE 2
Production of Concrete Prefabrication Industry

Types of Production	APCCM Members		Other Organizations		Total Production	
	Quantity (Ton)	Share	Quantity (Ton)	Share	Quantity (Ton)	Share
Framing	463609	0.32	141630	0.10	605239	0.42
Infrastruct.	163233	0.11	127512	0.09	290745	0.20
Landscaping	67483	0.05	296282	0.21	363765	0.26
Electrificat.	134927	0.10	30379	0.02	165306	0.12
TOTAL	829252	0.58	595803	0.42	1425055	1.00

FIGURE 1
Production of Concrete Prefabrication Industry



The market share of APCCM members is 58% and nonmembers is 42%.(Fig.1) The types of products produced in 1994 for the industry is given in Fig.2. If we analyze the industry we see that the APCCM members are concentrated to framing and other organizations that are nonmembers are producing infra-structure and landscaping components mainly. (Fig.3)

FIGURE 2
Production of Concrete Prefabrication Industry

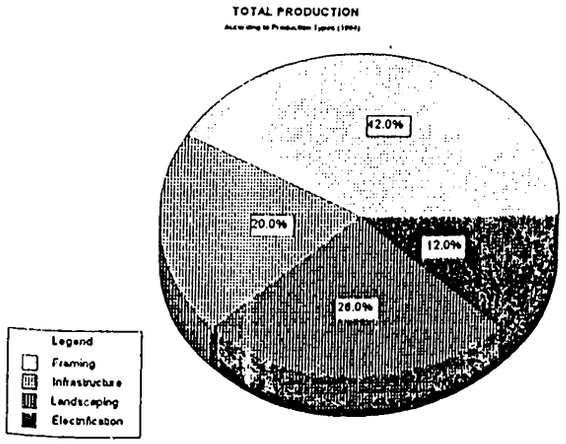


FIGURE 3
Types of Production

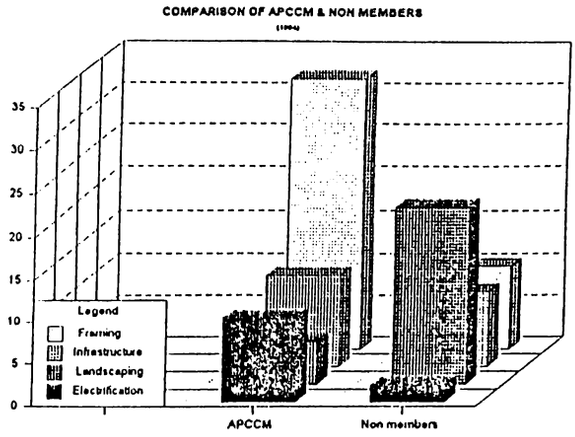


TABLE 3
The Customers & Product Distribution (1994)

Types of Production	Government		Private Investors		Total Production	
	Quantity (Ton)	Share	Quantity (Ton)	Share	Quantity (Ton)	Share
Framing	83182	0.06	522057	0.36	605239	0.42
Infrastruct.	166180	0.11	130065	0.09	290745	0.20
Landscaping	117758	0.08	246007	0.18	363765	0.26
Electrificat.	34449	0.03	130857	0.09	165306	0.12
TOTAL	396069	0.28	1028986	0.72	1425055	1.00

If we examine the customers of the concrete prefabrication industry, we see that government has only 28% share and the main demand is infrastructure elements. The main customer in the industry is the private sector. The findings are not surprising as private sector always has a crucial role in the concrete prefabrication industry history. In addition to that, the role of government in construction industry is eroding as stated above.

FIGURE 4
Customers

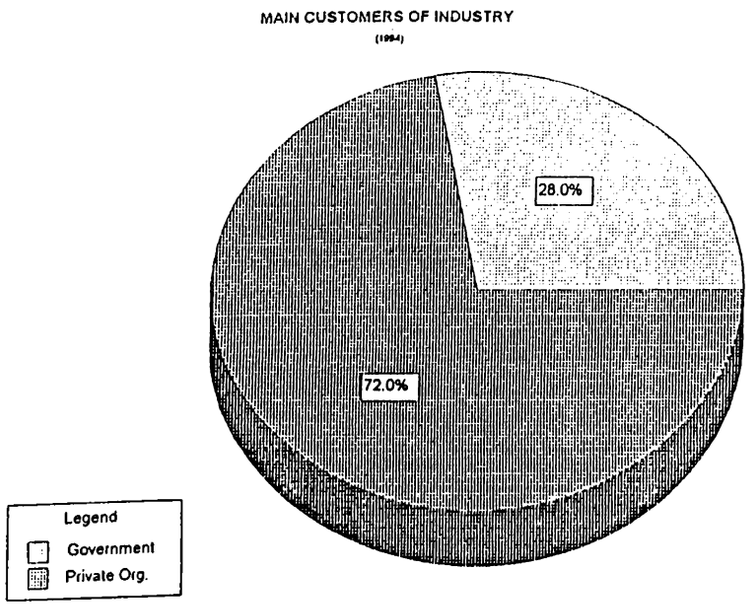
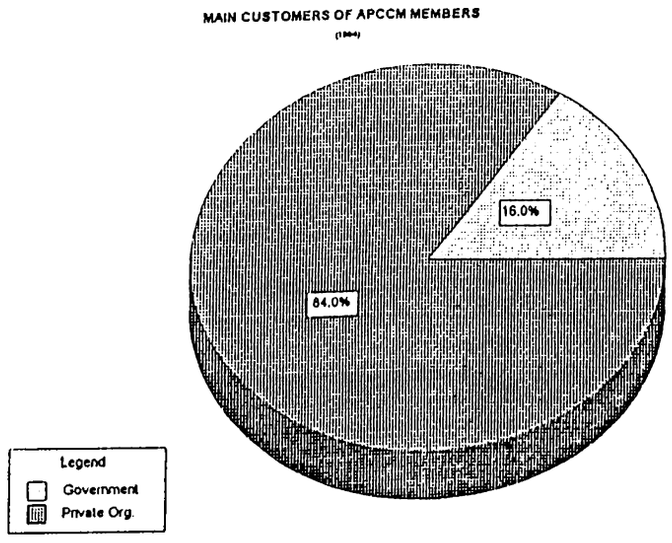


TABLE 4
The Customers & Product Distribution (1994) for APCCM Members

Types of Production	GOVERNMENT		PRIVATE SECTOR		TOTAL PRODUCT.	
	Quantity (Ton)	Share	Quantity (Ton)	Share	Quantity (Ton)	Share
Framing	38432	0.04	425177	0.52	463609	0.56
Infrastruct.	47353	0.06	115880	0.14	163233	0.20
Landscaping	16999	0.02	50484	0.06	67483	0.08
Electrificat.	31024	0.04	103903	0.12	134927	0.16
TOTAL	133808	0.16	695444	0.84	829252	1.00

FIGURE 5

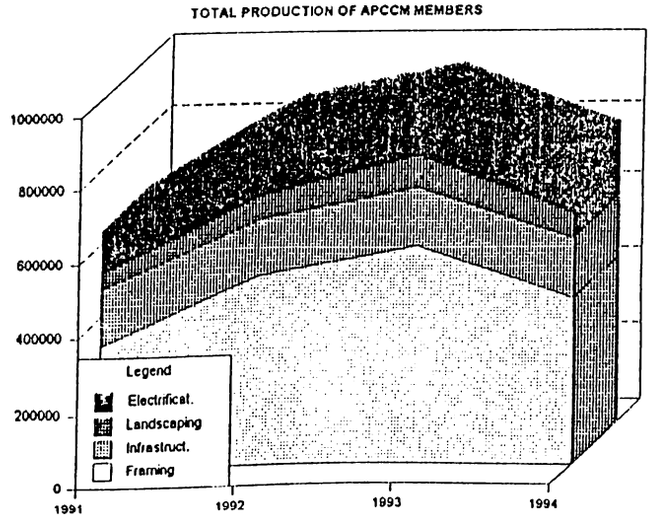


If we consider only the APCCM members' production, we observe that private sector has more importance than the government as the customer. (Table 4). One reason is that 10 of the nonmembers of APCCM belongs to government. That increases the share of the government as a producer and customer in the overall concrete prefabrication industry.

TABLE 5
APCCM Members Productions

Types of Production	1991 Prod. (t)	Share	1992 Prod.(t)	Share	1993 Prod. (t)	Share	1994 Prod.(t)	Share
Framing	319883	0.50	499079	0.56	582557	0.60	436609	0.56
Infrastruct.	151699	0.24	154788	0.17	152513	0.15	163233	0.20
Landscaping	46872	0.07	61555	0.07	87697	0.09	67483	0.08
Electrificat.	117961	0.19	174236	0.20	151115	0.16	134927	0.16
TOTAL	636415	1.00	889658	1.00	973882	1.00	829252	1.00

FIGURE 6



If we examine the total production of APCCM members from 1991 to 1994 we see that in the first two years there is a tendency to growth, but a decline follows in 1994. We can conclude that the growth rate was not very high and in addition to that, concrete prefabrication industry is very vulnerable to the policies of government. The crises in 1994 affected the industry. This graph represents the industry but sufficient data for nonmembers is not available.

As indicated before, the concrete prefabrication industry has about 5% share in the total construction industry. The share of concrete prefabrication is very low when compared to developed countries of the world. Table 6 compares the concrete prefabrication industry of some European countries and Turkey. In the table it can be seen that, Turkey has the lowest production and in addition to that, efficiency is the lowest. One thing must be kept in mind when analyzing the table; the countries in the table have solved their problems for housing and infrastructures largely.

TABLE 6
Comparison of C.Pref.Industry of some European Countries & Turkey

COUNTRIES	Total Production (1000 t)	Prod. per Capita (t/person)	Number of Plants	Prod. Efficiency (t/worker)
Germany	59048	0.74	1562	1144
Belgium	9100	0.92	361	1421
Denmark	2200	0.43	120	550
France	29282	0.52	1000	1240
Italy	20800	0.53	1450	941
Turkey	1425	0.02	79	207

Table 7 and Table 8 also supports that there is a room for growth for the concrete prefabrication industry in Turkey. Table 7 shows that, the average of BIBM (Bureau International du Beton Manufacture) countries for prefabricated components is much higher than Turkey's averages. In Table 8, we see that although the cement consumption per capita is not very different from the European averages, the share of concrete prefabrication industry is very low.

TABLE 7
The Market Share of Prefabricated Components in BIBM Countries

	Average (%)	Minimum (%)	Maximum (%)	Turkey (%)
HOUSES				
Roofing	48	5	97	0
Wall Panels	24	1	60	1
Slabs	70	15	97	0
Other Structures				
Roofing	40	2	61	18
Wall Panels	34	10	70	18
Slabs	70	18	95	18

TABLE 8
The Share of Prefabricated Elements in Cement Consumption

COUNTRIES	Total Cement Consum	Consum. per Capita (kg/per/yr)	Share of Prefab. Element in Cement Consum
Italy	44.5	770	13
Germany	36.7	445	26
Spain	25.6	648	21
France	21.5	377	17
Greece	7.6	739	2
Turkey	26.0	443	0.6

These numbers are not very different for Russia, some Eastern Europe countries, USA, Canada and Japan.

Industry evolution takes on critical importance for understanding the process in the industry . If we use the industry analysis (Porter, 1980) we see that this industry is in the transition between

introduction and growth phase after considering the buyer & buyer behavior, product and product change, competition, risk etc. The implications of industry analysis will be given in the discussion section.

2.7 The Association of Prefabricated Concrete Components Manufacturers

The APCCM is founded with the participation of the 20 well established firms of the concrete prefabrication industry in 1984. The APCCM articulates in its catalogue (1984) that ;

> "The ultimate objective of the Association is to close the gap that is believed to exist in the incorporation of modern techniques and technology, to the construction industry, to formulate proper solutions to common problems, to materialize the professional development and cooperation and to direct the technical and economical merits of the memberfirms for the improvement of the national technology.
>
> Coordination with the universities and professional institutions, exchange of technical knowledge, nationwide and internationally, and to perform technical and scientific research work, are considered as the tools to reach the defined objective."

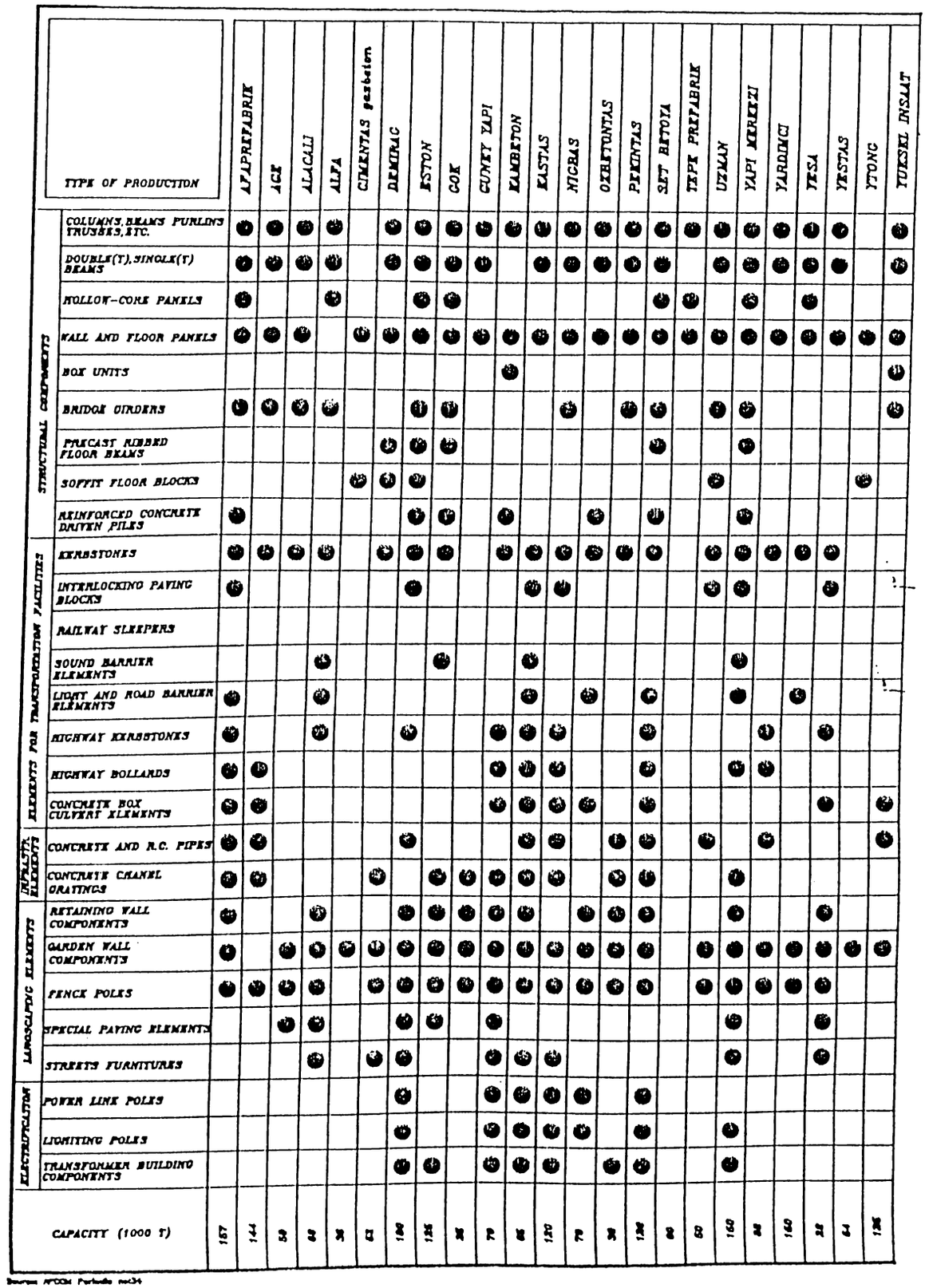
The establishing organizations are mainly concentrated to , West Anatolia, South Anatolia and Middle Anatolia Regions. The composition has not changed a lot, since then.

The APCCM has a governing and an auditing board that the members are chosen by election. It has a general secretariat, advisory council and five working comities. They are research & development, member relations, organization and strategies, public relations, price and bidding legislation committees.(Handbook of APCCM, 1992)

Following its foundation in 1984, the APCCM has held 7 symposiums, a panel and a search conference. It has held numerous seminars for internal training. It supported the Turkish Standards Institution for compilation and dissemination of a technical standard. It gives awards every year for projects and papers. It became a reference organization and has a distinct place in the construction industry.

The APCCM tries to shape the industry, the members of the Association has chosen to collaborate and develop the industry. The conditions for collaboration was suitable than fierce competition during the foundation phase of the APCCM. The Association has worked a lot and tried to fill the gap between companies and rest of the environment (domain). By holding a search conference APCCM had a new perspective and this will be given in the last chapter.

TABLE 9
Production types & Capacities of APCCM



TYPE OF PRODUCTION		AFYONPREFABRIK	AGC	ALACALI	ALFA	CIMENTAS gebze	DENIZAC	ESTON	GOK	GUNEY YAPI	KAMBETON	KASTAS	NIGBAS	OZBETONTAS	PEKINTAS	SET BETOVA	TEPE PREFABRIK	UZMAN	YAPI KEREZI	YARDIMCI	YESA	YESTAS	YTONG	TUKSEL INSAAT
STRUCTURAL COMPONENTS	COLUMNS, BEAMS PURLINS TRUSSES, ETC.	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●
	DOUBLE(T), SINGLE(T) BEAMS	●	●	●	●		●	●	●	●		●	●	●	●	●		●	●	●	●			●
	HOLLOW-CORE PANELS	●			●			●	●							●	●		●		●			
	WALL AND FLOOR PANELS	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	BOX UNITS										●													●
	BRIDGE GIRDERS	●	●	●	●			●	●				●		●	●		●	●					●
	PRECAST RIBBED FLOOR BEAMS						●	●	●							●			●					
	SOFFIT FLOOR BLOCKS					●	●	●										●				●		
	REINFORCED CONCRETE DRIVEN PILES	●						●	●		●			●		●			●					
ELEMENTS FOR TRANSPORTATION FACILITIES	KERBSTONES	●	●	●	●		●	●	●		●	●	●	●	●	●		●	●	●	●			
	INTERLOCKING PAVING BLOCKS	●						●				●	●					●	●			●		
	RAILWAY SLEEPERS																							
	SOUND BARRIER ELEMENTS				●				●			●							●					
	LIGHT AND ROAD BARRIER ELEMENTS	●			●							●		●		●			●		●			
	HIGHWAY KERBSTONES	●			●			●			●	●	●			●				●		●		
	HIGHWAY BOLLARDS	●	●								●	●	●			●			●	●				
	CONCRETE BOX CULVERT ELEMENTS	●	●								●	●	●	●		●						●		●
INFRASTR. ELEMENTS	CONCRETE AND R.C. PIPES	●	●					●				●	●		●	●		●		●				●
	CONCRETE CHANNEL GRATINGS	●	●				●		●	●	●	●	●		●	●			●					
LANDSCAPIC ELEMENTS	RETAINING WALL COMPONENTS	●			●			●	●	●	●	●		●	●	●			●			●		
	GARDEN WALL COMPONENTS	●		●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●
	FENCE POLES	●	●	●	●		●	●	●	●	●	●	●	●	●			●	●	●	●			
	SPECIAL PAVING ELEMENTS			●	●			●	●		●							●			●			
	STREETS FURNITURES				●		●	●			●	●	●					●			●			
ELECTRIFICATION	POWER LINE POLES							●			●	●	●	●	●									
	LIGHTING POLES							●			●	●	●	●	●			●						
	TRANSFORMER BUILDING COMPONENTS							●	●		●	●	●		●	●		●						
CAPACITY (1000 T)		157	144	50	60	30	63	100	135	30	70	60	120	70	30	130	60	50	160	30	160	30	64	130

Source: APCCM Portfolio no.34

CHAPTER III

LITERATURE SURVEY OF ORGANIZATIONAL ECOLOGY & ENVIRONMENT

3.1 Paradigms and Paradigm Shift

Paradigm is a way of looking at the world, a way of doing things, and a social matrix that thinks and acts in these ways (Mohrman & Mohrman, 1990). They can be seen at the societal level where they involve a great variety of institutions, or at the level of the individual where they influence his key actions. They are to be inferred from behavior rather than from what is professed; they are "theories in use" rather than "espoused theories" (Argyris & Schon, 1974)

Paradigms are the logic that underline the missions, systems of governance, strategies which are the key elements of the social architecture of institutions. They determine modes of managing change and types of negotiation between different organizations (Trist & Perlmutter, 1986).

The notion of paradigm shift is used to illuminate the changes that are necessary to survive for the organizations in different environmental levels. The three stages of paradigm shifts are : (Kuhn 1970) a period of normalcy under the governing paradigm; a period in which irregularities begin to accumulate that put the first paradigm at risk and create a growing state of crisis; and finally a period in which the first paradigm collapses and is replaced by a new paradigm. Paradigm shift for organizations from competition to collaboration, especially in the concrete prefabrication industry, will be the main theme of this study.

3.2. Environmental Types

Emery and Trist (1973) distinguished four environmental levels after considering the Western Societies as the leading part and concentrating on the dimensions of the environment that best characterize the overall environment and the system behaviors necessary for adapting to them. The four levels of organization of environments are;

I) Placid Random Environment

II) Placid Clustered Environment

III) Disturbed Reactive Environment

IV) Turbulent Environment

Placid Random is the simplest form of environment in which goals and relative values are distributed randomly and independently through the environment. It is the limiting case of no connection between the environmental parts. The survival of an organization in a placid random environment is the function of availability of these environmental relevancies and the approach-avoidance tactics available to the system. There is indifference between tactics and strategy and learning behavior observed is conditioning.

Placid Clustered is more textured but still essentially a placid environment which can be characterized in terms of clustering of the goals and relative values. The structuring that exists at this level enables some parts of it to act as signs of other parts with respect to approach-avoidance tactics. Survival in environments of this kind requires a second-order of feedback and choice of strategies are more adaptive than choice of tactics. Adaptation of these environments requires as a

minimum that a system be goal-directed and the learning behavior is goal directed meaningful behavior.

Emery and Trist states that; the first two environmental levels of which describe the conditions of relative stability have become marginal in the contemporary environmental mix. The next distinguishable environment is the disturbed-reactive environment. It is the world of big industrial organizations and equally of outsize government departments. It is a world in which everything gets centralized.

It approximates the economists' oligopolic market. It is a placid, clustered environment in which there is more than one system of the same kind, and hence the environment that is relevant to the survival of one is relevant to the survival of the other. Co-presence makes a real difference in a placid clustered environment because the survival of the individual systems requires some strategy as well as tactics. The casual texture (Emery & Trist, 1965)- the extent and manner in which the variables relevant to the constituent systems and their inter-relations are, independently of any particular system, causally related or interwoven with each other- of the environment is, through the reaction of others, be partly determined by the intentions of the acting organization. However the environment still provides a relatively stable ground of system conflict.

Given the relatively static nature of the environment within which the competition occurs, then it is possible for strategies to evolve that limit the disturbing effects of the competitive strategies and constitute a stable unit. In this level of environment it is possible to distinguish what is system

action and what is environmental response and what is environmental pressure and system response leading to learn the casual patterning of its environment. Adaptation requires strategy, operations and tactics together.

The new environment which is the most complexly textured but adaptive behavior is possible is called the turbulent fields. In such a field, large competing organizations, all acting independently, in many diverse directions, produce unanticipated and uncoordinated consequences in the overall environment which they share. These dissonances increase as the field becomes more densely occupied. So it seems as if the ground is moving as well as the organizational figures. These figures are so complex, so richly textured, that it is difficult to see how individual systems can, by their own efforts, successfully adapt to them. Strategic planning and collusion can no more ensure stability in these turbulent fields.

The trends that contributed to the emergence of dynamic fields are; the growth of organizations, the deepening interdependence between the economic and other parts of the society, the increasing reliance upon scientific research and development to achieve the capacity to meet challenge and finally the radical increase in the speed, scope and capacity of communication tools.

It becomes vital, therefore, that new ways through which the regulation and reduction of turbulence can be achieved as the turbulence is causing traditional bureaucratic organizations work considerably less well than they have previously been experienced to do.

As Albert Einstein observed "The significant problems we face can not be solved at the same level of thinking we were at when we created them".(Convey, 1989) So the demands for survival in a particular environment should place value on certain kinds of preparatory behavior at the expense of others and changes in the conditions of survival should induce changes in these values or goals.

Actually, there is one more type of environment that could be distinguished, but not be dealt. This higher order of environmental complexity would probably be similar to vortical processes (Emery & Trist, 1973).This environment is not used in framing, because adaptation to this kind of environment is considered to be impossible and only survival tactics could be used rather than adaptive behavior.

3.3 Adaptation to Turbulent Environments

The necessity for adaptation to turbulent environments is expressed above. The ways to down-grade them to the less complex types of environments or adaptation of organizations to this kind of environment will be tackled in detail but first the maladaptive defences are going to be viewed.

Emery and Trist (1965) proposes that men will seek ways of reducing the turbulence to the point where their repertoire contains the learnt responses to disturbed-reactive environments . This would imply segregation of the social field so that men have to cope with only a part or an aspect of that field. All such responses are forms of passive adaptation. They are also essentially defense mechanisms which seek to negate, downgrade, the environmental texturing with which they are faced.

The three dimensions of the passive adaptation are depth dimension, the means-end dimension, and the transverse dimension. The depth dimension appears as denying the reality of the deeper roots of humanity that bind social fields together and on a personal level denying the reality of their psyche. The means-end dimension appears as segmentation; sub-goals become goals in their own right and various goals are pursued independently of any over-riding purposes. The transverse dimension appears as dissociation; reducing the degree of association of an average member of the social field with others.

The characteristic attitudes of these dimensions are intolerance, prejudice and indifference. These will cause one dimensional society or polarization.

The maladaptive defences can easily be seen in societal, organizational or individual level. In Turkish society, polarization, dogmatism or fear of being fragmented can easily be observed in societal level due to passive adaptation. Active adaptation of organizations is going to be analyzed in detail and only the values is going to be discussed for societal and individual levels. Turkish Concrete Prefabrication Industry will be used for detailed research.

3.3.1 Active Adaptation

The change taking place in the world environment from disturbed-reactive environment to turbulent environment should bring the new ways of adapting. Response capabilities that can absorb and eventually reduce turbulence should be developed by new values and beliefs that are radically different from the present ones.

The socioeconomic and sociocultural configurations of advanced industrial growth societies are called Paradigm I (Perlmutter & Trist 1986). This environment reached the full extent of its dominance some time after World War II. A few names are given for the contemporary world such as Post-Industrial Society (Daniel Bell), Information Society & Post-Capitalism Society (Peter Drucker), Post-Economy Society (Herman Kahn) etc.

Perlmutter and Trist (1986) have compared three paradigms- Industrial (I), De-Industrial (D), and Symbiotic (S) at four levels: at the macro level (the nation state, market economy etc.), at the intermediate level (private corporation or metropolitan city), at the micro level (family and individual) and at the socio-cultural level. They conclude that type S society could use an immense variety of talents and all levels of ability. In this text a different approach, change of social patterns, is going to be used (Table 10) to understand successful adaptation to turbulent environments.

Changes in social patterns in transition to Post-Industrialism are given below. In Turkey although maladaptive defences are observed largely, active adaptation to changing environment could also be observed in individual or societal levels. For instance, White Dot Movement tries to increase the problem solving capability of the society by concentrating on the root causes. Furthermore this movement aims the virtues to be the governing values of the society. At the individual level, books about individual change finds readers. (Dokmen, 1994)

TABLE 10
Change of Social Patterns

Type	From	Towards
Cultural Values	achievement self-control independence endurance of distress	self-actualization self-expression inter-dependence capacity for joy
Organizational philosophies	competitive relations mechanistic forms separate objectives own resources regarded as owned absolutely	collaborative relations organic forms linked objectives own resources regarded also as society's resources
Ecological strategies	requiring consent responsive to crisis damping conflict small local government units	requiring participation anticipative of crisis confronting conflict enlarged local government units

Source: Emery & Trist (1973)

To meet these changes successfully involves a switch in emphasis from competition to collaboration. This switch is critical for survival in turbulent environments and for strategies of organizational ecology (Trist, 1977).The arrangements had to be negotiated by the many parties concerned. Only, with the participation of the member parties the interdependent procedures could be used.

Coercion by an authoritarian power should not be an approach, but negotiated order founded on collaboration rather than competition should be the methodology.

The main concern of this text is the paradigm shift from competition to collaboration at organizational level for adapting to turbulent environments. The Turkish Concrete Prefabrication Industry is chosen for thorough research. Hence, active adaptive approaches for organizations such as , networking, search conferences, building referent organizations, domain development are going to be dealt in detail.

3.4 Organizational Ecology

Organization-set (Evan 1966) means an organization field to a focal organization. This means a focal organization as related to the other organizations in the environment with which it has direct relations, both on the input and output sides of its activities. Organizational ecology (Trist ,1977) means not to a focal organization and its organization-set, but to the organizational field created by a number of organizations whose interrelations compose a system at the level of the whole field. It is an independent set of organizational entities that, in order to survive, must learn to share the limited resources of a common environment. So this overall system becomes the object of inquiry to understand and reduce the turbulence.

The relation between the focal organization and its organization set is seen in the transactional environment or task environment. There is, however, a wider environment beyond the trans-actional environment. The various organizations which compose the organization-set of a focal

organization have relations with other organizations, which overlap in their relations with still other organizations. They have only indirect relations with the focal organization. The field of these interwoven indirect relations constitutes the contextual environment. The problem in the contextual environment influences the transactional environment and from there the organization itself.

The idea of organizational ecology led to the idea of interorganizational domains. (Trist,1977) Interorganizational domains are concerned with field-related organizational populations. An organizational population becomes field-related when it engages with a set of problems, which constitutes a domain of common concern for its members.

A complex problem area of this kind is referred to as a problematique or mess (Ackoff, 1974). The issues involved are too extensive and too many-sided to be coped with by any single organization, however large. The adaptive strategy required to clear up a mess should be interorganizational.

Interorganizational domains is concerned with the level which is intermediate between the socially micro and socially macro. Their basic features are having a network character and tendency towards a negotiated order.

3.5 Aspects of Domain Formation

As mentioned above, turbulent environments brings complex problems (messes) that can not be solved by single organization or a few of them. The weak part of the societies, inter-organizational capabilities, should be strengthened by domain formation.

Domains are based on acts of appreciation where appreciation is a complex perceptual and conceptual process which melds together judgements of reality and judgements of value (Trist, 1983). The most important thing during appreciation of the meta-problem is not to make mistake in the identity of the domain which would otherwise brings a different social shaping than the necessary one. After having an acceptable identity the domain begins to take a direction for a development pattern into the future. These will cause overall social shaping as what organizations are to be included, homogeneity etc. In addition to that an internal structure is evolved as the various stakeholders learn to accommodate their partially conflicting interests while securing their common ground. The most important part of the restructuring of domain is appreciation that leads to a paradigm shift.

3.6 Referent Organizations

Referent organizations are a powerful way of domain development (Trist,1983). They can be established by one of the constituent organizations becoming the referent organization. Alternatively, no particular constituent organization becomes a central referent organization, but the organizational population creates a new referent organization which none of them dominates, yet all control. Finally there may be a third way for domain development where, there is no

referent organizations at all. The organizations remain uncentered and retain a purely network character. The last one contains social movements and operates through a culture rather than a structure. They are not in themselves purposeful. Youth movement of the sixties could be an example for last one.

Referent organizations are necessary to undertake purposeful actions in the name of the domain. It enables to cohere the organizational field in a way which builds consensus among the members. Thus, it can maximize collaboration and minimize conflict and undertake relevant and effective innovations.

Referent organizations have three broad functions (Trist, 1983). The first is regulation as distinct from operation. Operations are the business of the member organizations. Regulation involves setting the ground rules, determining the membership criteria, maintaining the values from which goals and objectives are derived and undertaking conflict resolution.

Referent organizations assume considerable responsibility of the domain, because its time horizon should be longer than the member organizations. This involves the second broad function of referent organizations; appreciation of emergent trends and issues and working out with the member organizations of desirable features and modifying practice accordingly.

Mobilization of resources is also an important item in developing a network of external relations. A staff is necessary to provide infrastructure support and to prevent the discontinuity of the

referent organizations due to difficulties in bringing the representatives of the member organizations. But the staff must be prevented from taking over the appreciative work of the leadership and take the role of specialist.

There are several varieties of referent organizations that combine different features.

TABLE 11

Types of Referent Organizations

Constituent	Representative
Mandated	Voluntary
Established	Emergent
Single	Multiple

Source: Trist, 1983

In one type, there is a constituent organization of the organizational population becomes the referent organization and another class in which a new organization is created for this purpose by the members of the domain. The second one has the advantage of members having more control over the referent organization. The first one could be advantageous, if the constituent referent organization includes a wide cross section of interest groups.

Mandated and voluntary referent organizations are self explanatory.

Established referent organizations have the mission of conservation and the emergent referent organizations have the mission of innovation.

In some domains there is single referent organization but there are many domains in which more than one referent organization is present. In the latter case the field may be polarized or may be in an unsettled state that the organizations are unaware of each other. This results to a lack of appreciation and causes not only conflict but also doubt.

The Association of Prefabricated Concrete Components Manufacturers (APCCM) is a referent organization which is founded in 1984. It has 23 members that are all private organizations. According to Trist's categorization it is a representative, voluntary, emergent and single referent organization.

It is representative because the organizations in the domain formed a new organization rather than one of the member organizations being the referent organization. It is voluntary in the sense that it is not externally mandated. It is emergent because it is trying to develop the domain in an innovative way. Although one may argue that, it is established because it is trying to establish rules, this is wrong because one of the main functions of the referent organizations is establishing ground rules and regulating. It is a single referent organization, because there is no organization in this domain representing organizations other than APCCM.

APCCM after its foundation, took only the role of regulation as Trist proposed, although there are successful referent organizations that take the role of operation as well. For regulation purposes, statutes and internal rules are set for establishing ground rules and maintaining the base values. Rules for membership are defined (The only prerequisite for membership is to have a stationary plant, where prefabricated components are produced). In addition to that rules for APCCM awards, scholarship and project competition for students are specified.

For appreciation purposes, this referent organization (APCCM) holds symposiums, benefit from an advisory council, enables the meeting of its members regularly, publish a periodic and holds search conferences etc.

In addition to the above stated activities, APCCM supports the technical and administrative projects that are valuable for the domain.

Emery (1976) draws attention to referent organizations where the organizational population is so large that it has to be represented by a sample of the members who then form some kind of panel. He suggested that this sampling should be random, each member organization to name an able and willing individual for a period of time. Special appointments would not be made and there would be no voting. The panel members would not be representing their particular organizations but would be an accountable individual for the domain. The aim is to prevent the domination of such members and minimize the manipulation of special interest groups. APCCM has not this problem now, but if it succeeds to increase the number of its members this could be an approach.

Trist (1983) proposes that the common characteristics of referent organizations are;

i) A critical situation exists that is not being coped with by traditional means. The crisis would emerge from a particular incident or could be a chronic, requiring long range remedies. There is an organizational vacuum that creates a social space for a new organization to enter.

ii) The problem to be met should be a mess.

iii) The communities concerned have a negative image and the first thing to do is to refuse this negative identity.

iv) Because the organization is independent but have a network character, it can secure the collaboration of key interest groups who may on other issues be in conflict or indifferent to each other.

v) Members of an innovating organization (referent organization) would be ineffective, unless they have sufficient and allocated resource (or have the capability to mobilize resources).

If we examine the Concrete Prefabrication Industry, we see that the main problem articulated is having a small market share in Construction Industry. Although some of the organizations have sufficient financial power, none of them was successful in the competition with the traditional contractors . This situation lasted for years. The organizations did not have a high level of negative image but the price and quality of prefabrication structures had negative image in the eyes of the customers to some extent.

Finally the organizations have the sufficient resources to establish a referent organization.

3.7 Processes of Domain Development

There are other processes that could be used besides referent organizations for domain development They are network building, holding search conferences, action learning, and convening the extended social field (Trist, 1983).

Networks are unbounded social systems that are nonhieararchical. In view of their nonhierarchical and open character, networks provide channels of communication which are fluid and rapid. They travel through the social ground rather than between institutional figures. They cross levels and cover the range from private to public. They bring the most unexpected people into contact so that temporary systems are formed which further accelerates the change.

Networks operate through culture rather than a structure mainly by using technology. The combination of culture and technology, working without formal structure like referent organizations and depending purely on social networks, would seem to be able to bring about the relatively rapid emergence of new values commonly shared over a wide field. Shared values, rather than formal structures are necessary to hold diverse social fields. At the center of contemporary network movements is the recentering from the primacy of the bounded single organization to the primacy of unbounded networks through which the members of organizational domains become linked.

Search conference is an another process that enables shared appreciation to evolve and emergent domains to develop more coherently. It has been developed by Merrelyn and Fred Emery (1978)

in Australia and it is now very widely used.

Searching is equivalent of appreciating and is carried out in groups composed of the relevant stakeholders. The group meets in social island conditions for two or three days. The opening sessions are concerned with interpreting the factors operating in the wider contextual environment. The content is contributed entirely by the members. The staff are facilitators only. Items are listed in the first instance without criticism in plenary session and displayed on flip charts which are available around the room. The material is discussed in greater depth in small groups and the composite picture checked out in plenary. The group next examines its own organizational setting or setting against this wider background and then proceeds to construct a picture of a desirable feature. Opportunities and threats are then examined. After participants agreed on ends in a future time perspective then the action steps are taken. So the participants (stakeholders) move towards a negotiated order and accept a system of macro-regulation that is designed by themselves. The search conference that is held for the Concrete Prefabrication Industry will be analyzed in the following chapter.

Another important process is the need of the referent organizations to remain in sensitive contact with the extended social field of the domain. The domain community must become part of the appreciation and learning processes .In the APCCM there is an advisory council that has 50 members. The council entails academicians, managers from different state organizations (TCK,DSİ,DPT etc.), engineers, architects, and some of the APCCM members. It helps the purpose of having strong relations with the domain.

There are various projects that used the above processes. If we name some of them; Jamestown Area Labor Management Committee, Sudbury 2001, The National Farmer's Union of England and Wales, The Craigmillar Festival Society, Aust-Agder County, A Regional Network in Horten are some of the cases in this field.

CHAPTER IV

METHODOLOGY

4.1 Action Research

Action research is proposed by Lewin to overcome the short-comings of positivism in 1947 as an approach in social research. Research and action are combined by arguing that social situations can best be understood if a change is applied and its effects are observed. Thus, action research can reasonably be conceptualized as a research design which entails a particular framework within which the relationship between the researcher and subject takes place. (Beinum,Faucheux,Vlist, 1993)

As a social science, it does not aim to be universalist, that is to be applicable everywhere, but it generates case specific insights. The action researcher intervenes in the problem situation in order to improve the self-help and action-taking competencies of the individual as well as to facilitate learning at the level of the organization. The purpose of action research is to advance theories about new organization and about the change process that produces it (Babüroğlu, Ravn, 1992).

Action research is different from the traditional academic research and consultant relationship. In a traditional academic research relationship, the researched is usually an object, the role of the researcher is governed by traditional values of objectivity and the product is usually a theory. In a consultant relationship, researcher will be called upon only for the purpose of the client he serves

and he thus be involved in a process which is inharmonious with the aims of social science (Beinum,Faucheux,Vlist, 1993). In action research, the role of researched changes from a passive position of being researched to a role of active participation. In addition to that, the role of the researcher changes from the position based on empirical or descriptive research to a position of active involvement. The relationship between researcher and researched is an explicit collaborative one characterized by joint involvement and shared responsibility.

It is possible to identify different branches, traditions or varieties of action research, such as action science, American action research, participatory action research, participatory research, socio-technical systems theory and social ecology, democratic dialogue or the communicative approach. However, clear and absolute distinctions between all of these approaches do not exist because they each have multiple dimensions and partly overlap (Finsrud, 1993).

Finsrud (1993) argues that, it is possible to identify only two action research approaches with explicit concepts and perspectives on regional development and networks. These approaches are the communicative perspective and the socio-ecological perspective.

One of the central starting points in the communicative perspective is to achieve organizational change on a broad scale through building up a critical mass of organizations .This stems from the idea that organizations can learn directly from each other through exchange of experience. This leads to a network concept as the main means of organizing and managing the work reform process.

Socioecological perspective is used in a general systems sense to refer to an interdependent set of organizational entities that, in order to survive, must learn in some mutually acceptable way to share the limited resources of a common environment . This perspective is given in the third chapter in detail.

TABLE 12
Comparison of Communicative & SE Perspectives

Characteristics	Communicative Pers.	Socio-ecological Pers	Comments
Focus	Devt. of structure and process for broad scale org. development	Devt. of the inter-organizational level to deal with shared problems	Comm. has a cleare, but more limited focus
Diffusion Strategy	Achieve critical mass and broad scale development through learning networks	Change efforts linked to multilevel domain formation to establish anchorage and policy	Both will value horizontal learning networks, SE will have a strong focus on links to institutions and policy level
Network	- Purpose: Support structure for intra org devt. projects - Function: Exchange of experience	-Purpose: Organize the inter-org. level, devt. of common ground and coord. of resources - Function:Handling of common tasks/ problems	Differences create diff. networks with diff. participants. SE-perspective has a wider network concept
Methodology/ Action Strategies	- Dialogue conferences - Development org. - Strategy Forum	- Search conferences - Network initiatives - Design of ref. org. - Domain development	Comm. has devt. more detailed criteria and specific meth., focuses more on intra-org. meth. than on network level

Source (Finsrud, 1993)

The comparisons of the different concepts in the two perspectives clearly shows that the socio-ecological perspective appears to be conceptually stronger on the interorganizational level and provides a more comprehensive field than communicative approach (Finsrud, 1993).

In this study, socio-ecological approach is chosen for action research. Search conference, which is one of the tools of socio-ecological perspective was held. However, after the search conference the action research could not be continued because of the client (APCCM).

4.2 Qualitative Research

This study become a qualitative research afterwards. The term qualitative research is a generalization of various approaches (interpretative techniques) which seek to describe, translate, and otherwise come to terms with the meaning, not the frequence, of certain more or less naturally occurring phenomena of the social world (Probst,Buchel, 1994). Qualitative research essentially depends on watching and interacting with people in the field. Participant field research is the term used to describe the approach for conducting research in the APCCM setting, after the search conference.

The research process within APCCM can be described in four phases: Entry, Discovery, Interpretation and Explanation.

The entry process was mainly started with the pre-search conference activities. Working with Dr.

Babüroğlu and having been employed in this industry for more than five years has enabled to reach key people in this field easily. The organizational problem is articulated by the APCCM governing board as the low market share . But redesigning the mission of APCCM was the latent need .In addition to that, APCCM governing board have already decided to hold a search conference and contacted with Dr. Babüroğlu, thus the entry phase started as an action research.

4.3. Search Conference as an Action Research Methodology

4.3.1 Pre-Search Conference Activities

Action research has a cyclic character. The cycle starts with problem identification and proceeds through data gathering, diagnosis, feedback to client, planning of action to be taken and execution, evaluation of results, and back for another iteration. (Babüroğlu,Ravn, 1992)

The first stage of the action research is the problem identification. APCCM claims that the market share of concrete prefabrication industry is less than its potential share, and asked the help of an OD practitioner, Dr. Babüroğlu.

So the cycle starts with the problem identification and follows with the next steps; planing of actions to be taken, data gathering. To hold a search conference was the chosen methodology and first of all the number and names of the participants were determined.

Who to choose as participants for a search conference is quite important. The collection of stakeholders must include those whose expertise is essential to building a solution. A more

comprehensive understanding of the problem is achieved as more stakeholders share their various appreciations about the problem (Vickers 1965). Ultimately, a sufficient variety of information is needed from stakeholders to match the complexity inherent in the issue itself.

Ashby (1960) refers to this as building in sufficient requisite variety. This variety strengthens the domain's capacity to learn about the continually changing patterns of interdependence among the stakeholders (Friend & Jessop, 1969). Hence, all of the stakeholders and their respective positions need to be identified. If we summarize who to choose as participants:

- Stakeholders affected by or who affect the planning
- Stakeholders who have a special interest in probable outcomes,
- Decision makers, implementers, responsible or relevant people in the private sector and in government

The participant list is designed by the collaborative effort of APCCM governing board and Dr. Babüroğlu. The list is given in the Appendix.

The next step was the interviews with the participants. In each interview, the reason for the conference as well as how the conference is going to be executed was explained to get the initial opinions of the participants. After the interviews were completed, the ideas about the current situation were mapped out without interfering to the content whether right, wrong or missing. Next, a relationship diagram identifying the problem areas due to the outcomes of the interviews are drawn and given in the appendix

4.3.2 Execution of Search Conference

The details of the process of search conferences is given in Chapter III. The search conference for concrete prefabrication industry was held in 18-20th of November in Antalya.

The search conference, performed under social island conditions , was facilitated by Dr. Oğuz Babüroğlu with the logistic help of some MBA students. The task of the facilitator is to help people recognize and self-manage their way out of dependency or fight-flight. The search conference process for concrete prefabrication industry is given in Table 13.

TABLE 13
Search Conference Process of Concrete Prefabrication Industry

PHASE 1	TRENDS THAT AFFECT CONSTRUCTION INDUSTRY
PHASE 2	THE EVOLUTION OF CONCRETE PREFABRICATION INDUSTRY
PHASE 3	THE FUTURE DESIGN OF CONCRETE PREFABRICATION INDUSTRY
PHASE 4	STRATEGIES
PHASE 5	HOW CAN THE STAKEHOLDERS OVERCOME WEAKNESSES?

The search conference started with the informal meeting to enable people to know each other, as some of them see each other for the first time.

Phase 1 : The process starts with the scanning of what is happening in Turkey, and particularly in construction industry. Using brainstorming, the group suspends judgement and evaluation and allows for conflicting observations to be expressed. All the material is recorded on flip charts and

simultaneously entered into computer. This is an appreciation phase and following the brain-storming the group is randomly separated into six groups consisting of five to six people each, to evaluate the threats and opportunities the construction industry faces. In forming the small groups APCCM members are tried to be distributed to each group. The small groups are then tried to evaluate the most important threats and opportunities and presented their work. After the presentations, a common table for threats and opportunities are prepared to reinforce the appreciation and this data is given in the appendix section.

Majority of the participants are not involved in this type of conference before, so some of the participants tried to dominate the process, but this phase ended with the desired outcomes.

Phase 2 : After appreciating the current environment, and identifying the threats and opportunities the second phase begins with the evolution of concrete prefabrication industry in Turkey. The kinds of events that shape the industry are identified. This further helped the stakeholders to appreciate the domain. This phase is covered by all the participants and was not discussed in the small groups.

In this phase, the map remained somehow unfinished because the APCCM members contributed less. The deficiency in the contribution of APCCM members did not continue in the following phases.

Phase 3 : After appreciation of the domain, then it was the time for designing the desired future,

which is a normative phase. In this phase participants tried to imagine the concrete prefabrication industry in the long run, i.e. in year 2004. This picture represents the future the participants desire, not the probable future. So they released some of the constraints in designing the future and this phase was again discussed in the small groups and presented afterwards. Anyway ,the participants again could not be far away from the realities and in the final case, some of the dreams are found very idealistic and they were ranked with the idealistic and realistic criterion separately. The desired future for 2004 is given in the appendix.

Phase 4 : After designing the desired future, the group then tried to plan, how they could reach their dream. Having the desired future in their mind, the small groups tried to form action plans. They tried to identify who is going to take the initiatives and when these actions would be taken.

Phase 5 : Depending on the previous phases and the interview results the weaknesses and strengths of concrete prefabrication industry was known. In this phase, the ways to overcome the weaknesses and sustain the strengths of the industry was discussed in small groups and again presented by them. This phase had both the appreciative and normative character.

The search conference then ended with the comments of the each participant about the methodology and findings. The participants also expressed their willingness to work with APCCM members for the future actions. Alternating mechanisms for collaboration in the future was proposed.

The strategy for the APCCM members has been very well formulated during the search conference; the APCCM members should enter the housing market. In order to achieve it, the strategic alliances should be promoted by APCCM, emphasizing the industrialist identity of its members.

Five commities are proposed to execute the plan;

i Strategic alliances and Finance Task Force

ii Marketing and Public Relations Task Force

iii Member Affairs Task Force

iv Technical Affairs Task Force

v Relations with other Referent Organizations Task Force

The Strategic alliance and Finance Task Force would develop the financial instruments and models for collaboration.This might include founding new organizations that contains a bank, a marketing firm and APCCM members in itself. The Marketing and Public Relations Task Force would concentrate on institutional advertising and improve the image of prefabrication. Technical Affairs Task Force would develop open prefabricated systems and organize the R&D efforts. The job description of other task forces and details are given in the appendix.

4.4 Qualitative Research & post search-conference events

After search conference, the documents about the conference was compiled and sent to APCCM for dissemination. Then an action plan was requested from Dr. Babüroğlu and this was sent to

APCCM (The action plan is given in the Appendix). This was the end of the action research , and the entry phase was completed.

The discovery and data collection phase have started. The data within this framework were obtained through observation, open interviews-especially with the general secretary and the ex-president-and by using questionnaires to be filled out. This phase lasted nine months by overlapping with the interpretation and explanation phases.

In the interpretation phase, validity and reliability of the data are checked with the historical data and secondary sources. In the last phase , based on the interpretations of data sources, explanations for the change process within the APCCM are developed.

Based on these results, recommendations were made. Contrary to the traditional action research, no involvement took place in the actual change processes. However, these interventions sometimes affected the outcomes.

The events that took place after the search conference and their implications can be given as follows. The action plan and search conference notes were discussed in the governing board of the APCCM . The governing board decreased the proposed task groups in the action plan from five to two by combining some of them. Furthermore, board tried to employ a project manager with a technical background to be in charge of the action plan, but failed to do so. The search conference notes were sent only to APCCM members, but after the warning that it should be sent

to all participants, it was delivered.

Two papers about the search conference was published. One of them in the periodic of the APCCM and the other one in a technical magazine. One of the participants from finance sector sent a letter to APCCM members about the willingness for further collaboration. Another member sent a document to all participants about the housing problem in Turkey with his suggestions for solving. This shows that participants(at least some of them) have the same appreciation of the domain and see the opportunities for further collaboration.

From November to April no action was taken. The governing committee decided to discuss the search conference findings with all the members and announced it. A second conference was held in April with the participation of APCCM members only. It was facilitated by Mr. Tınaz Titiz and a similar approach to the search conference was tried to be followed. Contrary to the first one executed under social island conditions, this was pressed by the time limitations. Only the last phase of the search conference was discussed and the governing board wanted the collaboration of all the members. This conference ended with the willingness of the members to continue these meetings regularly, but no other meeting with the participation of all the APCCM members was held.

In the following meeting of the governing board, one of the members stated his willingness for purchasing equipment and to enter the housing market together with the other firms. He also stated that, acting together and having an agreement with the same dealer would result in

discounts and market growth would only be obtained by entering to the housing market. This was one of the emerging ideas in the search conference, but the proposal was not supported by the members that had invested in the housing market already.

The APCCM did not continue the relations with the participants of the search conference since then. If we put the happenings into one sentence it can be said that after the search conference, no significant change is observed in the industry.

APCCM's lack of action after the search conference brings various arguments.

i) The board might not understand the importance of domain development and moving towards a negotiated order,

ii) The participants were not legitimate,

iii) Organizational defense mechanisms in APCCM

iv) Resistances to change,

v) Cultural differences between the firms,

vi) Firms facing different environmental conditions,

These arguments and discussion of the findings is going to be dealt in detail in the following chapter.

CHAPTER V

DISCUSSION OF THE FINDINGS & CONCLUSION

5.1 List of Reasons

The list of main reasons for the unsuccessful change process in the concrete prefabrication industry is given below.

- Company orientations & management practices
- Process model of collaboration and partial stakeholders
- Lack of a general theory of collaboration in the literature
- Change needs time
- Engineering mind set in the APCCM governing board
- Function of organizational defenses
- Concept of collaboration
- Contextual factors that are not pressing enough
- Cultural norms are not supporting collaboration
- Lack of leadership

5.2 Company orientations & management practices

In the previous chapter, it is stated that after the search conference, no significant change is observed in the industry and some questions were raised for further discussion. One of them was the differences between the firms and the other one was the firms facing different problems in their environment.

In an analysis (Tuncer,1995) considering twelve of the APCCM members, (those which operate more than 10 years in this industry) it is observed that firms emphasize different factors for competion in the concrete prefabrication industry . All the firms were private and three of them were part of a holding company. The employee number and the capacity of firms are given in Appendix . Some of the firms are very centralized, some of them are very innovative , some of them are managed by professionals and some of them by family members.

In addition to that, their sales percent of each product differs a lot. For example, Demirag gives service only in building construction, whereas Nigbas is mainly concentrated to reinforced concrete poles. The two APCCM members (Ytong & Cimentas) which are excluded in this study produce a specific product only. Some of the firms are trying to reach ISO standards but some of them do not pay the same attention during production.

The APCCM members have different company orientations and management practices. Probst and Buchel (1994) name the company orientation attributes as; process or result orientation, risk taking or avoidance, volume or value driven, market or technology driven, short-term or long-term orientation. The management practices are; individual leadership or teamwork, goal-orientation or consensus-orientation, inflexible organization or project organization etc. These differences sometimes bring difficulties in the actions to be taken by the APCCM, especially after the search conference.

Although, APCCM member companies have different management practices and company orientations, they have affected each other and the industry a lot. Porac,Thomas & Fuller (1989)

argues about how the mental models of organizational strategists determine the perceptions of competing organizations and responses to competitive conditions. They propose that the structure of the industry both determines and is determined by managerial perceptions of the environment due to the direct and indirect imitations. These shared beliefs help to stabilize and create a predictable environment. In this case the stabilization of the environment has been accelerated after the foundation of APCCM (referent organization) -the active adaptation approach in turbulent environments-.

5.3 Process model of collaboration & partial stakeholders

The inertia of APCCM can also be analyzed by a process model of collaboration. (Gray,1985) In this approach, the three sequential phases of interorganizational domain development are;

- problem setting
- direction setting
- structuring

Problem setting is concerned with identification of the stakeholders within a domain and mutual acknowledgement of the issue which joins them.

TABLE 14
Facilitative Conditions at Each Phase of Collaboration

Problem setting	Direction setting	Structuring
Recognition of interdependence	Coincidence of values	High degree of ongoing interdependence
Identification of a requisite number of stakeholders	Dispersion of power among stakeholders	External mandates
Perceptions of legitimacy among stakeholders		Redistribution of power
Legitimate/skilled convenor		Influencing the contextual environment
Positive beliefs about outcomes		
Shared access power		

Source (Gray, 1985)

The identification of the stakeholders is vital in domain development. The stakeholder set needs to reflect the complexity of the problem under consideration and shared perceptions of legitimacy are also necessary to initiate problem-setting. In the stakeholder set of concrete prefabrication industry there were some missing parties or the ones who hoped to represent that field did not show up.

During problem-setting, stakeholders are identified and legitimized, interdependence is recognized preliminary expectations are established, the boundaries of the domain are defined (Gray,1985).

In this problem-setting phase, to capture all the figures in the field is not easy, especially the government organizations hesitate to take part in these conferences. Also, it is not easy to select

all the "right" participants in the first time and this should be an ongoing process untill all the domain is captured.

Initiating collaboration is easy if the stakeholders recognize the interdependence among each other and believe that collaboration will produce positive outcomes. In the search conference of concrete prefabrication industry, some of the participants do not believe that collaboration (their contribution) will produce any outcome and wanted APCCM members to take more responsibility during the discussions.

Direction-setting is facilitated to the extent that stakeholders develop a coincident appreciation of their problem and a similar set of values to guide the search for a solution. In the search conference of concerete prefabrication industry, the mutual appreciation was to enter the housing market to increase the low market share, but in the final evaluation of search conference , some members in the APCCM governing board emphasized the importance of the infra structures.

Another interesting point is that, the unlicensed and unpermitted houses built because of high immigration to big cities from rural areas are considered, both opportunity and threat.The ongoing discussions could not resolve this conflict and the need for superordinate goals had been observed. Considerable time and effort may be needed before stakeholders achieve coincidence on values for the domain. The conditions for direction-setting phase of domain development for concrete prefabrication industry has not been fulfilled yet.

Problem-setting and direction-setting primarily achieve normative changes within the domain. These changes are necessary for collaboration, but not sufficient in themselves to redirect resources or regulate the ongoing activities of stakeholders. The perception of stakeholders, once again, that they are highly interdependent is going to facilitate structuring. Another condition, geographic factor becomes significant when structuring collaborative ventures. Collaboration is positively enhanced by physical proximity of the stakeholders whereas geographic dispersion increases the cost of face-to-face collaboration, and introduces the possibility that cultural differences will render structuring more difficult, which is the case for APCCM. The APCCM has a lot to do, to carry out the conditions in structuring phase for succesful collaboration.

Gray(1985) argue that the inability to achieve the appropriate conditions during each phase may be the best source of explanation for why collaborative efforts fail. However, development of domain-level collaboration is complex and dialectical in nature (Gricar & Brown, 1981) and to model it is not easy.

5.4 Lack of a general theory of collaboration in the literature

The literature on collaboration has grown substantially since Emery and Trist (1965) suggested that collaboration might be the appropriate strategic response of organizations in turbulent environments.

On the other hand, the limitations and opportunity costs of collective strategizing have begun to be noted, including the inability to progressively integrate participants' underlying values, strategic

inflexibility for individual members, free rider problems associated with initiatives in large groups (Selsky, 1991).

Gray & Wood (1991) mapped some research articles and examined the contributions and limits of major theoratical perspectives to explain collaboration and collaborative alliances (Table 15). Their conclusion is ; none of the theories offers a comprehensive model of collaboration and only negotiated order theory, political theory and institutional economics theory might be used for constructing a comprehensive collaboration theory. The lack of a general theory of collaboration leaves us to deal with collaborative alliances from different perspectives.

5.5 Change needs time

Another point about the domain development, strategic alliances, joint ventures, is that ,despite the increasing popularity, alliances often fail. The reported failure rate is about 50% (Probst & Buchel,1994). This is in accordance with the other change processes as well. The change process needs (societal, organizational or individual) planning, hard work, careful thought and patience.

Change is, among other things, fundamentally about producing new realities within reframed contexts in the minds of those involved (Bauer, 1991). However, it is more than an intellectual process: it is psychological process as well. Don Bryant (1981) suggests that there are at least seven factors that interact to determine how an individual might feel about a change that affects him:

- basic predisposition to change

- personal sense of security (individual personality, current circumstances)
- prevailing cultural beliefs (relating to a particular country, community, class etc.)
- extent of trust and loyalty (past & present relations with the group)
- objective historic events (effects of past changes)
- specific apprehensions and expectations about the particular change

Change needs time as it is an ongoing process, and partial losses should be challenged for further successes.

TABLE 15
Mapping of Major Theoretical Perspectives on Domain Level

Collaborative Issue	**Resource Dependence**	**Corp. Social**	**Strategic Man.**	**Micro-economics**	**Negotiated Order**	**Political**
Preconditions	High stakes& inter-dependence	Confluence of macrosocial conditions	Degree of organizatio n of the domain & motiv. to collaborate	Maximize efficiency & reduce transaction costs	Shared understandin g & response to a problem	Protect interests in commons resources
Process		Principle of shared responsibility		"Black box"	Realignment of alliance with environ.	Joint decision making
Outcomes	Collaborative alliance's efforts	Distributed risks & costs of goal attainment	Enduring links & longevity of the bridge	Structure leads to different agency problems	Maintaining alignment with environment	Need to build constitue ncies

Source (Gray & Wood, 1991)

5.6 Engineering mind set in the APCCM governing board

Of all the factors that influence an individual's attitude towards a change, the manner of change is the one most under the control of the change agent, manager (the one who is introducing the change).

In the concrete prefabrication industry, after the search conference, APCCM took the role of change agent.The APCCM governing board consists of all engineers and architects, (engineering mind set) and they do not know the dynamics of change. They are all good engineers but do not have experience in social sciences. The change process is not easy even in the existence of a professional and a group having the same background face difficulties. Besides, the group dynamics affect the outcomes, sometimes leading to defense mechanisms.

5.7 Function of organizational defenses

Argyris (1990) argues that whenever individuals or organizations are free to act as they wish and yet choose to act in ways contrary to their own interests, there is defensive reasoning going on. Argyris further comments that "Defensive reasoning occurs when individuals hold premises the validity of which is questionable yet they think it is not, make inferences that do not necessarily follow from the premises yet they think they do, and reach conclusions that they believe they have tested carefully yet they have not because the way they have been framed makes them untestable".

There is defensive reasoning in APCCM governing board, because after the search conference, in ten months' time no change is observed in the industry, and no action is taken by the board although they took part in the design process. Some of the members see the inertia, but others

refuse and argue that "the board is carrying out the project skillfully with its limited resources".This argument can not be accepted, because some of the members confess that more financial resource could be allocated to this project if needed.

Argyris (1994), comments on the mental models that we all develop early in our lives for dealing with difficult issues. He claims that ,these programs are sets of rules that we used to design our own actions and interpret the action of others. However, when we face embarrassing or threatening issues we use rarely the ones we think we use. Argyris and Schon (1978) comments about the espoused theories and theories-in-use. "When someone is asked how he would behaved under certain circumstances, the answer he usually gives is his espoused theory of action for that situation. This is the theory of action to which he gives allegiance and which, upon request, he communicates to others. However, the theory actually governs his actions is his theory-in-use, which may or may not be aware of the incompatibility of the two theories".

Argyris (1994) claims that, espoused theories differ widely, but most theories-in-use have the same set of four governing values. All of us design our behaviour in order to remain in unilateral control, to maximize winning and minimize losing, to suppress negative feelings, and to be as rational as possible.

This strategy prevents us from risk, embarrassment, and the appearence of incompetence. This deep defensive strategy blocks effective learning.

conference, there was a collaboration especially in the technical area (old mode of collaboration). In the search conference a new collaboration mode emerged. In this mode, some of the firms (which have investments in the housing industry) is going to loose their competitive advantage in the short run, but they will all win in the long run by the development of the market. The companies were not prepared to this new concept of collaboration.

The companies were not also prepared to be the partner of a strategic alliance where the strategy has been very well formulated during the search conference.

5.9 Contextual factors are not pressing enough

This new collaboration concept has not motivated the firms because of two main reasons:
First of all, the contextual factors are not pressing enough. The concrete prefabrication industry has a small market share in the construction industry, but the number of firms is very limited and each of them serves to its geographical area. The firms have bargaining power and enjoy relatively high profit margins. The firms nearly reached their capacity in 1995 and their financial risk is low when compared the construction industry in general. A second reason is that, firms have a desire to change the contextual environment, but they do not believe that they have the necessary power. They appreciate that, the most important factor for the industry is the stabilization of government policies and economic conditions,yet they do not have any control over it.

5.10 Cultural norms

The cultural norms of our society do not promote team-work and collaboration. There are not very many examples of referent organizations and succesfull change processes in our country. Gray (1985) contrasts the role collaboration plays in the cultures of Japan and Sweden with the prevailing preference in the U.S. for adversial approaches to dispute resolution. She considers cultural norms supporting collaboration as one of the powerful source of incentives. Ger (1992) points out the lack of collaboration in Turkey among firms or business associations in sharing information, developing a common strategy and socializing managers. This slows down, if not blocks, the collaboration process in Turkey.

5.11 Leadership

The leader has to be motivated, has courage and patience in order to execute the strategy that is formulated. In case of domain development efforts, this is not easy because the future is designed on negotiated order and participation of all the stakeholders is required. In case of equal power distributions, this may lead to stalemate. In case of the APCCM the problem is, the interest of some members do not coincide with each other and in addition to that the governing board do not believe that they could change the contextual factors. Besides the collaborative efforts require a different type of leadership where the source of power is the superordinate goals. The lack of leadership is one of the sources of unsuccessful change process in the concrete prefabrication industry.

By making use of the experiences of this study, some recommendations for the action research and inter-organizational domain building can be done. First of all, the preparation phase should be long enough that the participants understand the method, as search conference is a new tool (especially for Turkish companies). Lectures, discussion groups and interview groups should be the instruments in this phase.In addition to that,stakeholder selection must be done with care and partial stakeholders should be eliminated. Another cruical point is that, the role and the responsibility of the change agent should be made clear before the change process. The client must understand that the change agent is only going to help him and the task is going to be executed collaboratively. The method and the desired outcome must be understood by the client as this method supports negotiated order in a participatory way which is not common in Turkish practice.However, much of the progress can only be obtained during the change process.

This thesis is limited with the concrete prefabrication industry and it examines the period after the search conference. Ten month's time is not enough to capture the industrial change processes and further research in the field should be continued.

APPENDICES

SEARCH CONFERENCE PARTICIPANT LIST

PARTICIPANTS	PRIVATE	COMPETITOR	CUSTOMER	SIDE - INDUSTRY	SUBSTITUTE PRODUCT	NEW ENTRANT	TARGER CUSTOMER	APMC	FINANCE	OTHER
BAHATTIN ECEVIT (GAMA)										
CENGİZ KOCA (KOCA BETON)										
ÜNAL ILKER (ANK. METRO KONTR. TESK.)										
SAFA GIRAY (BİB ESKİ BAKANI)										
ŞEREF TOPKAYA (ALFA)										
FARUK YAĞIZ (KALAFATOĞLU)										
ÖMER PERÇINEL (PANEL MÜH.)										
SELÇUK ALTEN (MESA)										
NAZIM OZBAŞ (ÜÇGEN PROJE DANŞ.)										
ÖMER KIRAL (TKİ ERZİNCAN PROJESİ)										
EROL KULAKSIZOĞLU (PROF. İTÜ MİM.FAK)										
MEHMET SALTUK (REMES İNŞAAT)										
BÜLENT ŞENVER (DENİZBANK)										

PARTICIPANTS	PRIVATE	COMPETITOR	CUSTOMER	SIDE - INDUSTRY	SUBSTITUTE PRODUCT	NEW ENTRANT	TARGER CUSTOMER	APMC	FINANCE	OTHER
ŞÜKRÜ DALIŞ (UZAYKON)										
VEYSEL DOĞAN (DOKA)										
DOĞAN OZYİĞİT (SHOWPA)										
BEKİR UZUN (TOPRAK İŞVEREN SENDİKASI)										
TİNAZ TITIZ (TURİZM ESKİ BAKANI)										
DOĞAN HASOL (Y.MİM, YEM)										
METİN ÜLGİRAY (PAYSA)										
SADIK AKALAN (ESÇİM)										
CAVİT BAYRAKTAR (CİMSE-İŞ)										
İLHAMİ YUMAK (EKMEL BETON)										
YÜCEL ERDEM										
ALTAY ÇIZGENAKAT (TPB)										
DOĞAN DÖLCEL (TPB, ALFA)										
TİMUÇİN TÜMER (ACK/DSİ ESKİ YÖN.)										
ZİYA KARALAR (ASO MECLİS ÜYESİ)										

PARTICIPANTS	PRIVATE	COMPETITOR	CUSTOMER	SIDE - INDUSTRY	SUBSTITUTE PRODUCT	NEW ENTRANT	TARGER CUSTOMER	APMC	FINANCE	OTHER
BÜLENT YÜCESOY (TPB)										
DR. ERSİN ARIOĞLU (TPB)										
FETHI HINGINAR (TPB)										
METİN UYAROĞLU (TPB)										
TAHA AKSOY (TPB)										
ORHAN TEKELIOĞLU (SOSYOLOG)										
BÜLENT TOKMAN (TPB)										

MAPPING

CONCEPT (IN TURKISH DUE TO CERTAIN REASONS)

- Önüretim
- Önyapımlı
- Endüstriyel İnşaat
- Prefabrikasyon, prefabrik, prefabrike
- Ön İmalat
- Hazır Yapım

IDENTITY PROBLEM

- Are we Industrialists ?
- Are we Contractors ?
- Are we Sub-Contractors ?

FUNCTION PROBLEM

- What does Prefabrication include ?
  (Concrete, Steel, Timber)
- Concrete - Steel Conflicts in Industrial Structures
- Could Conventional Constructors and Prefabricators work collaboratively ?

ASSOCIATION OF PREF. COMPONENTS MANUFACTURERS

- What is their function ?
- APCM's relationship with Concept and Identity Problem
- Thing to be done : Contacting the foreign associations, establishing educational programs

STANDARDIZATION

- The insufficiency of the current standards affect the control mechanisms
- As a result, quality and image problems arise

PROJECT DESIGN, OPERATIONS AND ASSEMBLY COORDINATION (PROJECT MANAGEMENT)

- In need of a project department for compact service

WEAKNESSES

- Current regulations are designed according to the traditional/conventional construction system. Bureaucracy and Technocracy work accordingly.
- Financial problems : Due payments of government and cooperatives are long-termed.
- Public Buildings and Mass Housing (Toplu Konut) Projects are not designed according to prefabrication alternative.
- There is no R&D, since they believe it increases cost.
- Assembly line and transportation (200 km. feasible) costs.
  (Energy, Workmanship, Equipment)x2
- Tax : Since they are industrialists, tax obligations and union responsibilities are strict and it makes it difficult to compete in the market since cost get higher.

"Ülkenin sanayisi ne kadar ilerledi ki Prefabrikasyon ilerlesin ?"

TECHNICAL PROBLEMS

- Connection Details
- Isolation Problems
- Earthquakes
- It is feasible when they mass produce but due to market conditions they cannot make to stock and the cost of a scaffolding is very high.
- The architects are not used to prefabrication

THREATS

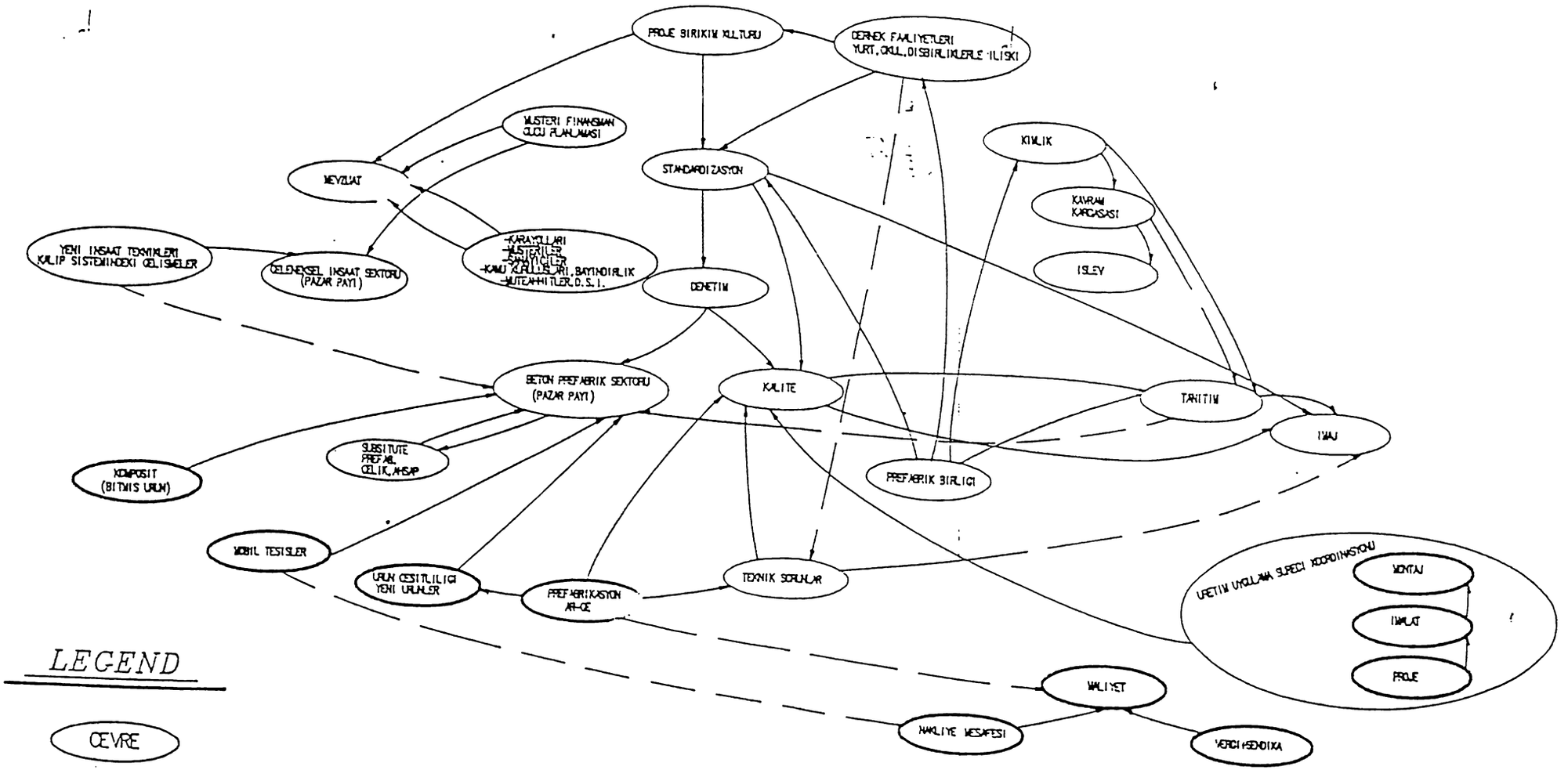
- Innovations in the scaffolding technology shortens the construction period as well as increasing the quality. This is an attack to the competitive advantage (speed, quality) of prefabrication.
- Importing prefabricated wooden house components from Canada and Northern Europe

OPPORTUNITIES

- Mobilized production : Solution to transportation problem
- Composites/Compact (All the fine works completed, ex : ceramics, doors, windows etc...) housing components can be manufactured
- Open Market : City Furniture (ex : banks, pots, bus-stops, fences etc...)
- Clients such as Municipalities etc...
- Variety : Timber etc...
- Quality + Aesthetics
- Differentiation could be achieved through method like pre-stress, pre-tension.

PROMOTION

- Function of the association
- Ineffectiveness in knowledge producing and information processing. As a result ends up with not reaching the public effectively.
- Image : *"Kurşun sıksan içeri girer."*



CAN MURAT ALPASLAN
OZCUR ATES
AHMET OCUZ AYTRCA
OMER TAVSANOCLU
SERSF TOPKAYA

İNŞAAT SEKTÖRÜ

ORTAK FIRSATLAR

- GÖÇ
  1. ŞEHİRLEŞME
  2. NÜFUS ARTIŞI
- KONUT, KONUT DIŞI İNŞAATLAR VE ALTYAPI İHTİYACI ARTACAK
- GLOBALLEŞME / EXPORT
- TEKNOLOJİK GELİŞME ARTACAK
- STANDARDLAŞMA ARTACAK

ORTAK TEHDİTLER

- HAKSIZ REKABET
- İSTİKRARSIZ (EKONOMİK VE SİYASİ) POLİTİKALAR OLUŞUMU
- PLANSIZ KALKINMA VE UZUN VADELİ POLİTİKALARIN OLMAMASI
- MİLLİ GELİR AZALMASI
- ALIM GÜCÜ AZALMASI
- FİNANSMAN DARLIĞI (KAYNAK VE MODEL)
- DENETİMSİZLİK

2004 YILI BETON PREFABRİKASYON SEKTÖRÜ GELECEK TASARIMI

	KONUT , KONUTDIŞI, ALTYAPI, ÇEVRE
FİNANSMAN MODELİ	⏲ ÜRETİM HIZINA UYGUN KAYNAK AKIŞI <u>(KONUT)</u> ⏲ UYGUN KONUT FİNANSMAN SİSTEMİNİN SAĞLANMASI (KONUT) - Uzun vade, Düşük Faiz, Yeterli Meblağ (Konut Bedelinin %70), Alman Konutun Teminatı Karşılaması - Uluslararası - Kullanıcıya verilen - Hızlı kaynak akışı sağlayan ⏲ ÖZKAYNAK VE TÜKETİCİYE TEŞVİK <u>(KONUT DIŞI)</u> ⏲ DIŞ BORÇLANMA, YİD VS... <u>(ALTYAPI)</u> ⏲ ZORUNLU KATKI, SPONSORSHIP <u>(ÇEVRE)</u>
ÜRETİM VE TASARIM TEKNOLOJİSİ	⏲ AÇIK SİSTEM (GELENEKSEL SİSTEME AÇIK) ⏲ TİP PROJE (ANAHTAR TESLİM) ⏲ MODÜLER TASARIM ⏲ RASYONALİZASYON VE VERİMLİLİK ⏲ YENİ MALZEMELERE UYUM ⏲ KOMPOZİT (ÇELİK, SENTETİK, HAFİF BETON) ⏲ KATALOG ÜRÜNLER (LİBRARY)
EĞİTİM	A) ÜNİVERSİTE EĞİTİM PROGRAMLARININ GÜNCELLEŞTİRİLMESİ - TASARIMCI - DENETİMCİ C) HİZMET İÇİ EĞİTİM -BÜROKRAT -TEKNOKRAT -POLİTİKACI -UYGULAMACI
STANDARD	TÜM İNŞAAT SEKTÖRÜNDE - TSE, İSO
EXPORT-GLOBALLEŞME	⏲ RUKKÖTTA ⏲ PARA, HİZMET, BİLGİ ÖNCELİKLİ SONRA ÜRÜN

ÜRETİCİLER	1. ÖRGÜTSEL ENTEGRASYON A) YATAY- DİKEY (ÜST BİRLİKLER İLİŞKİLERİ) B) ULUSLARARASI BÜTÜNLEŞME C) SANAYİCİ + MÜTEAHHİT + FİNANSMAN + PAZARLAMA (JOINT OPERATIONS) 2. AR-GE BİRİMLERİ KURULMALIDIR
TÜKETİCİ	A) ÖRGÜTLENMİŞ TÜKETİCİ B) BİLİNÇLENMİŞ BİREYSEL TÜKETİCİ
REKABET	A) HAKSIZ REKABETTEN UZAK -KALİTESİZ -KAÇAK -VE KONTROLSÜZ OLMAYAN B) PAZARLAMA, ORGANİZASYON, SATIŞ - TÜKETİCİNİN EĞİTİMİ, KAMUOYU BİLİNÇLENMESİ (VARLIK NEDENİ İYİ ANLAŞILMIŞ OLACAK) C) ÜRÜN ÇEŞİTLEME (SEKTÖR BAZINDA) D) UZMANLAŞMA E) EKONOMİK MODELLER (FİZİBİL)
PAZAR PAYI	% 20
YASA-MEVZUAT VE ŞARTNAME	1. TEŞVİK ⏲ VERGİ ⏲ HARÇ ⏲ FİNANSMAN 2. KONUTLARLA İLGİLİ MEVZUAT ⏲ YAPI FİZİĞİ ⏲ YAPI KONFORU ⏲ İNŞAAT İHALE MEVZUATI KENDİNİ EVİNİ KENDİN YAP (MEŞRU VE KOLAY) 'KEKY' 3. YAPI DENETİM + SİGORTA - BAĞIMSIZ MÜŞAVİRLİK SİSTEMİ TÜM İNŞAAT SEKTÖRÜ ⏲ ORGANİZE SANAYİ BÖLGESİ TEŞVİK - A+A **(KONUT DIŞI)** 4. KIDEM TAZMİNATI KONUSUNUN ÇÖZÜLMESİ (ÇALIŞMA MEVZUATI BİR BÜTÜN OLARAK) 5. GAYRİ MENKUL LEASING MEVZUATI VE YATIRIM FONLARI 6. BAYINDIRLIK BAKANLIĞI GENEL ŞARTNAMELERİNİN, SÖZLEŞMELERİNİN VE İHALE SİSTEMİNİN GÜNÜN ŞARTLARINA ADAPTE EDİLMESİ

ORTAK STRATEJİLER

GERÇEKÇİ	İDEAL	STRATEJİLER	PREF. ŞİRKETLERİ	PREF. BİRLİĞİ	BAŞKALARI	NASIL ?
8	1	SİYASAL, SOSYAL VE EKONOMİK ISTİKRAR			SİYASİ OTORİTE, BASKI GRUPLARI : (BİRLİK, VAKIF, SENDİKA) MECLİS, DPT VE MEDYA	
4	2	YASA, MEVZUAT, ŞARTNAME-STANDART			TMMOB, ÜNİVERSİTE	
3	3	FİNANSMAN			BANKALAR, YURTDIŞI FİNANS KURUMLARI, MÜTEŞEBBİSLER	1. YENİ ÖZEL KONUT İHTİSAS BANKALARI 2. GAYRİ MENKUL LEASİNG ŞİRKETLERİ 3. YAPI SİGORTASI DENETİM ŞİRKETLERİ 4.GAYRİMENKUL LEASİNG YATIRIM FONLARI KURULMASI 5. YURTDIŞI KREDİLERİNİN MOBİLİZASYONU
2	5	ÜRETİCİLER (ÖRGÜTSEL ENTEGRASYON, JOINT OPERATIONS)			MÜTEAHHİTLER, PAZARLAMA ŞİRKETLERİ, BANKALAR, MÜŞAVİRLER	ÜST BİRLİK KURULMASI (PREF. BİRLİĞİ, HAZIR BETON BİRLİĞİ, ÇİENTO MÜSTAHSİLLERİ BİRLİĞİ VS...) KOÇ, KOŞ

1	4	ÜRETİM VE TASARIM TEKNOLOJİLERİ			ÜST BİRLİK, TOPLU KONUT, MÜTEAHHİTLER, ÜNİVERSİTELER	AR-GE AÇIK SİSTEM STANDARDLARI BELİRLENSİN - TİP PROJE - MODÜLER TASARIM TOPLU KONUTTA AÇIK SİSTEME DAYANAN YETERLİLİK
5	6	EXPORT VE GLOBALLEŞME				ULUSLARARASI KURULUŞLARLA VE FİRMALARLA İLİŞKİLER VE İŞBİRLİĞİ
6	7	REKABET			MÜTEAHHİTLER	
7	8	EĞİTİM			ÜNİVERSİTE, MESLEK YÜKSEK OKULLARI	KOORDİNASYONLU İŞBİRLİĞİ

PREFABRİKASYON BİRLİĞİ İÇİN AKSİYON ÖNERİLERİ

Prefabrikasyon birliği, arama konferansı ile birlikte artık işlevlerine yenilerini ekleme ihtiyacı duymaktadır. Varolan problemlerin çözümü için düzenleyici bir görev üstlenen (örn.: görev grupları kurulmasını öneren ve bunların birbirleriyle iletişimini sağlayan ve düzenleyen), sektörü ve sektörün içinde bulunduğu daha geniş çevreyi etkileyen akımları değerlendirebilen ve bütün bu değerlendirmelere erişimi geniş bir altyapı desteğiyle kolaylaştıran bir konuma gelmelidir.

ARAMA KONFERANSI SONRASI ORTAYA ÇIKAN ATILIM STRATEJİSİ

Prefabrikasyon sektörünün arama konferansında ortaya çıkan atılım stratejisi şudur :

> Prefabrike yapı elemanları üreticileri konut sektörüne girmelilerdir. Bunun için stratejik işbirliği, prefabrikasyon birliği tarafından özendirilmeli ve "Sanayici Kimlik" ön plana çıkarılmalıdır.

ÖNERİLER

Prefabrikasyon birliği yönetim kurulu 5 kişiden oluşan *"De işim 2004"* adlı yürütücü komite oluşturmalıdır. Yürütücü komitenin görevi 2004 yılına kadar değişimi–planlama ve izlemedir. Bu grup her 3 ayda bir yönetim kuruluna çalışmalarıyla ilgili "İzleme ve İlerleme Raporu" sunacaktır.

Yürütücü komite üyeleri, değişimi planlamak ve yürütmek için gerekli olduğunu öngördüğümüz beş özel görev grubu kurmalıdırlar. Önerilen özel görev grupları şunlardır :

1. Stratejik İşbirliği ve Finansman Görev Grubu
2. Pazarlama ve Tanıtım Görev Grubu
3. Üreticilerle İlgili İşler Görev Grubu
4. Teknik Konular Görev Grubu
5. Üst Birlik Kurma Görev Grubu

Yukarıda belirtilen özel görev grupları 3-5 kişiden oluşmalı ve arama konferansında ortaya çıkan kendilerine ilişkin konuları gündemlerine almalıdırlar.

STRATEJİK İŞBİRLİĞİ ve FİNANSMAN GÖREV GRUBU

Finans sektöründe uzman, tecrübeli ve etkin ilişkileri olan kişi veya kişilerin de içinde yer aldığı, birlik ve birlik dışı iddia sahiplerinin içinde yer aldığı bir gruptur. Bu grup aşağıda önerilen konularda ve kendi içinde (diğer iddia sahiplerinin de önereceği) ilgi sahasına giren konular üzerinde çalışmalar yapacaktır.

Bu grup Komple Çözüm (KOÇ) ve Komple Şirket (KOŞ) önerilerini olgunlaştırmak amacıyla bu ve buna benzer uygulamaları (EMLAK BANKASI, YTONG ve SHOWPA vs.) inceleyerek birlik ve birlik üyeleri için modeller oluşturabilir.

- Yeni özel konut ihtisas bankaları (Konutbank A.Ş.)
- Gayrimenkul leasing şirketleri (Konut Leasing A.Ş.)
- Gayrimenkul leasing yatırım fonları (Konut Leasing Yatırım Fonu)
- Mortgage Sistemi ve benzeri yerli yabancı uygulamaları mevzuat ve işleyiş yapıları itibari ile inceleyip değerlendirmeli ve sektöre uygun alanları tesbit edip yeni oluşumlar için fırsatlar yaratmalıdır.

PAZARLAMA VE TANITIM GÖREV GRUBU

Gönüllü iddia sahiplerinden ve pazarlama ve tanıtım konularına ilgili olanlardan oluşacak olan pazarlama ve tanıtım görev grubu, birliğin katkıları ile ürünün (prefabrike elemanlar - prefabrikasyon) tanıtılması için tüketicilere sektörel açıdan (prefabrikasyonun imajına yönelik) tanıtım yapacak ve pazarlama aktivitelerini düzenleyecek ve yürütecek gruptur. Profesyonel bir pazarlama kuruluşu ile birlikte çalışılmasının yararları vardır.

Bu tanıtım ve pazarlama çalışması bütünsel bir çalışma olmalı ve aşağıdaki unsurları içermelidir:

- Halkla ilişkiler için arama konferansı sonuçlarını değerlendiren ve stratejiyi yaymayı amaçlayan sempozyum düzenlenmeli. Sempozyum öncesinde arama konferansına katılmayan iddia sahiplerine sunulmak üzere 2004 yılı prefabrikasyon sektörü stratejileri için *"Beyaz Rapor"* hazırlanmalı ve iddia sahiplerinden konuyla ilgili görüşleri sempozyumda alınmalıdır.
- Müşterilerin prefabrikasyonu ne şekilde gördükleri ve prefabrikasyondan beklentileri tesbit edilmeli ve bunlar gözönünde bulundurularak pazarlama

planı hazırlanmaya başlanmalı ve uygulamaya konulmalıdır. Bu sektörün yeniden konumlandırılmasının ilk aşaması olmalıdır.

- Sektörel reklama (Institutional Advertising) özel önem verilmelidir. (örn : Avrupa'da beton kullanımının yaygınlaştırılması için *"beton ve yaşam"* ilişkisini ön plana çıkaran sektör reklamları gibi ...)
- Üniversitelerdeki eğitim programlarında prefabrikasyon konusunun yer alması için çalışmalar yapılmalı. Mevcut uygulamalar/dersler desteklenmelidir.
- Uygulayıcı meslek mensuplarına yönelik tanıtımlar yaygınlaştırılmalıdır ve örnek tasarım ve uygulamalar ödüllendirilmelidir.

ÜRETİCİLERLE İLGİLİ İŞLER GÖREV GRUBU

Bu grup birlik üyelerinden gönüllüler, isteyen iddia sahipleri ve standartlar ve kaliteyi oluştumaya yönelik kurum ve kuruluşlardan temsilcilerin bulunduğu bir görev grubudur. Bu grup;

- Sektörde üretim yapan firmaların birlik dışında kalanlarının prefabrikasyon birliği çatısı altında toplanması için çalışmalar yapmalıdır. (Bu konunun gerekliliğini grup, birlik mensupları ve iddia sahipleri ile tekrar değerlendirebilir.)

- İnşaat sektöründe / prefabrikasyon sektöründe kalite denetimi ve kalitenin sağlanması, inşaat kontrollüğü ve yapı sigortası sistemlerinin geliştirilmesinde serbest müşavirlik sisteminin kurumsallaştırılması için
  1. Belediyelerle,
  2. Bayındırlık bakanlığı ile,
  3. İlgili diğer kuruluşlarla çalışmalar yapmalıdır.

- Denetim sistemi ve standarların uygulanması için çalışmalar yapmalı, bu kurallara ve standartlara uymayan rakiplerin ihalelere girmemesini ve yeterlilik alamamasını sağlamaya yönelik çalışmalar yapmalıdır.

TEKNİK KONULAR GÖREV GRUBU

Birlik üyesi ve inşaat sektöründen ilgili kişilerin içinde yer aldığı gönüllü görev grubudur. Bu grup;

- Kapalı ve açık sistemlerin geliştirilmesine yönelik çalışmalar yapmalıdır.

- Konvansiyonel sistemlerle prefabrikasyonun birlikte kullanımına yönelik teknik sorunlar olursa, bu sorunların çözümlenmesine yönelik çalışmalar yapmalıdır.
- Sektör bazında AR-GE organizasyonu yapılmalı (AR-GE Enstitüsü) ve ARGE fonu oluşturulmalıdır. Devletin AR-GE'ye teşvik vermesi bu konuyu detekleyici önemli bir gelişmedir. (örn : ABD'de, Japonya'da sektörel AR-GE çalışmalarının başarılı örnekleri vardır : Yarı iletkenler sektöründe yapılan AR-GE çalışmaları gibi.)
- AR - GE kütüphanesine yönelik çalışmalar başlatmalıdır.
- Yeni ürün geliştirilmesi ve geliştirilmesi safhasında ortak teknik problemlerin çözümlenmesine yönelik çalışmalar yapmalıdır.
- Pazar araştırması sonuçlarına göre çıkacak sonuçların teknik olabilirliğine yönelik çalışmalar yapmalıdır.

ÜST BİRLİK KURMA GÖREV GRUBU

Üst birlikte bulunması gerektiği düşünülen, prefabrikasyon birliğinden, hazır beton birliğinden, çimento müstahsilleri birliğinden ve diğer gerekli görülen kişilerin içinde yer aldığı gönüllü görev grubudur. Bu grup üst birlik kurmak için gerekecek altyapıyı hazırlamakla görevlidir.

MARKET SHARES W.R.T. OTHER FIRMS

	FIRM	1992				1993				1994				1992-1994			
		BUILDING CONSTR.	INFRA STRUCT.	LAND SCAPING	R/C POLES	BUILDING CONSTR.	INFRA STRUCT.	LAND SCAPING	R/C POLES	BUILDING CONSTR.	INFRA STRUCT.	LAND SCAPING	R/C POLES	BUILDING CONSTR.	INFRA STRUCT.	LAND SCAPING	R/C POLES
1	AFA PREFABR.	7.21	5.81	33.41		4.97	5.38	36.25		3.93	66.00	52.91		5.45	34.31	40.79	
2	ALFA	4.45	0.17			6.24	25.06			6.24	10.13	0.46		5.63	11.43	0.15	
3	DEMIRAĞ	3.53				3.79				6.82				4.54			
4	ESTON	15.56	3.50		31.47	8.72	42.47	0.68	31.46	9.26	16.29	0.67	31.26	11.21	19.79	0.47	31.41
5	GOK	20.37				24.84	0.51			28.90				24.43	0.13		
6	GÜNEY YAPI	2.72		0.92		5.95		5.10		4.81				4.53		2.20	
7	KASTAŞ	11.54	6.68	1.81	7.83	1.55	4.26	1.41	6.95	1.91	4.56	1.32	10.64	5.07	5.04	1.50	8.30
8	NİĞBAŞ	4.31	13.06	8.17	27.80	4.83	7.18	9.91	28.32	3.84	0.41	0.93	28.66	4.38	5.50	6.49	28.20
9	ÖZBETONTAŞ	4.07			7.72	3.66			7.81	5.30			8.22	4.26			7.89
10	PEKİNTAŞ	6.10	0.68			7.90	1.07			6.45	0.72	0.07		6.88	0.60	0.02	
11	SET BETOYA	11.41	5.13		25.18	12.65	5.31		25.46	10.29	0.15		21.22	11.57	2.81		24.20
12	YAPI MERKEZI	8.74	64.96	55.69		14.90	8.74	46.64		12.26	1.74	43.65		12.06	20.18	48.38	
	TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

% SALES OF EACH PRODUCT

	FIRM	1992				1993				1994				1992-1994			
		BUILDING CONSTR.	INFRA STRUCT.	LAND SCAPING	R/C POLES	BUILDING CONSTR.	INFRA STRUCT.	LAND SCAPING	R/C POLES	BUILDING CONSTR.	INFRA STRUCT.	LAND SCAPING	R/C POLES	BUILDING CONSTR.	INFRA STRUCT.	LAND SCAPING	R/C POLES
1	AFA PREFABR.	55.22	7.08	37.70		42.10	6.49	51.41		10.36	62.05	27.59		28.02	36.55	35.43	
2	ALFA	99.39	0.61			63.59	36.41			62.75	36.34	0.91		70.16	29.53	5.31	
3	DEMIRAĞ	100.00				100.00				100.00				100.00			
4	ESTON	50.11	1.79		48.10	33.92	23.54	0.44	42.09	33.64	21.08	0.48	44.80	39.99	14.62	6.28	45.11
5	GOK	100.00				99.71	0.29			100.00				99.89	0.11		
6	GÜNEY YAPI	95.24		4.76		87.44		12.56		100.00				92.41		7.59	
7	KASTAŞ	69.58	6.40	1.61	22.41	32.40	12.69	4.95	49.96	23.88	20.32	3.27	52.53	52.21	10.75	2.61	34.43
8	NİĞBAŞ	20.73	9.98	5.79	63.50	28.01	5.93	9.62	56.44	24.83	0.93	1.19	73.05	24.37	6.35	6.10	63.19
9	ÖZBETONTAŞ	52.63			47.37	57.69			42.31	62.04			37.96	57.27			42.73
10	PEKİNTAŞ	98.25	1.75			98.10	1.90			95.99	3.81	0.20		97.59	2.36	0.05	
11	SET BETOYA	47.19	3.37		49.44	57.06	3.42		39.52	54.96	0.28		44.75	52.83	2.66		44.51
12	YAPI MERKEZI	32.07	37.85	30.08		62.18	5.20	32.62		57.00	2.89	40.11		49.40	17.13	33.47	
	TOTAL	56.16	8.92	8.27	26.65	60.46	8.61	10.13	20.80	51.32	18.29	10.14	20.25	56.22	11.55	9.50	22.64

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