STRATEGIC PLANNING
FOR A
GYPSUM PLASTERBOARD PRODUCING COMPANY

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STRATEGIC PLANNING
FOR A
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ABSTRACT

STRATEGIC PLANNING
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This thesis creates a specific methodology for strategy development while drawing on approaches reported in the literature. The analysis is done at a company that produces gypsum, gypsum board, and related products. A sequential planning method is used where an environmental analysis is conducted in order to define the features of the environment that the company operates in. Then a capability analysis reveals the strengths and weaknesses of the company. For strategy development, this thesis introduces a position index that is used to discuss and differentiate alternative positions. Strategic options for a position are determined by common methods and results from the analyses. The evaluation is conducted with company management, and finally a future position is determined considering company objectives.

Keywords: Strategic Planning Methodology, Strategic Management

ÖZ

ALÇIPAN ÜRETEN BİR FİRMADA
STRATEJİK PLANLAMA UYGULAMASI

Özaydın, Elif
Y. Lisans, Endüstri Mühendisliği Bölümü
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Ekim 2007, 118 sayfa

Bu tez, literatürde yer alan yöntemleri temel alarak strateji oluşturmak için belirli bir yöntem geliştirmektedir. Analizler, alçı, alçıpan ve tamamlayıcı ürünler üreten bir firmada yapılmıştır. Kullanılan yöntem çevre analizi sayesinde firmanın içinde bulunduğu çevre koşullarını, ve sonrasında yapılan yeterlik analiziyle de zayıf ve güçlü yönleri tanımlamaktadır. Strateji oluşturmak için bir pozisyon endeksi tanımlanmıştır. Bu endeks sayesinde alternatif pozisyonlar arasında ayrım yapmak mümkündür. Stratejik seçenekler ise yaygın olarak kullanılan yöntemler ve tez içindeki analizler kullanılarak oluşturulmuştur. Önerilen farklı stratejik pozisyonlar, firma yönetimi tarafından değerlendirilmiş ve sonuç olarak bir alternatif gelecek kabul edilmiştir.

Anahtar Kelimeler: Stratejik Planlama Yöntemi, Stratejik Yönetim

To My Dear Fiancé and My Parents

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INTRODUCTION

1.1 Introduction

Recently, strategic planning has become an important issue for organizations. Briefly, strategic planning is the process of defining a strategy and allocating the human and capital resources to pursue this strategy. One of the conditions of a successful strategy is to differentiate an organization among its rivals using its unique business characteristics. Michael Porter defines strategy as being different and choosing different set of actions to create a unique mix of value[1]. In the long-term, this unique mix of value enables the organization to reach its goals and objectives. Hence, a strategy is more often perceived as a long-term action plan that enhances the competitive advantages of an organization.

Since a strategy is expected to be unique in its own context, there is no common approach or methodology for strategic planning. In order to define a strategy and pursue strategic planning, in general, a long-term action plan is made. This plan is often evaluated with the long-term objectives and a direction is decided regarding possible future contexts. Ideally, organizations should create a difference through distinct strategies; however it is not always possible to come up with strategic solutions because strategic problems have various characteristics. They address the nature and future of an organization; they affect the stakeholders; they have imprecise objectives; there is no solution formula and they require different approaches and methodologies[2]. The literature addresses strategic planning using various approaches and the point is that there is no one right answer to strategic issues. One common approach tries to position the organization within the environment, then generate strategic options and finally choose the most appropriate one. This simple framework has numerous variants each of which emphasize different dimensions along the path of strategic planning.

[1] Porter, Michael E.. "What is Strategy." Harvard Business Review November-December 1996: 61
[2] Coyle, Geoff. Practical Strategy: Structured Tools and Techniques. (Harlow: Pearson Education Limited, 2004) 3

Apart from planning approaches, there exist different perspectives to strategy development as well.

This thesis aims to develop a strategic planning approach focusing on creating a methodology that is appropriate for the company under consideration, i.e. a German company named Knauf, which produces gypsum board, gypsum powder and other gypsum related products. Knauf has many facilities around the world producing mainly gypsum board and gypsum powder. It also has a factory in Turkey, which is the main focus throughout this thesis. The need to conduct this study arises from the competitive environment that the company operates in and also the unstructured planning approaches used in the business. The strategic planning process throughout this thesis positions the company in its environment; reveal its weaknesses and strengths; create scenarios to deal with uncertainty and finally propose a direction for the company.

The strategic problem can be identified as follows: Knauf Turkey has preserved a premium market share (quantity based) since 2000; however with new entrants into the market and existing rivalry the company may find it difficult to further sustain its position in the long-run, hence what should Knauf do? A strategic planning study may not answer all these questions but could provide alternative actions and perspectives towards a solution. The scope of this thesis consists of analyses to understand the dynamics of the company and its environment, and of proposals for strategic directions. Different approaches from the literature on strategic planning are used in this thesis. Here, an extensive environmental analysis is done in order to position the company in its environment and understand the opportunities and threats. Furthermore, an internal analysis where the capabilities and weaknesses are highlighted is given to set the limitations and abilities of Knauf. Based on these analyses, alternative strategic directions are created and their evaluation is done together with Knauf management. The final step of implementing chosen strategies is beyond the scope of this thesis.

Need assessment shows that at Knauf, a structured strategic planning process is not in place. The company takes precautionary actions and also makes long-term plans in order to fulfill its main objective of preserving its quantity based market leadership in the drywall systems market. The environment however, is highly competitive, and requires Knauf to implement strategic planning in order to stay competitive in the

market. Furthermore, recent literature reveals that family businesses perform better in high profit markets. The loyalty, focus on business and non-bureaucratic structure enables these family businesses to succeed; however these same features may also jeopardize the business. Therefore, forming formal strategies in family businesses is crucial. It is argued that this formal strategy would bring a systematic development, and problems such as old-fashioned management, rapid decisions without deep analyses or loyalty beyond rationality would be overcome. For all these reasons of being a family business, lack of a structured planning approach and the competitive environment; it is thought that in-place strategic planning would be beneficial for Knauf.

There are two common strategies for all Knauf companies worldwide. The first is to produce products in different price ranges in order to have the power to lower prices in case of a price war. The more products Knauf has, the more possible it would be to compete in different market segments whenever there is fierce competition. The second is to prevent gypsum board from becoming a "commodity". This involves differentiating the features of gypsum board so that price would not be the only decision variable for the buyers.

In this thesis a specific methodology for strategy development is used due to the characteristics of the company and its products, i.e. Knauf Turkey is dependent on Knauf Germany in forming strategies and the product features are the same for all Knauf producers (the raw material and process of gypsum board production can not be changed). Hence, Knauf can not be flexible in strategy development and also it can not differentiate its products to be more competitive. Therefore, in this thesis we analyze the position of Knauf in the market and propose strategic options that fulfill the company objectives and improve weaknesses. In this way we aim to help sustain quantity based market leadership of Knauf and strengthen the company so that it would be competitive against the new entrants (small scale producers).

Basically, our methodology positions Knauf in its environment at first. Then, we create scenarios for the future and conduct a capability analysis in order to reveal weaknesses and strengths. The position of Knauf is defined by a position index, which includes all the necessary variables that define the company's position. Using the outcomes from environmental and capability analyses several strategic options are generated. These

options are then evaluated using the company objectives. The company may choose three different behaviors in order to fulfill its objectives. These are expansionary, risk–averse or do-nothing, which have different strategic option sets. At this point, the scenarios and these behaviors are used as a framework for the company objectives, i.e. for each scenario a different set of objectives is defined. The evaluation of strategic options results in alternative positions for Knauf, which are defined using the position index. A final evaluation of alternative positions is conducted with Knauf management. A simple illustration of the methodology is given in Figure 1.

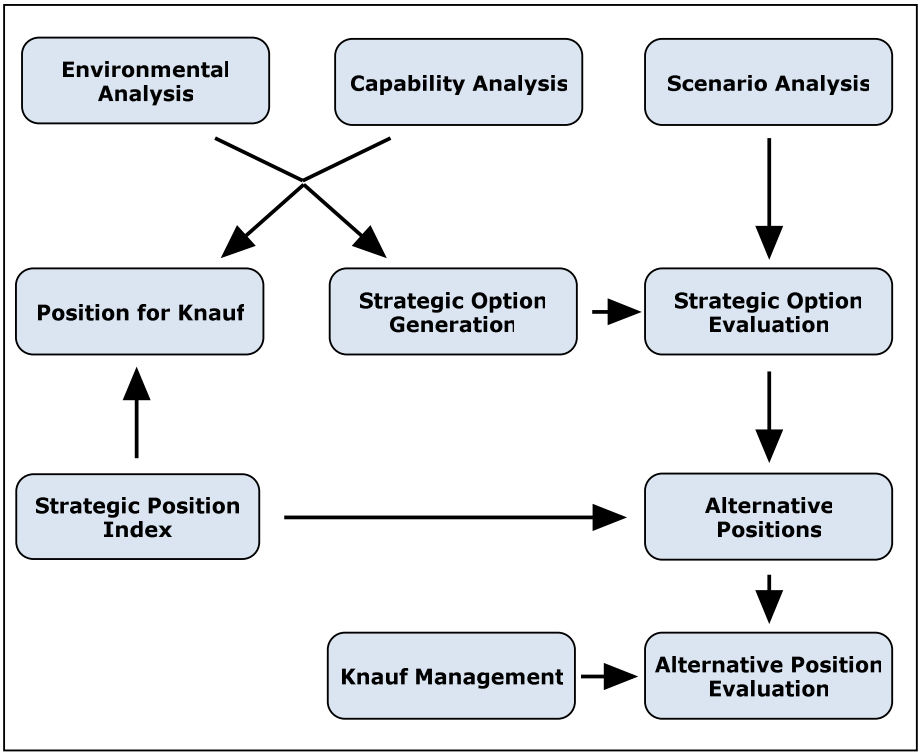

Figure 1. Methodology for Strategy Development

To begin with, the current market position of Knauf is determined through environmental analysis. The domestic and worldwide market and industry profiles are analyzed and the past and current features of the environment are defined. Future alternatives for the environment are described by scenarios that are used as a

framework in strategic option evaluation. Then, a capability analysis is conducted that determines company weaknesses and strengths. The resources, competencies and weaknesses are defined and a value network is used to illustrate these and also the processes.

In order to define a position for Knauf, a strategic position index is created. This index is created specifically for the methodology in this thesis in order to define the positions of Knauf in the future when it implements different strategies. This position index includes four categories of variables: mission and objectives, functional and operational configuration, corporate ties and corporate culture. The current position of Knauf is defined by using the outcomes from environmental and capability analyses in this index. In common approaches to strategy development, the strategic position concept is used to define only the current position of the organization. Here, we chose to use a position index so that we could show where Knauf is now and in which position it would be in the future when a certain set of strategic options are implemented.

Strategic options are generated using the outcomes from environmental and capability analyses as well as common tools from strategy development literature. These options are then evaluated using the company objectives under a given scenario and behavior. The scenario analysis in this thesis is used to unravel uncertainty in the future and integrates company objectives into the strategic option evaluation method. For each scenario, a set of company objectives and a behavior are determined and the strategic options that have the most positive effect on company objectives are chosen, hence a different position in the future for each scenario and behavior is defined (these future positions are also defined using the position index).

The final evaluation of alternative future positions is conducted jointly with the Knauf management. As mentioned earlier, the implementation phase is not discussed in this thesis; therefore strategy development ends with the proposal of future positions for Knauf Turkey.

1.2 Thesis Outline

The research and analysis for a strategic position at Knauf begins with an environmental analysis in Section 3.1. This analysis includes the company and market profile, and defines the features of the environment. In Section 3.2, using the outcomes from this environmental analysis, scenarios are created in order to unravel uncertainties in the future. Complementing this external research, a capability analysis is presented throughout Section 3.3 where the resources, competencies and weaknesses of Knauf are identified. Finally, the stakeholder expectations are stated in order to understand possible influences on strategy making at Knauf in Section 3.4. Throughout these analyses, methods such as PESTEL and value network, and methods defined by Geoff Coyle such as mini methods and field anomaly relaxation are used.

Once the environment and internal capabilities are structured for Knauf Turkey, a strategic position index is introduced in Section 4.1 in order to create a position vector for Knauf. Twelve strategic options are proposed in Section 4.2 and they are evaluated in the following section according to their contribution on company objectives, and the final decision of a future position is determined by the Knauf management.

Brief conclusions from these analyses show that Knauf Turkey faces two major threats: new entrants and the increasing competition for market share among existing rivals. The dealer structure and location of dealers; marketing activities and capacity problems are identified as major weaknesses. In contrast, logistics activities, experienced personnel, quality standards and the production routine are found to be the major competencies. Considering the outcomes stated above, a set of strategic options are proposed, which mainly address the weaknesses and aim at strengthening the market share leadership of the company. Evaluation of these options is conducted jointly with Knauf management, and a future position for the company is determined.

CHAPTER 2

LITERATURE SURVEY

The recent impact of globalization has been forcing managers to engage in strategic thinking and planning processes in order to compete in domestic and foreign markets. Of greatest concern is what type of a strategic management approach would fit the organization and whether a global strategy or a local strategy should be adopted. These concerns have given rise to arguments on regionalization and use of regional or local strategies for global firms. The main purpose of this review is to show that regional or local strategies enable firms to compete successfully in foreign markets, and that regional strategies are essential even for globally operating firms.

Many theories have been proposed to explain what strategic management is for a globally operating company. Although the literature covers a wide variety of such theories and case studies, the primary focus in this review is on some of the major topics which are among the most significant ones and emerge repeatedly throughout the literature. Hence, this review illustrates examples from common approaches to strategic planning in literature, giving insights about new trends and also highlights some of the major misperceptions. The scope of this review is mainly limited to the construction industry and strategic management applications for globally operating companies and their regional or local strategies.

In most studies, a strategy is defined as a long term plan of action designed to achieve a particular goal, as distinct from tactics or immediate actions with resources at hand. It is also agreed that one of the most important feature of strategy is that it should be unique in its context. Yet, there is still not a uniquely accepted definition in literature. Much of the earlier work on the definition of strategy tried to categorize the various dimensions. One of them is a three model strategy definition where there is linear strategy, which is methodical, directed and sequential; adaptive strategy, in which organizations continually assess internal and external conditions, and interpretive strategy where organizations try to attract enough individuals to cooperate in mutually

beneficial exchange[3]. There is another approach, which is more common, that defines three perspectives (lenses) for strategy development: design, experience and idea. Mainly, the design lens perceives strategy development as a rational, analytic and structured process, whereas the experience lens relies on collective experiences, and ideas lens relies on new ideas in and around an organization[4]. It is possible to adopt any of these approaches in literature and implement a systematic strategic planning, however the crucial point is to understand the system and adopt a framework that would best fit the business.

Following the trend of strategy development, many large construction firms have recently started to develop long-term strategies through employing key individuals with strategic expertise or through a consultant firm. Recent studies reveal that a complete framework of strategic management has not been adopted by many of the leading firms. The need for such a framework is necessary to implement deliberate strategies and manage emerging strategies. It is argued that one of the reasons why these firms can not implement effective strategies is the lack of an encouraged network to learn from one another and lack of diverse frameworks to manage their own strategic processes[5]. The diverse frameworks are referred to as understanding the difference between strategic thinking, management and planning and using the set of tools that fit the process best[6]. Thus, as mentioned earlier strategy development is beneficial as long as the appropriate set of tools and methodologies are used.

In companies such as Knauf, a structured strategic planning is expected to generate business development. The high profit margin in most markets is dominated by family businesses, contrary to the general impression that non-family corporations are the major component of the economy. Over the past ten years, it has been shown that these family businesses outperform their competitors by return on assets, shareholder return and revenue growth. What makes them this successful is argued to be their loyalty to the core unit, focus on core business and speed due to a non-bureaucratic firm

[3] Chaffee, Ellen Earle. "Three Models of Strategy." The Academy of Management Review vol 10 1985: 90.

[4] Johnson, Gary, Scholes Kevan, et al. Exploring Corporate Strategy. (Harlow: Pearson Education Limited, 2002) 39

[5] Price, A.D.F.. "The Strategy Process Within Large Construction Organizations." Engineering, Construction and Architectural Management vol 10 2003: 294

[6] Sull, Donald N.. "Strategy as Active Waiting." Harvard Business Review September 2005: 121-129.

structure. Yet, there are evidences from the literature pointing to pitfalls of family businesses. It is stated that, if loyalty is emphasized beyond rationality; focus is directed towards the past or rapid decisions are made without an interactive analysis, the virtues of a family firm may jeopardize the business. A detailed study on family businesses suggests that such firms should formulate a formal strategy in order to have a systematic development[7]. In doing so, it is claimed that commitment and successive planning would be emphasized and exchange of ideas would keep the business flexible to changes in the environment.

2.1 Approaches to Strategy Development

Once a direction is set for an organization, the way to implement strategic planning becomes crucial. In 1950s and 60s, those policies were taught under Business Policy, but nowadays the term strategic management inherits all the actions taken in order to achieve a company's objectives and adjusting the direction and methods to take advantage of changing circumstances. The common approach emphasizes strategic planning, where the company sets an action plan to reach the objectives and continually assesses the plan against changes. Research shows that this approach is not sufficient enough to meet the needs of the dynamic business environment of today. The main reason why some of these strategies failed is highlighted as the lack of understanding about the evolution of the organizations. Those strategies were in general static snapshots of businesses, which ignored the fact that businesses were going into a flow of change and that strategies needed to change accordingly.

On the other hand, modern approaches emphasize globalization and the need for global strategies. The term global strategy was first used in 1957 by McCloughry and James in their book Global Strategy, yet it is still a very important aspect. In 1980s, when global strategies became much more evident, it was argued that companies that do not adapt to the new global realities will become victims of those that do. Also, it was stated that there should be a distinction between global strategies and multinational strategies. If the same product is sold the same way everywhere, then the strategy for that company would be a global strategy. However, if the product offering is customized in each country/region, and the marketing approach is local, then the strategy would be a multinational one. Furthermore, the constant nature of a global strategy is faced with

[7] Allio, Michael K.. "Family Businesses." Strategy & Leadership vol 32 2004: 24-33

product and practice adjustments in local strategies. Göran Svensson contributes to literature by distinguishing among global, local and glocal strategies[8]. In addition to global and local strategies mentioned above, a glocal strategy is defined by Svensson, which reflects the aspirations of a global strategy while acknowledging adaptations and adjustments for local needs and shows that the consistency of a global strategy is not sufficient in today's competitive and dynamic environment.

The creation of such approaches has been subject to many proposals in literature. In 2004, a balanced approach to strategy has been offered by Nuran Acur and Ümit Bititçi, which integrates the resource based and market based approaches to strategy. Basically, the approach integrates alignment of core competencies and customer satisfaction in such a way that the position of the company in the market is determined simultaneously through its market based and resource based strategies. (Acur 2004) Another approach is from Geoff Coyle, who presents strategic management through his acronym ACTIFELD, which is used to analyze process oriented strategies and evaluate them with practical tools[9]. These practical tools are not only from the literature but also from the military. Russell et.al have also emphasized the importance of a militaristic approach in strategic management through a case study. They found that the strategic action approach of Desert Storm in 1990, Kuwait yields in rapid and effective results when implemented to Weyerhaeuser, an international forest products company[10]. Thus, it is shown that an approach to strategic management must have many dimensions, ideally combined with traditional and contemporary tools.

The common approach to strategic management follows a sequential pattern throughout the studies in literature. At first, objectives are defined, then environmental and internal analyses are conducted and finally a certain set of tools are used to evaluate the fitness of the proposed strategy. What differs between the traditional and modern approach is the scope and context of the analyses and the integration of many concepts during evaluation. Earlier studies have emphasized the emergence of

[8] Svensson,Göran. "Glocalization of Business Activities." Management Decision vol 39/1 2001: 6-18.

[9] Coyle, Geoff. Practical Strategy: Structured Tools and Techniques. Harlow: Pearson Education Limited, 2004.

[10] Russell, Leland, Reynolds, Joyce J., Chadalavada Sudhir. "Case Study: How a Weyerhaeuser Unit Executed a Winning Strategy Using Desert Storm's Approach." Strategy & Leadership vol 32 2004: 45-54.

strategies. Mintzberg, for example, suggested that strategy making should focus on the motives of decision in 1973. Later in 1987, Miles and Snow proposed four strategic types based on an organization's orientation towards product development, which however failed to address the formulation process of a strategy[11]. Similar approaches failed when implemented in today's environment since they were limited in understanding the whole system**.** Despite their limits, these views can still be used as long as they are tailored to fit the context. When Akan et.al analyzed Porter's well known generic strategies, they found out that certain tactics can be used to overcome the gaps in implementation and organizational performance issues[12]. Another example on how traditional approaches should be adjusted to contemporary needs is given by Tony Grundy on Porter's Five Forces Model. He states that the original model oversimplifies the industry and appears to be self-contained, thus he proposes a format, which takes into PEST factors (political, economical, social, technological), growth drivers and competitive position[13]. Thus, the important point here is to understand the different framework of all approaches and choose the methodologies that best fit and explain the environment and the system.

2.2 New Trends in Strategy Development

There are numerous articles on new trends in businesses and economics to be addressed during strategy formation in literature. Recently, Mark H. Daniel has covered almost all of those trends in his article "Mastering the Dynamic Nature of Modern Strategy" for better strategic management and suggests that globalization, complexity, dynamism, turbulence, rationalization and connectivity should be addressed. Daniel introduces the concept of ephemeralization, which refers to becoming less physical and more virtual. With this new paradigm, he emphasizes the fact that the computer and

[11] Segev, Eli. "Strategy, Strategy Making and Performance: An Empirical Investigation." Management Sciene vol 33 1987: 258-269.

[12] Akan, Obasi et al.. "Critical Tactics for Implementing Porter's Generic Strategies." Journal of Business Strategy vol 27 2006: 43-53.

[13] Grundy, Tony. "Rethinking and Reinventing Michael Porter's Five Forces Model." Strategic Change vol 15 2006: 213-229.

internet based cyber world changed the way that business is done, removed certain barriers and created opportunities as well as risks[14].

Similarly, another one of those trends is to apply strategic management in information systems and use information systems tools to apply strategic management[15]. Studies show that as information system technologies integrate more and more with businesses, they also need proper strategies in line with the overall strategy. What makes IT system this important is highlighted to be the fact that IT systems are long lasting assets and they need to carry the organization forward for 10 to 15 years. About the use of IT systems in strategic management, it is proposed to adopt smart systems such as connectivity to products to monitor their performance. This provides a further direction in strategic management and enables the firm to take preemptive actions[16].

Apart from IT systems, another trend seems to be observing the Eastern countries, especially Japan, to get some insights about strategic management. In 1990s, this trend was initiated by Gary Hamel and C.K. Prahalad in their article "Strategic Intent". They argued that Western firms focus on fulfilling their ambitions and search for advantages they can sustain, whereas the Japanese firms leverage their resources by emphasizing organizational learning and always aim seemingly impossible goals. They also proposed that assessing the current advantages of known competitors will not help an organization to understand the stamina or inventiveness of potential competitors. Strategic intent, thus, is referred to as an active management process that includes a focus on winning, motivation, individual and team contributions and new operational definitions in order to sustain enthusiasm. Evidence is provided from Canon and Komatsu, who succeeded their rivals by implementing a flexible strategic intent approach[17].

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[14] Daniel, Mark H.. "Mastering the Dynamic nature of Modern Strategy." Handbook of Business Strategy vol 7 2006: 39

[15] Savin, Jerald M.. "Information Technology Strategy- Managing the Dark Side." Handbook of Business Strategy vol 5 2004: 293-297

[16] Allmendinger, Glen, Lombreglia Ralph. "Four Strategies for the Age of Smart Services." Harvard Business Review October 2005: 131-145.

[17] Hamel, Gary, Prahalad, C.K.. "Strategic Intent." Harvard Business Review June-August 2005: 148-161.

2.3 Misperceptions about Strategic Planning

In spite of all these prescriptions in literature about strategic management, it is still observed that most of the companies are not satisfied with strategic plans as a management tool. The common reason for failure of strategy implementations is suggested to be the misperception of the whole process. This misperception is explained mainly as a result of misuse of the objectives, i.e. the failure to distinguish between purposes and constraints that result in strategies without a proper direction. Moreover, it is highlighted that whether to set the objectives first or determine them according to a strategy remains unsolved for most of the managers[18]. In addition, theories suggest that the planning process should not be confused with strategy formulation, which is another common misperception of strategic management[19]. Managers who expect that planning will lead to new strategies will face disappointments at the end of the process because they will end up with basic business plans, not strategies that create a difference.

Another common problem is that global firms, which choose new markets to enter use tools like country portfolio or political risk assessment that concentrate on potential risks to enter the business but mainly neglect the infrastructure of the market. Much of those country portfolios use composite indices, which is an aggregation of growth and business competitiveness, governance indicators and corruption perceptions. A recent article from Harvard Business Review reveals the fact that these composite indices may manipulate the reality and categorize countries as similar, which in fact have widely varying infrastructures[20]. Consensus is reached through the argument that companies need local and/ or regional strategies in order to fit their strategies and processes in the widely varying infrastructure of different countries.

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[18] Campbell, Andrew, Alexander, Marcus. "What's Wrong With Strategy." Harvard Business Review November-December 1997: 42-51.

[19] Mintzberg, Henry. "The Fall and Rise of Strategic Planning." Harvard Business Review January-February 1994: 107-114.

[20] Khanna, Tarun, Sinha, Jayant, Palepu, Krishna G.. "Strategies That Fit Emerging Markets." Harvard Business Review June 2005: 63-76.

Overall, it is obvious that there has not been a consensus on methodologies or applications for strategic planning. Approaches may vary across industries and results from this literature review show that each strategy development should be distinct in order to achieve the best solution, or long-term plan. This review also shows that local and regional strategies are essential for globally operating firms in order to stay competitive in the dynamic environment and meet the local needs of their customers. Strategy formulation and planning phases should be defined clearly before adopting an approach and the methods should be chosen to best explain the system and the environment.

CHAPTER 3

RESEARCH AND ANALYSIS FOR STRATEGIC POSITION

In this section, internal and external analyses from the strategic planning literature is used in order to introduce a strategic position. This research and analysis for a strategic position begins with an environmental analysis where the company profile and global and domestic market profiles are defined. Also, the conditions and the structure of the environment are presented in the following sections. Once the environment is defined, scenarios are created in order to define alternative future environments that is later used in evaluating strategic options in Chapter 4. By doing so, the external analysis is completed, and internal analysis begins with defining the resources, competencies and weakness. Internal analysis is essential for understanding the capabilities and weaknesses of the company that would determine the structure of strategy development. Complementing internal and external analyses, the expectations of stakeholders are also given. The stakeholder expectations are important since stakeholders have the power to affect the business and strategy making process. These internal and external analyses provide a direction for strategy development so that proposed strategies are within the context of the environment and the company.

Throughout this dissertation, the main focus of interest is Knauf Group factories in Turkey. Knauf supplies the Turkish market with two gypsum board factories that are located in Ankara and İzmit, and a metal profile manufacturing plant in Istanbul. To begin with, a proper definition of the system, its containing system and the environment under consideration should be made. The system is taken as Knauf Turkey and major focus is the plant in Ankara. The containing system is then all the suppliers of gypsum based construction and insulation materials in Turkey. Finally, the environment can be defined as the construction industry in Turkey.

3.1 Environmental Analysis

Environmental analysis defines global and domestic market structures, key trends, competitive forces in the industry and structure of the environment. It is a crucial step in understanding the system since the environmental factors have both direct and indirect effects on businesses. In his book named "Practical Strategy"[21], Geoff Coyle uses several practical tools to understand the environment. This chapter covers the past and future conditions of the environment with the help of these tools such as Neustadt&May Mini Methods and Field Anomaly Relaxation. Also, the current conditions of the environment are explained through PESTEL, which is a common tool used in strategic planning for defining environmental factors.

Results from this environmental analysis are later used in other sections to generate strategic options. Mainly, this analysis defines the business structure of Knauf and position Knauf Turkey in the global and domestic markets.

3.1.1 Company Profile

Foundation and Expansion

After the Great Depression in 1932, two mining engineers, Dr. Alfons Knauf and Karl Knauf, started a small company called "Gebrüder Knauf, Rheinische Gipsindustrie und Bergwerksunternehmen" (Knauf Brothers, Rhine Gypsum Industry and Mining Company) at Iphofen, Germany. Their main interest was focused on a raw material with special features, which was gypsum. They had the idea of transforming this material in such a way that people can build faster, more flexible and at more reasonable prices. With their approach, the first building materials were produced and construction systems were reinvented.

Soon after, the family company developed into a family of companies first on European level and then world wide, with subsidiaries and holdings going far beyond the original

[21] Coyle, Geoff. Practical Strategy: Structured Tools and Techniques. Harlow: Pearson Education Limited, 2004.

raw material. After 74 years of incorporation, the KNAUF Group is still % 100 family owned. Remarkably, the holding of the group is still a partnership with two unlimited partners who actively run the business, i.e. Baldwin KNAUF and Nikolaus Knauf, the eldest sons of the original founders.

Today, with the help of over 17,000 employees, the KNAUF Group achieves a turnover of more than 3 billion Euros.

The Company Philosophy

"*The Knauf philosophy stems from the model on which the company is based: we are a family company. The family includes our employees and our customers and consumers. Our strength comes from the earth. So ecology and economy are inseparable as far as we are concerned. And we demonstrate this. We act on it. Our focus is on our customers. They are the meaning and purpose of our thoughts and actions. It is us who make the market. We plan innovations to meet tomorrow's requirements. We are the market leaders. This implies an obligation to assume responsibility for the public and the environment. The high quality of our products enhances and creates an atmosphere of well-being for people.*

We are as good as the sum total of our employees. We depend on your skills, efficiency and creativity. We fulfill our future dreams with our profits. The prerequisite for this is successful and contented customers. State of the art production techniques are characteristic of our operations. Our production plants are pleasant to work in, efficient and ensure a conscientious approach to resources and the environment.

We produce modular systems. These simplify planning and construction, offering complete solutions and assured quality."

Business Description

Knauf operates more than 130 production plants in over 30 countries. The main markets are found in northern, western and central Europe as well as the entire Mediterranean area including Spain, Italy, Greece and Turkey.

In addition to plasters and plastering accessories, Knauf manufactures insulating materials made from glass fibers at four sites in the US. A further business field is the production of distended pearlites that are used in plastering, cement bound boards and dry mortars.

Knauf owns two paper factories; Inland in Lilla Edet, Sweden and St Petersburg Polygraphie- und Kartonkombinat in St. Petersburg, Russia, and also holds shares in Tecnokarton located in Mayen.

The range of products for the drywall sector includes plaster fiber boards that are manufactured in factories in Satteldorf, Germany, in Vidin, Bulgaria, in Dzershinsk and Tscheljabinsk both in Russia.

Another business sector is the production of moulded plastics in France, Italy, Spain, England, the Netherlands, Brazil and Poland.

The factories process more than five million tons of stucco and composition floor plaster annually that in turn are burned from 4 million tons of natural gypsum and 2 million tons of synthetic gypsum.

Richter-System, a manufacturer of metal profiles and angle protectors in Europe, is also a member of the Knauf group.

Knauf operates more than 30 furnaces in nine factories, which produce distended pearlites that are used in the production of dry mortar to improve their heat insulation qualities. The product range of Knauf Perlite, one of the processors of pearlites, also include the cement-based Perlconboard, Aquapanel, dry composition floor elements and pearlite charges.

Knauf Bauprodukte offers a range of building chemicals for DIY and professional purposes in Europe. Marmorit in Bollschweil, to the south of Stuttgart, produces and sells an extensive assortment of lime and lime cement plasters.

Knauf Engineering offers an extensive all-round service for the construction of production plants for all types of building materials. The service ranges from geological examinations to tapping the deposits to planning and constructing turn-key factories up to the launch of production at the plants and technical support once production is up and running.

Major Products and Services

Knauf produces and sells building materials. The company's products include:

- Metal profiles and angle protectors
- High quality mineral fiber boards used to form innovative ceiling systems
- Perlite based cement boards
- Machines for the application of plasters
- Building chemicals for DIY (do-it-yourself) and professional users
- Lime and lime cement renders
- Bricks
- Paper
- Gypsum fiber board

The Gypsum Business

Knauf has access to 1.3 billion tons of raw gypsum from approximately 53 quarries and 12 pits in 23 different countries. Each year, more than 5 million tons of raw stone are mined from Knauf's own quarries and pits.

The factories process more than 5 million tons of stucco and composition floor plaster annually that in turn are burned from 4 million tons of natural gypsum and 2 million tons of synthetic gypsum from flue gas desulphurization in power plants.

With a capacity of more that 800 million square meters, Knauf is one of the largest suppliers of gypsum board world wide. It operates in several countries in Europe, Asia, South America, Middle East, Africa and the USA. In addition, Knauf manufactures 3 million square meters of plaster partition walls in Germany, Belgium and Russia.

Top Competitors

The market in which Knauf operates (both gypsum board and gypsum) in Turkey is an oligopoly. There are small numbers of large firms especially in gypsum board market. Recently, new entrants are expected to enter the gypsum powder market, which would increase the competition. Competition in gypsum board market differs from gypsum powder in the sense that investing in gypsum powder production requires less capital than gypsum board production. Hence, in the gypsum board market the firms are similar in their capital structure, meaning that small firms prefer to invest in gypsum powder production plants. As corporate identities of the major firms, ABS and Knauf are family businesses whereas Dalsan Lafarge is only %50 family owned.

Market prices are determined mostly by the price leader. In case of a fall or rise in the prices, competitors observe the leader and adjust their prices accordingly. Since the market analysis of this text is limited to Turkey, only the competition in the Turkish market is emphasized.

The table below illustrates the worldwide and domestic competitors.

Table 1. Domestic and Worldwide Competitors

Worldwide Competitors	**Domestic Competitors**		
	Gypsum Board and Powder Producers	**Gypsum Powder Producers**	**New Entrants**
Building Materials Holding	Dalsan Lafarge	Saint Gobain (BBP)	Durak Doğan
McCarthy Building Companies, Inc.	ABS Alçı	SİAS	Polat İnşaat
Builders Firstsource		Alçıbay	Yoğurtçular
Ace Hardware		Atışkan	Astaş
United States Gypsum Company		Fersan	
Lafarge		Işıklar	

3.1.2 The 2006-2011 World Outlook for Manufacturing Gypsum Wallboard, Plaster, Plasterboard, Molding, Ornamental Moldings, Statuary, Architectural Plaster Work, and Other Gypsum Products

This section summarizes the findings of Prof. Philip M. Parker, which analyzes the demand profile and potential earnings for the worldwide gypsum market[22]. Market potentials are classified according to regions, where it is possible to observe the demand and market share of each country. Also, in Table 2 and Table 3 the worldwide market potential according to regions and overall demand are given. More detailed analyses are provided for Turkey, where not only the demand and market share but also the potential industry earnings for Turkey with respect to cities, the Middle East Region and the globe are given. This analysis is useful in understanding the structure of the gypsum market both domestically and internationally. From here, expansion opportunities and future directions can be extracted since the analyses provide estimates for the years 2006 to 2011. In addition to defining the market structure, indications from this section are also used to identify opportunities in Chapter 4.

The notion of latent demand is used in this study to estimate market potential. Latent demand is commonly defined by economists as the industry earnings of a market when that market becomes accessible and attractive to serve by competing firms. It is a measure, therefore, of *potential* industry earnings (P.I.E.) or total revenues (not profit) if a market is served in an efficient manner. It is typically expressed as the total revenues potentially extracted by firms. The market is defined at a given level in the value chain. There can be latent demand at the retail level, at the wholesale level, the manufacturing level, and the raw materials level. Latent demand can either be lower or higher than actual sales if a market is inefficient (i.e., not representative of relatively competitive levels). Inefficiencies arise from a number of factors, including lack of international openness, cultural barriers to consumption, regulations, and cartel-like behavior on the part of firms. In general, however, latent demand is typically larger than actual sales in a country market.

[22] Parker, Philip M. "The 2006-2011 World Outlook for Mnufacturing Gypsum Wallboard Plaster, Plasterboard, Molding, Ornamental Moldings, Statuary, Architectural Plaster Work, and Other Gypsum Products". INSEAD 2005.

The latent demand for gypsum products is estimated to be $18.1 billion in 2006. The distribution of the world latent demand (or potential industry earnings), however, is not even across regions. Asia is the largest market with $5.8 billion or 32.01 percent, followed by Europe with $4.6 billion or 25.27 percent, and then North America & the Caribbean with $4.6 billion or 25.33 percent of the world market. In essence, if firms target these top three regions, they cover some 82.61 percent of the global latent demand.

The following tables show the market potential and potential earnings worldwide and in Turkey for the years 2001-2011. The market potential tables for major regions are given in Appendix A.

World-Wide Market Potential

Worldwide Market Potential for Manufacturing Gypsum Wallboard, Plaster, Plasterboard, Molding, Ornamental Moldings, Statuary, Architectural Plaster Work, and Other Gypsum Products (million USD): 2006

Table 2. Worldwide Market Potential

Region	Latent Demand (million USD)	% of Globe
Asia	5,799	32.0
North America & the Caribbean	4,588	25.3
Europe	4,577	25.3
Latin America	1,476	8.1
Middle East	736	4.1
Africa	710	3.9
Oceana	227	1.3
Total	**18,115**	**100.0**

World Market for manufacturing gypsum wallboard, plaster, plasterboard, molding, ornamental moldings, statuary, arch.: 2001 – 2011

Table 3. World Market Potential Earnings

Year	World Market (million USD)
2001	18,567.51
2002	18,338.15
2003	18,116.13
2004	17,901.38
2005	17,771.33
2006	18,114.78
2007	18,548.33
2008	18,995.55
2009	19,456.95
2010	19,933.05
2011	20,424.40

Turkey Market Profile

Potential Industry Earnings for Gypsum Building Materials (million USD): Turkey 2001 – 2011

Table 4. Potential Earnings for Turkey 2001-2011

21Year	Turkey	% of Region	% of Globe
2001	204.01	26.26%	1.10%
2002	199.00	26.16%	1.09%
2003	194.12	26.06%	1.07%
2004	189.35	25.96%	1.06%
2005	186.08	25.88%	1.05%
2006	191.17	25.96%	1.06%
2007	197.84	26.06%	1.07%
2008	204.74	26.16%	1.08%
2009	211.88	26.26%	1.09%
2010	219.28	26.35%	1.10%
2011	226.93	26.43%	1.11%

Table 5. Potential Earnings for Major Turkish Cities

City	World Rank	Million USD	%Country	%Region	%World
Istanbul	44	73.45	38.42	9.97	0.41
İzmir	166	22.95	12.01	3.12	0.13
Ankara	169	22.00	11.51	2.99	0.12
Bursa	260	11.36	5.94	1.54	0.06
Adana	279	10.14	5.30	1.38	0.06
Mersin (Icel)	318	8.90	4.65	1.21	0.05
Antalya	325	8.67	4.54	1.18	0.05
Konya	366	7.77	4.07	1.06	0.04
Samsun	557	4.63	2.42	0.63	0.03
Gaziantep	578	4.36	2.28	0.59	0.02
Kayseri	635	3.81	1.99	0.52	0.02
Diyarbakir	647	3.76	1.97	0.51	0.02
Eskisehir	650	3.73	1.95	0.51	0.02
Sanli-Urfa	725	3.01	1.57	0.41	0.02
Malatya	789	2.62	1.37	0.36	0.01
Total		191.17	100.00	25.96	1.06

According to this study, the worldwide market demand for manufacturing gypsum products will face an increasing trend in the following years. In this 18 billion USD market, Asia has the highest level of market potential for manufacturing gypsum products with 5,799 million USD (%32 of the globe), followed by North America and the Caribbean with 4,588 million USD (%25,3 of the globe) in 2006. The market potential of the Middle East in which Knauf Turkey operates is very low compared to that of Asia, US and Europe, which is only 736 million USD representing %4.1 of the global demand.

When it comes to Turkey, the figures show that Turkey is in fact the leading country in the Middle East with a market potential of 191 million USD in 2006, which is almost one quarter of the Middle East total. The global increasing trend can also be observed for the manufacturing of gypsum products in Turkey, where the market forecast reaches over 200 million USD in the following five years. Yet, this market forms only one percent of the global market potential. In contrast, China takes up around %10, Japan %7, Germany %4.5 and US %23 of the global market potential.

In 2006, the demand for gypsum buildings products reached 73 million USD in Istanbul (%0.41 of the world), followed by İzmir and Ankara each with 22 million USD approximately (%0.13 of the world). Istanbul was ranked 44th out of 2000 cities, and Ankara was 169th. As a result, it is possible to claim that Turkey, and especially Istanbul has a significant potential earnings for gypsum products.

Important insights about the environmental analysis can be deduced from this research. One is that, the macro-environment that Knauf operates is a market of 18 billion USD with leading countries such as US, Japan, China and Germany in Europe. Even though the one percent global market potential of Turkey in 2006 seems low at first sight, compared to European countries, the figure is not that low. Also, with Istanbul generating %0.41 of global potential earnings, the domestic industry in which Knauf Turkey operates can be said to have ample opportunities for development.

3.1.3 Turkish Construction and Building Materials Industry Outlook 2005-2008

This section defines the construction industry volume in Turkey and positions Knauf in the industry. Potential earnings of Knauf do not depend on the gypsum market only, which is a derivative of the construction industry. Hence, the industry performance is analyzed in three categories: construction, building construction and civil engineering[23]. Here, the size of the construction market is important for Knauf Turkey. The results from this analysis are used in Chapter 4, where opportunities and threats in the environment are generated regarding the domestic and worldwide market structures.

The following tables show the distribution of construction industry performance, residential construction levels and expected turnover and sales in Turkish construction industry.

Industry Profile

Turkey: Distribution of Construction Industry by Subsectors (million USD): 2000-2005

Table 6. Construction Industry Performance

Year	Total Construction	Building Construction	Civil Engineering
2000	9,503	7,240	2,263
2001	6,359	5,140	1,219
2002	7,210	5,032	2,177
2003	9,221	6,053	3,169
2004	10,785	6,380	4,406
2005	18,267	13,014	5,253

[23] Datamonitor. Global Homebuilding Industry Profile. June 2006. September 2006. <www.datamonitor.com>

Residential Construction in Turkey (Thousand units)

Table 7. Residential Construction in Turkey

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Res. Construction	245,2	243,5	161,5	162,9	160,4	240,3	280	330	400
Previous Year=100	113,7	99,3	66,3	100,9	98,5	149,8	116,7	117,8	121,2

The construction industry in Turkey has an important triggering effect for the economy and produces %4 to %5 of the GDP. In 2005, the contribution of the construction industry was approximately 18 million USD, which is %5.3 of the GDP.

Following the increasing global trend, an expansion in Turkish construction industry is expected. Forecast values of residential construction indicate a %100 increase. Moreover, the distribution of construction industry shows that building construction has increased significantly over the years. Both indicators signal a valuable market potential for Knauf in Turkish construction industry. An increase in residential construction is an important insight, since it increases gypsum board demand significantly.

Turnover and Sales

Estimated Local Turnover (Million USD): 2006

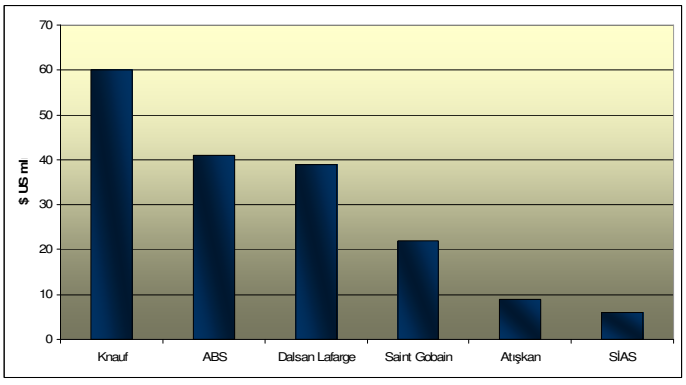

Figure 2. Estimated Local Turnover

Estimated Gypsum Board Sales (m²): 2006

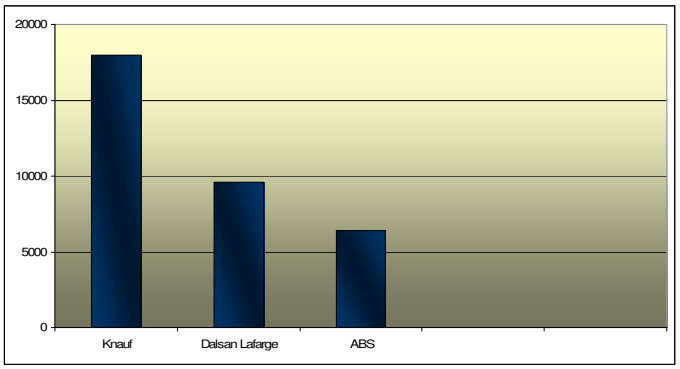

Figure 3. Estimated Gypsum Board Sales

Estimated Powder Gypsum Sales (tons): 2006

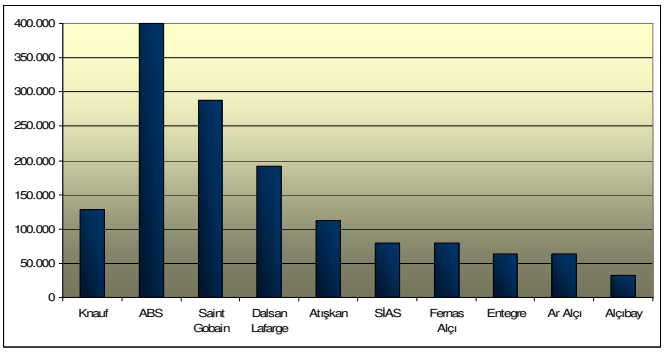

Figure 4. Estimated Powder Gypsum Sales

The figures reveal that Knauf has the highest estimated local turnover (60 million USD) and gypsum board sales (17000 m²) among its rivals. The closest competitors are Dalsan Lafarge and ABS, who will be competing with Knauf in the 197 million USD market in 2007. Despite the fact that Knauf has the leading position in gypsum board sales, it lags behind in gypsum powder sales. Hence, Knauf has a leadership position in drywall systems market as an aggregation. In order to be a gypsum powder producer, not much of capital is required compared to gypsum board production. Therefore, competition is fierce in this industry with several small-scale competitors. The reasons behind this are discussed in more detail in Section 3.3 where the weaknesses of Knauf are identified.

3.1.4 Layers of the Business Environment

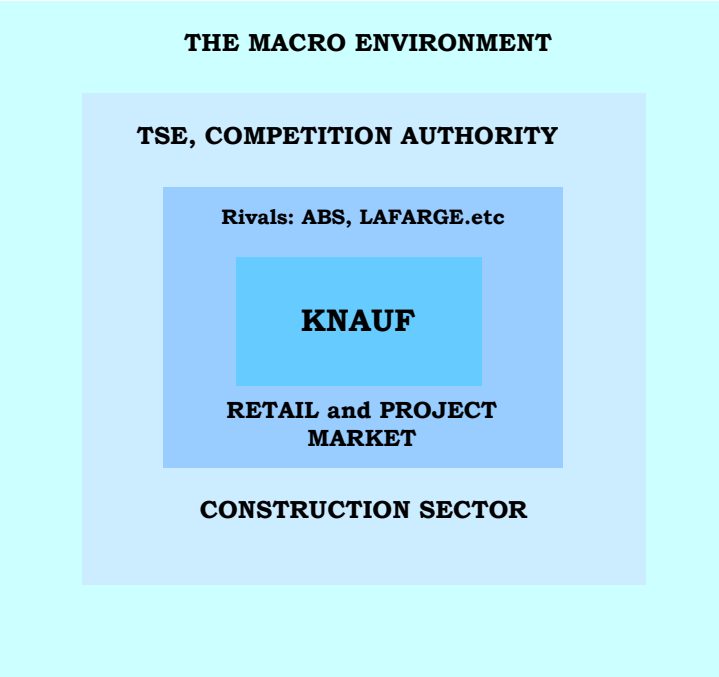

Figure 5. Layers of the Environment

- *The organization:* KNAUF Turkey
- *Markets:* Retail market (small quantity consumption mainly by households or shopkeepers) and project market (prestige building, i.e. hotels, airports, malls, etc. construction)
- *Strategic group:* ABS, Lafarge, etc (Gypsum board producing competitors)
- *Sector:* Construction
- *Organizational fields:* TSE, Competition Authority, Ministry of Finance, etc

The layers of the business environment clearly illustrate the competitors of Knauf, the markets it operates in, and the organizational fields, which are networks of related organizations that share common assumptions, values and ways of doing things. It is a basic illustration of the Turkish market in which Knauf operates and it also provides a framework of the market, which is required in further discussions of the environmental analysis.

There are two types of markets, one is a small quantity consumption market referred to as the retail market where households or shopkeepers demand Knauf products for renovation such as gypsum board, gypsum board profiles and accessories and gypsum powder**.** In the project market, Knauf undertakes projects for hotels, shopping malls, airports…etc. construction and provide service for contractors, project owners and architects. ABS, Dalsan Lafarge and other competitors is the strategic group because they have common strategies in the same market and industry with Knauf. A strategic group can be alliances or competitors, which in this case are mainly competitors. The sector in which this strategic group and Knauf operate is the construction sector. It is spanned by the macro environment, which can be explained by all the political, social, economical and technological issues.

In the following section, the past, current and prospective features of the environment are discussed. From the past features of the environment, it is possible to understand the present functions of the business and also the reasons behind current strategies and decisions. Furthermore, it shows the trajectory path of change in business structure for Knauf Turkey. The present features reveal the structure of the environment and may be crucial for short term strategies in identifying threats, trend changes or developments. Finally, the prospective features of the environment help the decision makers to anticipate potential external changes so that they have enough time to consider and plan for them accordingly. Altogether, the following section provides important indicators, variables and also insights for strategic option generation in Section 4.2.

3.1.5 Past Features of the Environment

The notion that history can illuminate options and decisions is useful in conducting an environmental analysis. The historical analysis enables a clearer understanding of the system structure. We choose to employ tools that are developed by Neustadt and May in this section because they provide a structured analysis. Basically, the past features reveal changes that occurred in the past 15 years for the company and explain how it reached its current position. It also provides information about the environmental conditions that the company evolved in, which are later used in scenario generation in Section 3.2 and strategic option generation in Section 4.2.

The past information on Knauf is presented through the help of three tools developed by Neustadt and May. Namely, they are time lines; placing organizations and the K/U/P mini method. These methods mainly analyze a concern that has arisen and the purpose is to find steps in order to set objectives and sorting out the issues related with past interferences. In their own words:

"…developing proposals for the future, taking account of the constraints of the present as inheritances from the past"[24]

These three tools are used simultaneously in Table 8, which provides a framework for the organization's past, indicating the most outstanding activities and factors.

Time Lines

The first method from Neustadt and May is building time lines. It is useful to understand the position of the business relevant to the past. It is also possible to set future objectives on the time line so that the background and planning can be observed simultaneously. The time line is divided into phases by a significant event in history. Here, the time line consists of two phases: phase one is from foundation of Biltepe Alçıpan in 1989 to 1999, and phase two is from 1999 to 2006 where the

[24] Coyle, Geoff. Practical Strategy: Structured Tools and Techniques. (Harlow: Pearson Education Limited, 2004) 201

significant event that divides this time line is the German takeover of the company in 1999.

Placing Organizations

Neustadt and May suggest that the best way to get a full picture of an organization is to find out how its present objectives, resources and personnel connect to the past. That way, the actions and decisions of the organization can be better placed in the environment. Thus, the second tool is placing organizations, which questions the changes that have occurred. For Knauf, three concepts; the objectives; competition and resources are used in order to understand the changes that occurred in the past. It is possible to use other topics for this tool but we chose these since they are major concepts that can explain a business structure. Integrated with the two phases of the time line, this tool helps to understand how the business structure of Knauf has changed over the years.

The K/U/P Mini Method

The final tool from Neustadt and May is used to sort the important facts out. Some facts are known, some are uncertain and some are assumed to happen for a situation. Neustadt and May suggest that these three aspects cover a wide range of factors to understand the environmental structure in the past. Mainly, the known facts, uncertainty elements and presumptions method identifies the reason why certain actions needed to be taken at the time. In Table 8, this method is combined with the time line indicating the known facts, uncertainty elements and assumptions during the phases. Here, the known facts reveal the condition of the environment that the company management was aware of. The uncertainty elements include the unknown facts about the environment, and finally the assumptions show the anticipations, expectations or presumed facts.

Following a combined approach of the methods presented above, the time line divides the analysis into two phases and for each phase the methods of placing organizations and K/U/P are implemented. Thereby the conditions of the environment in the past are examined through a business structure point of view and some important facts of the environment are sorted out.

Table 8. Phase 1 and Phase 2 Analysis

	Phase 1 (1989-1999)	**Phase 2 (1999-2006)**
Objective	**1.** Increase gypsum board consumption in Turkey up to the level of production capacity **2.** Marketing of gypsum board in Turkish construction market	**1.** Product diversification through product development and trades from other Knauf companies **2.** Vertical integration and development
Competition	ABS, Dalsan	ABS, Dalsan Lafarge, Saint Gobain, Durak Doğan, other small-scale producers
Resources	*Financial:* Company turnover, no additional funds from the shareholders	*Personnel:* High skill (language, academic background) *Financial:* Credits through Knauf being the guarantor
Known Facts	**1.** Competition does not exist in gypsum board production **2.** Investment in powder gypsum is necessary **3.** Stagnant levels of consumption in Turkish construction industry	**1.** Diminishing sales due to economic crises **2.** Price decrease due to increasing competition
Uncertainty Elements	Partnership and logistic strategies of the competitors	**1.** Recovery of the construction sector after the crises **2.** Sustainability of competitive edge in Turkish construction market
Assumptions	**1.** Loss of monopolistic power **2.** High inflation	**1.** Consumption falls behind production capacities **2.** High inflation

Phase 1

Phase 1 can be considered as the growth state of business. During this phase, Biltepe Alçıpan faced seasonal demand increases, which could not be met all the time. In order to overcome this problem, the 15 meters per minute production level was increased to 30 m/min by additional machinery. This expansion brought along another problem, i.e. excess supply at times when seasonal demand pattern was not observed. Therefore, Biltepe Alçıpan's main objectives were to perform effective marketing and sell the amount of gypsum boards they had produced.

The main competitors were ABS and Dalsan. ABS was the leader in gypsum powder, but they were not producing gypsum boards, thus at the time it was known that Biltepe was the only player in gypsum board market. However, Biltepe Alçıpan also knew that they had to invest in gypsum powder industry in order to be competitive. Yet, the company had to make investments using its own turnover, no additional capital was provided by the shareholders. Another important known fact of the time was the stagnant levels of consumption in Turkish industry due to economic instability in 1994 and also the different structure of construction industry in Turkey compared to US. In US, the construction industry consumption levels were very high relatively since the houses were built mainly using gypsum boards, which was not common in Turkey at the time.

The main uncertainty elements of this period were the partnership and logistic strategies of the competitors. Since Biltepe Alçıpan was a new entrant in the business, there were no insights or information available about competitors' actions. On the other and, there were the assumptions such as loss of monopolistic power when ABS enters gypsum board market and also there was the assumption that high inflation levels would prevail. The loss of monopolistic power meant a fall in prices, whereas high inflation was perceived as a potential market expander because at times of high inflation Turkish consumers tend to buy real estate, forming an excess demand and a forecast of 300-400 thousand units of residential construction per year.

Phase 2

Phase 2 is when the company reaches maturity. During this phase, Biltepe Alçıpan was acquired by Knauf, which brought organizational and structural changes in the company. During this phase competition intensified with the entrance of additional global firms such as Lafarge and Saint Gobain, as well as domestic firms such as Durak Doğan and several other small-scale businesses. One of the organizational changes was observed in personnel employment, where high-skilled employers were preferred. Another change was the construction of another production facility in İzmit, which would change the logistic strategy and production plan of the main facility. Along with the organizational changes, the objectives of the company had also changed during this phase. The main objective was to implement Knauf's vertically integrated

production system with product diversification. In doing so, the company aimed at lowering costs and becoming more competitive.

It was obvious that increasing competition would force the prices downwards and that the two economic crises of the period would result in a decrease in consumption. Yet, it was unclear how and when the economy would recover from crises and also whether Knauf will be able to sustain its competitive edge in a market with increasing competition. High inflation was still an expectation at the beginning of this phase, but towards the end, it was not realized. Also, it was assumed that the consumption levels would fall behind production because ABS having a 15 million m^2 capacity and Lafarge and Knauf having 45 million m^2 of gypsum board, the demand was only 42 million m^2.

This analysis about the past features of the environment shows that Knauf has reached today from a market where it was the only producer with limited financial resources. The German takeover changed the business structure significantly, providing resources and market leadership focused objectives. The environment has also changed over the years. The impacts of economic crises can be observed from the factors of K/U/P method in Table 8. The effects of crises created an uncertain environment for the construction sector, which made Knauf assume lower demand levels. Another event was that, Knauf lost its monopolistic power during phase two due to increasing competition. The three methods used in this section provide a detailed framework of the historical facts in the environment, which is a source of insight for developing actions and arguments.

3.1.6 Current Features of the Environment

It is important to understand the current characteristics of the environment since the decisions are taken according to current economic, political, social and technological conditions. The PESTEL framework categorizes the environmental influences into six main types: political, economical, social, technological, environmental and legal. In general, this tool is used mainly to look at the future impacts of environmental factors and generate scenarios. In the following section, topics from PESTEL are used to generate scenarios together with Field Anomaly Relaxation, and determine threats and opportunities for analyses in Chapter 4. In this section PESTEL is used to understand environmental dynamics.

The PESTEL Framework

Figure 6. The PESTEL Framework

The PESTEL framework here is used to define the current environmental factors**:** the current and potential influences from political pressures; the impact of local, national and world economy; the ways in which changes in society affect the organization; the effect of new and emerging technology; local, national and world environmental issues; and the effect of legislation in Turkey.

As shown on page 17, the financial crises of 2001 and 2002 had negative impacts on the industry performance. Therefore, it is important to have economic stability in Turkey in order have continuous and even more optimistically, increasing sales. Together with economic stability, it is also important to have regime stability since the consumption patterns under a stable regime are known to be less volatile due to an

environment of confidence. Additionally, the corporate taxes or subsidies in Turkey and in neighboring countries are important. The higher the corporate taxes in Turkey relative to neighbor countries, the less investment will be made in the construction sector. Similarly, the political relations between Germany and Turkey is also an important factor for investment decisions as well as customer preferences.

When it comes to the economic variables, most of the common micro economic indicators are crucial for Knauf Turkey. For instance, in order to benefit from exports the Turkish Lira should not be overvalued, thus the exchange rate is crucial. Moreover, the wage rates and electricity and water prices are crucial for costs. Finally, demand seasonality, interest rates, if applicable mortgage rates and inflation rates are crucial to follow customer demand and investment decisions.

Socially, the variables that affect social well-being are considered since gypsum plaster boards are perceived to be used for construction plans that exceed a certain monetary limit. Social well-being is affected mainly by income distribution, population rate and levels of education. If the society reaches a certain level of social welfare, it will demand more complex construction techniques and will search for the best solution. Despite the fact that social well being might have a positive effect, changes in the lifestyle of the society may have positive or negative effects depending on the direction of change.

If a substitute is found for gypsum, there would be a severe threat to the market existence of gypsum and gypsum related products. Similarly, new developments in technology could also be used to enhance the features of gypsum and gypsum products. Not only Knauf but also the competitors could perform this enhancement, thus it can either be an opportunity or a threat for Knauf Turkey.

There are four key inputs for gypsum board production, i.e. water, energy, gypsum rock and paper. There is a certain environmental factor for each of these inputs. First, Knauf Turkey should have access to mining license in order to maintain its raw material supply. Second, the supply of energy, paper and water depend on conditions of the environment. It is known that global warming may bring along drought, which would diminish both the supply of paper and water. Similarly, high energy consumption levels threaten of oil supplies, thus it is the environmental conditions that would determine the levels of supply for these inputs.

Legally, the employment law may have an influence on hiring and firing decisions and it may also result in increasing costs if the firing decisions are limited. Furthermore, product safety and worker injuries are among the issues that may have to solved legally. In case of a worker injury or a product safety problem, Knauf Turkey may loose credit and confidence among its customers. Another legal aspect is the rules and regulations forced by the Competition Authority. Knauf Turkey may have to adjust its business or even investment decisions in order to prevent possible penalties.

This framework enables us to perceive where Knauf Turkey stands now and understand the current concerns in the environment. In this thesis, rather than using PESTEL the scenario generation is based on Field Anomaly Relaxation as explained in the following section, and PESTEL variables are used to define threats and opportunities in Chapter 4.

Apart from the broad characteristics of the environment, it is also vital to understand the distinctions and similarities between Knauf Turkey and Knauf in general. Although Knauf Turkey is highly integrated with Knauf Germany, it diverges in certain actions and decisions. The following tool is used to distinguish between similar and distinctive features of Knauf Turkey and Knauf Germany, which would identify the system in its containing system and highlight its own features.

The L/D Mini Method

Neustadt and May's likenesses/differences method helps to eliminate invalid analogies and find better ones[25]. Adapted to environmental analysis, it enables the organization to differentiate between its features and external environment, and set objectives accordingly. The functions of Knauf differ from Knauf Germany due to environmental differences. Hence, we choose this tool in order to understand the adaptation of international business functions in Turkey, and point out cultural and geographical differences between Knauf Germany and Knauf Turkey. In doing so, we use marketing strategies, target customer profile, facility locations, logistics, employee and profiles, competition profile and sales structure categories for comparison, which explain most of the business features for both companies.

[25] Coyle, Geoff. Practical Strategy: Structured Tools and Techniques. (Harlow: Pearson Education Limited, 2004) 202

Table 9. Likenesses/Differences Method

	Knauf Turkey	Knauf Germany
Marketing Strategies	150 dealers of which 100 are active, 50 are passive	20 active dealers, over a thousand passive dealers
	Consumers value esthetics more than technical capabilities	Technical capabilities are more important than esthetics
	Dealers are encouraged by a reward system	N/A
	200 hardcopies of technical sketches and brochures	Technical sketch and design software available for customers
	Single education center	Four education centers across Germany
Target Customer Profile	Dealers and consumers who use gypsum and gypsum products in their construction projects such as architects, contractors or households	
Facility Locations	Ankara plant close to the mine, İzmit plant close to the demand satisfaction point	Gypsum board plants close to demand satisfaction points, gypsum plants close to mines
Logistics	For deliveries less than 500 km by trucks, otherwise by train	A combination of trucks and train
Employee Profile	Not enough specialized technicians employed	Several technicians specialized in different areas
Employer Profile	Engineers aim positions at management	Engineers are employed in their own areas
	Practical knowledge is not sufficient	Sufficient practical knowledge
Competition Profile	Oligopoly, demand determines price	
Sales	"Ex-works" sales	"Delivered" sales
	Long payment terms	Short payment terms

The likenesses and differences of Knauf Turkey and Knauf Germany are presented in the above table. Overall, Knauf Turkey significantly differs from Knauf Germany due to cultural and technological differences. Yet, there are several common points such as the target customer profile, i.e. dealers, and the consumers that use gypsum and gypsum products in their construction projects such as architects, contractors or households. In addition, facility locations are close to demand satisfaction points for gypsum board plants and mines for gypsum powder plants (in order to minimize

delivery costs) in both countries and the competition profile is oligopoly (small number of large firms in the market) where price is determined by demand.

About marketing strategies, cultural differences are notable in education, consumer values and dealer rewards and structure. In Turkey, consumers are not as interested in technical capabilities of products as in Germany and also active dealers are less with no dealer encouragement. (Active dealers have greater sales volume and commercial activities, thus they require more capital than passive dealers) In Germany, few of those active dealers hold much of the market activity (in terms of capital and volume); however in Turkey more active dealers share the market volume in order to reduce the capital requirement. Contrary to four education centers in Germany, there is only one center in Turkey, indicating another cultural difference. Technologically, Knauf Germany provides technical sketch and design software whereas Knauf Turkey uses limited amounts of hardcopies. All of these show that in site of inevitable cultural differences, Knauf Turkey does not have a sound marketing strategy structure like Knauf Germany.

Technology and infra-structure differences can be observed notably in logistics. Germany has a complex railway system, thus Knauf Germany mainly uses trains and also trucks for delivery. However, in Turkey the railway system is only used for long distance deliveries. This depends both on cost and railway configuration issues.

An important difference comes from the education system, which directly effects employee and employer profile. Contrary to Turkish system, there are more academy graduates in Germany who fill the gap of specialized technicians. Moreover, in most of the western countries engineers are employed in their own areas and do not aim for positions at management, as it is in Germany. The final point is that the education system has a higher quality in Germany than in Turkey, therefore both the employers and employees have a better understanding of practical skills.

Sales strategies also converge between two companies since the dynamics of the economy and customer expectations are not the same. Depending on the economy and risk diversification, Knauf Germany prefers to implement short payment terms but in Turkey, with unstable economic conditions, high rates of inflation and interest rates, the payment terms are kept longer. Also, in Turkey in order to avoid additional delivery

costs, dealers send their own trucks and buy the products from the open stock area, i.e. ex-work sales; however in Germany, products are delivered to the dealers.

What is apparent from this analysis is that cultural, economical and technological differences play an important role in the way that a business functions. At this point, it is important to understand that although Knauf Turkey is a German firm, it adapts Turkish norms and business functions in order to be successful in the Turkish market. Otherwise, all the differences pointed out above would hinder the activities of the firm and weaken its competitive advantages.

This analysis is most useful in determining strategic options for Knauf in Chapter 4 since it defines the limitations of the company in terms of business activities, culture and market structure.

3.1.7 Prospective Features of the Environment

In the past and current feature analyses the key environmental influences are indicated and environmental conditions are defined. The prospective features analysis tries to develop possible outcomes based on those. These outcomes, namely scenarios, are used in strategic planning in order to overcome uncertainties. Considering that all of the environmental content may result in inaccurate and unrealistic scenarios, this analysis is conducted in line with factors determined from PESTEL and past feature analysis of the environment.

In his book named Practical Strategy, Geoff Coyle introduces what he callsField Anomaly Relaxation (FAR). It is used to generate story scenarios for the future that are logical structures within social fields governing possible future positions[26]. Instead of topics in PESTEL there are fields in FAR, which are basically the factors that may influence the environment and the organization in the future. Each component of a field must have various conceivable conditions on the future so that a set of consistent futures for the decision makers can be provided. As indicated above, the field topics

[26] Coyle, Geoff. Practical Strategy: Structured Tools and Techniques. (Harlow: Pearson Education Limited, 2004) 64

are a broad definition of all the possible points that have been highlighted in the previous analyses.

Using FAR, it is possible to visualize different scenarios in the future, which in this text forms the basis of the scenario analysis. Although, the more common approach to generating scenarios is to make use of a PESTEL analysis, we choose to use FAR, PESTEL and the previous environmental analysis in order to enrich the factors and enable forming various combinations for the scenarios.

In conducting FAR, first the most outstanding topics for the future are defined. Then each of those components is further expanded into possible outcomes. These possible outcomes are also arranged from the most likely to less likely, or from an optimistic to pessimistic view. In this analysis, the elements of the field topics are arranged from the most optimistic view to the most pessimistic view in Table 10. For instance, the long-term economic potential begins with strong growth and ends with a crisis. Similarly, family business issues begins with a better performance of the future owners (the Knauf family members who will manage the company once the elder management retires) and ends with a handover of the company. One advantage of FAR is that it can be used as a mind map where each different combination of elements are analyzed. This provides a wider understanding of the future and also helps to eliminate inappropriate combinations. As long as the field topics, which are in fact variables in the future, are close to being accurate, the analysis promises to generate logical and likely scenarios for the future.

The main field topics in Table 10 are competitiveness of Knauf in the gypsum market, long-term economic potential, family business issues, raw material and energy resources and industry profile. These topics cover factors that have been revealed in the PESTEL analysis and some features from the past environmental analysis. Mainly, the political and economical factors in PESTEL depend on (and are a result of) the long term economic conditions in Turkey, thus the long term economic conditions field cover the political and economical aspects covered in PESTEL. Similarly, raw material and energy resources topic covers the environmental issues, and industry profile covers some of the sociocultural factors. FAR also supplements the coverage of the past environmental analysis, thus the family business issues and competition topics relate to some of the important features there. It is not possible to match all the related

issues from PESTEL and past environmental analysis to FAR, but it is important to include the significant variables from the past and the present in order to generate scenarios.

Table 10. Field Anomaly Relaxation

Competitiveness of Knauf in the Gypsum Market C	**Long-term Economic Potential E**	**Family Business Issues F**	**Raw Material and Energy Resources R**	**Industry Profile I**
C_1 Highly competitive against competitors ABS and Dalsan Lafarge only	E_1 Strong growth with potential to trigger residential construction	F_1 Future owners may perform better than the previous ones	R_1 Easy access, fair price; worldwide stable energy market	I_1 Quantity based market leadership in drywall systems market
C_2 Highly competitive with ABS, Dalsan Lafarge, Saint Gobain and small-scale producers	E_2 Strong growth	F_2 Future owners may perform worse than the previous ones	R_2 Obligation to use substitute energy resources due to increasing prices	I_2 Loss of quantity based market leadership in drywall systems market
C_3 Moderately competitive	E_3 Steady growth	F_3 Power imbalance between future owners	R_3 Rapid consumption of raw material due to unexpected demand and production	I_3 Changing consumption patterns replace gypsum board with alternatives
C_4 Severe competition from rivals	E_4 No growth	F_4 Conflict between future owners, resulting in company disintegration		I_4 Alternative innovations might replace gypsum board with alternatives
C_5 Loss of competitive edge	E_5 Crisis	F_5 Loss of interest by future owners, resulting in hand over of the company		

3.1.8 Scenario Analysis

A scenario is a detailed view of how the environment of an organization might develop in the future. It is based on key factors about which there is a high level of uncertainty. In strategic planning, scenarios are generated in order to unravel uncertainty for the future where for each scenario a different strategy is developed[27]. In this thesis, scenarios are also formed in order to unravel uncertainties and have a future impression of the environment when developing strategies. As mentioned earlier, the common approach of generating strategies uses the PESTEL factors. In this text, FAR variables in Table 10 summarize PESTEL and past environmental analysis factors. Therefore, the FAR analysis is used to generate scenarios. FAR is used to form different combinations of the field topics, and hence form various scenarios. Although it is possible to generate numerous scenarios from the FAR columns, it is important to choose the scenarios that are likely to occur in a logical framework. In this sense, three types of scenarios are generated: optimistic, moderate and worst-case, which define major changes and possible outcomes in the environment.

In the optimistic scenario, competition prevails with the addition of small scale producers; there is strong growth in the economy; future owners perform well; resources are accessible and market position is premium. With the exception of experiencing all these positive variables at the same time, this scenario enables Knauf to foresee a positive future.

In the moderate scenario, competitiveness is moderate; economic growth is steady; future owners do not perform well; substitute energy resources are used and the quantity based market leadership is not sustained. Taking into contemporary conditions of the environment and the economy, this scenario is most likely to occur among the others. China is expected to become a competitor in the market due to the low labor costs and their ability to build very low cost gypsum board factories, and also the newly entering small scale producers may increase competition. Furthermore, the future owners of Knauf are expected to perform worse since in family businesses each

[27] Johnson, Gary, Scholes Kevan, et al. Exploring Corporate Strategy. (Harlow: Pearson Education Limited, 2002) 107

time management passes on to a new generation there is an adaptation period, which may not have positive effects on the organization. Finally, regarding the environmental conditions it may be the case that substitute energy resources are used. All these variables would prevent gypsum board business to expand as in the previous case, thus the market position would not be premium.

The final scenario is a worst-case scenario where there is severe competition; a crisis in the economy, future owners perform worse, raw material resources become scarce and gypsum board begins to lose its market. This scenario takes all the variables to their extreme negative positions. Yet, the variable about family business remains the same because a power imbalance, conflict or loss of interest are not likely to occur among the future owners.

The parentheses after each scenario topic include the FAR variables that are chosen from Table 10. A more detailed discussion of this analysis is given in Chapter 4.

The scenarios are as follows:

Optimistic Scenario (C_2 + E_2 + F_1 + R_1 + I_1)

- Highly competitive with ABS, Dalsan Lafarge, Saint Gobain and small scale producers
- Strong growth in economy
- Future owners perform better than previous ones
- Easy access and fair prices for resources, worldwide stable energy market
- Quantity based market leadership in drywall systems market

Moderate Scenario (C_3 + E_3 + F_2 + R_2 + I_2)

- Moderately competitive
- Steady growth in economy
- Future owners perform worse than previous ones
- Obligation to use substitute energy resources due to increasing prices
- Loss of quantity based market leadership in drywall systems market

Worst-Case Scenario ($C_4 + E_5 + F_2 + R_3 + I_4$)

- Severe competition
- Economic crisis
- Future owners perform worse than previous ones
- Rapid consumption of raw materials due to unexpected demand and production
- Alternative innovations might replace gypsum board with alternatives in the market

3.2 Capability Analysis

In the previous section the external environment of Knauf Turkey was outlined in order to understand the influences it may have on the strategy development process. Similarly, this process can be influenced by the internal environment of Knauf, which can be defined through a capability analysis. Strategic capability reflects how the organization can compete in the environment and adjust its strategies as the environment changes. There are two main concepts widely used in for strategic capability: fit and stretch. The concept of strategic fit refers to how suitable the existing strategies are, when the environmental conditions are considered, whereas the concept stretch refers to exploiting the existing resources and competencies in order to capture the developments and trends in the environment, i.e. to create "fit". These two concepts foster innovation in an organization since they result in continuous development, learning and creativity and thus the degree of strategic capability will provide the firm the necessary skills to not only survive, but prosper in the environment.

Strategic capability is also defined as providing the product or services that the customers value; therefore the common approach to capability analysis identifies the resources, capabilities and core competencies of an organization in order to understand what the organization has different than others in creating value for its customers. In this section, a similar approach is followed where the resources, core competencies and weaknesses of Knauf Turkey are identified. Main resources; threshold resources and unique resources are identified in order to understand the capability of the organization in terms of its resources. Then, the core competencies and weaknesses (activities that improve competitive advantage) are identified using a

value network model. This value network model is in fact a broad perspective for the value chain, which describes the activities within and around an organization that together create a product or service[28]. The main goal of this section is to determine the capabilities and weaknesses of Knauf Turkey that are later used to guide the strategy development process.

For most industries, there exists certain product features that are valued by the customers and thus the company must develop those features in order to stay competitive in the market. (Johnson 151) However, for gypsum board producing companies there are no such product features, since both the production process and the end product are fairly standard. All the different types of gypsum boards can be produced by all companies, and the chemical technology used is well known and available to all. Thus, there are only insignificant differences among the production techniques and end products, which prevent the identification of critical success factors for this industry. For instance, among all gypsum board producing companies, the unit weight of the boards differ only 200 grams in one square meter (a standard gypsum board is measured to have 3 square meter surface and weighs approximately 27 kg). Also, perhaps the most that the companies can do about the design of the board is to print the company name on different places of the board, i.e. Dalsan Lafarge prints on the sides, ABS on the middle…etc. The same is also true for gypsum production. Although forming gypsum plaster has several techniques and chemicals used to differ among applications and consistency, the product chemistry is the same for all producers.

These features of the industry prevent producers from differentiating among their products and production techniques, therefore most producers look for other ways to improve their strategic capabilities. Knauf Turkey also uses other techniques rather than production to preserve its strategic capability and in the following sections, the strategic capability of Knauf Turkey from resources, competences and competitive advantages are discussed.

[28] Johnson, Gary, Scholes Kevan, et al. Exploring Corporate Strategy. (Harlow: Pearson Education Limited, 2002) 160

3.2.1 Resources

The major resources for gypsum board production are water, energy, paper and gypsum. Water should be bacteria free with a ph value around 7; electrical energy is used for production and thermal energy from coal or natural gas is used for drying the gypsum boards. Gypsum as the raw material is found in nature in the form of crystals. It can also be granular or compact, and the color may vary from white to gray or pinkish red. Apart from the natural gypsum, it is also possible to use artificial gypsum through flue gas desulphurization. This process scrubs the sulfur emissions from fossil fuel burning power stations; however since the reactions are unsanitary this method does not have wide spread applications. About the paper used in gypsum board production, each type of gypsum board (fire resistant, water resistant…etc) uses different types of specialized paper with specific ventilation, wet swelling and tensile strength values.

In order to create competencies an organization must have certain resources on hand, which are the available resources. The most common available resources for this industry are water and gypsum. In Turkey, the gypsum mines have reserves that would satisfy demand for more than 50 years. Until recently, the water supply was also known to satisfy the hourly demand of 10 tons, but global warming issues may threaten water availability.

Threshold resources basically guarantee the organization to stay in business. For Knauf Turkey to stay in business gypsum, paper and human resources are required. At this point, gypsum is actually both an available resource and it is also a threshold resource at times of short supply. The gypsum board paper is crucial to stay in business since it determines the type of gypsum board and creates the difference among several gypsum board brands. The paper is usually outsourced, therefore it can not be considered as an available resource. The final threshold resource is the employee network of the organization. Since the product features and most resources are common, it is vital to have a strong human resource in order to trigger sales, adapt useful marketing strategies and form strong ties with dealers and customers to create an edge in the market.

Finally, unique resources of an organization create competitive advantage and are difficult to imitate. However, for the gypsum board production industry, the fact that the production process is a very standardized one results in the use of common resources, thus it is not possible to identify unique resources for this industry.

3.2.2 Competencies

A competency is defined to be the ability to exploit resources. In general, it reveals the difference of organizational performance and sustains the ability to satisfy various types of customer demand. There exists an extensive literature on competencies of an organization. Most commonly, a core competence is defined to be an internal capability that a firm performs better than its rivals.

In order to define the core competencies, the production routine and the value chain are analyzed. The production routine for a gypsum board includes several stages, of team work. In this sense, the production routine of Knauf Turkey can be considered as an internal capability, where the resources of water, gypsum, energy and paper are transformed into gypsum board and gypsum products.

Production Routine and Stages

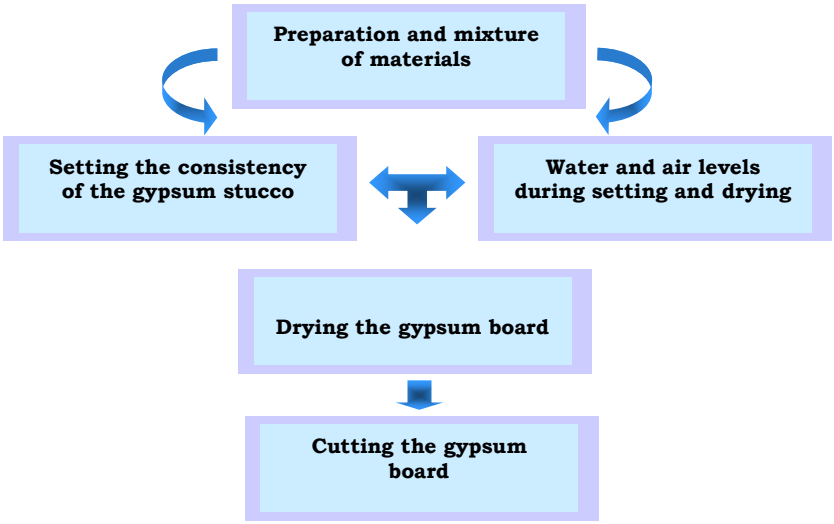

Figure 7. Production Routine

The complete cycle of this routine requires a feedback system between the stations where each station sends process details (quality of the product, maintenance…etc) to the next. Here, the core competence is formed during the transitions of stages where each station is regarded as a customer by its follower. Through this philosophy, quality is sustained during production because each station puts its best effort in the process, and also the feedback system makes it easier to control the production routine. More details about this production detail and process flow are discussed further in value network analysis.

Value Network

Together with the core competencies above, it is also possible to identify competencies by the use of a value chain. The value chain describes the activities within and around an organization, which create a value at each step. The creation of value is restricted by the core competencies of the firm. Hence, firms should fully integrate the resources to use core competencies and deliver a product that fully satisfies the needs at a competitive price, which means creating superior value for the customer.

Michael Porter identified primary and support activities for the value chain model, each of which can be found common among most firms.

The primary activities of the value chain aim to create value that would exceed the cost of the activities, i.e. activities that result in a profit margin. These activities are:

- *Inbound Logistics:* the receiving, warehousing and inventory control of raw materials.
- *Operations:* the value creating activities that transform the inputs into the final product or service.
- *Outbound Logistics:* the activities required to get the finished product to the customer, including warehousing or order fulfillment for tangible products and arrangements for services.
- *Marketing and Sales:* the identification of customer needs and the generation of sales.
- *Service:* the activities that enhance or maintain the value of a product or a service after the sale is generated.

The support activities are not directly involved in production; however they help to improve the effectiveness or efficiency of primary activities. These activities are:

- *Procurement:* the purchasing of raw materials and other inputs used in the value creating activities.
- *Technology Development:* the key technologies related to the product or the production process used to support the value chain activities.
- *Human Resource Management:* the activities associated with recruiting, managing, training, developing and rewarding people within the organization.
- *Infrastructure:* structures and routines of the organization as well as the supporting functions such as finance, planning, quality control and general senior management.

The broader picture of a value chain is reflected through the value system, or the value network, where a set of inter-organizational social and technical resources and links work together via relationships to create value. In such a network, there are two types of value: intangible and tangible. Tangible value includes the value created from exchange of goods, services or revenue, i.e. all transactions including contracts, invoices, confirmations and payment. On the other hand, intangible value can be generated through knowledge or benefits. Knowledge refers to the exchange of strategic information, planning or process knowledge, know-how…etc. Benefits can be considered as the favors that are offered from on person to another, for instance emotional or political support.

In analyzing this value network the dimensions of scope, depth and competitive environment are used[29]. The scope of a value network defines the range that is analyzed. In this case, the range is from raw materials (water, paper, chemicals, and gypsum rock) to the end customer (dealers). Also, the depth of analysis is at a transactional level, in which the most important and explicit activities are pointed out. How the business relates to its competitive environment and creates value is addressed at each classification. Hence the output of this analysis provides a broader understanding of the system and its relations with its competitive environment.

[29] Wilson, David T., Kothandaraman, Prabakar. "Value Creating Networks." Industrial Marketing Management vol 30 2001: 385

The value network model is based on the supply chain model of Knauf Turkey where buyers and sellers, departments, actors, resources and formal and informal relationships are defined. In this value network, the activity structure of the value chain mentioned previously is complemented by the relationships and links defined in a network. Along with the essential contractual transactions, the critical intangible exchanges are also mapped in order to understand the knowledge transfers. The main goal of this value system is to present the supply chain model of Knauf Turkey and address value generating activities and competencies. It is also used to define weaknesses and strengths in Section 4.2.

The value generating activities cannot be generated explicitly through the value network. These activities are defined and determined during the process of mapping the network relationships and flows. Thus, the value generating activities are identified with the help of Knauf personnel. The network map provides a visual guide in understanding these activities and also it helps to see blocked or insufficient flow relations.

It should be noted that the value network is classified according to primary activities and that the related support activities are shown as flows in each classification.

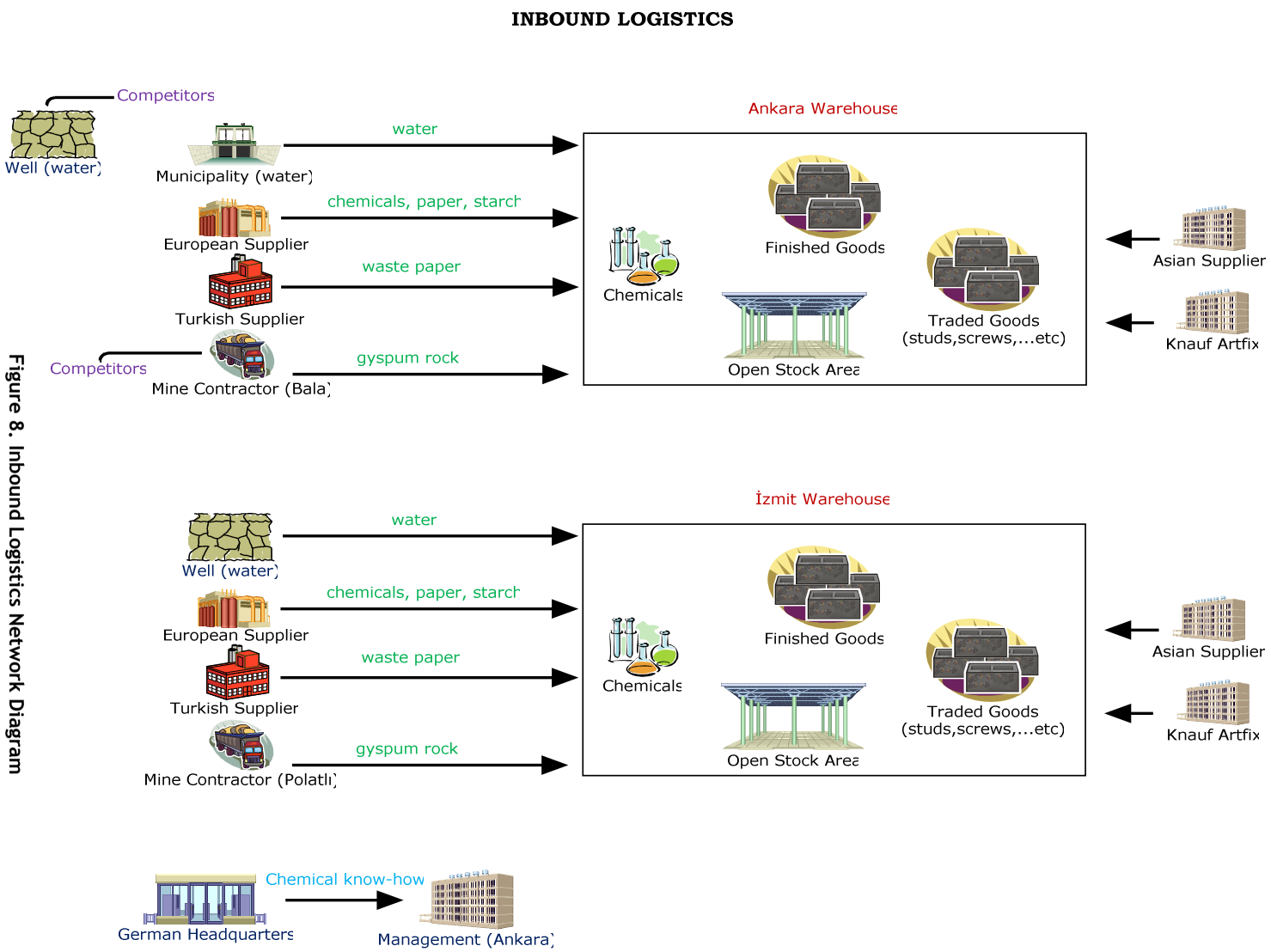

Figure 8. Inbound Logistics Network Diagram

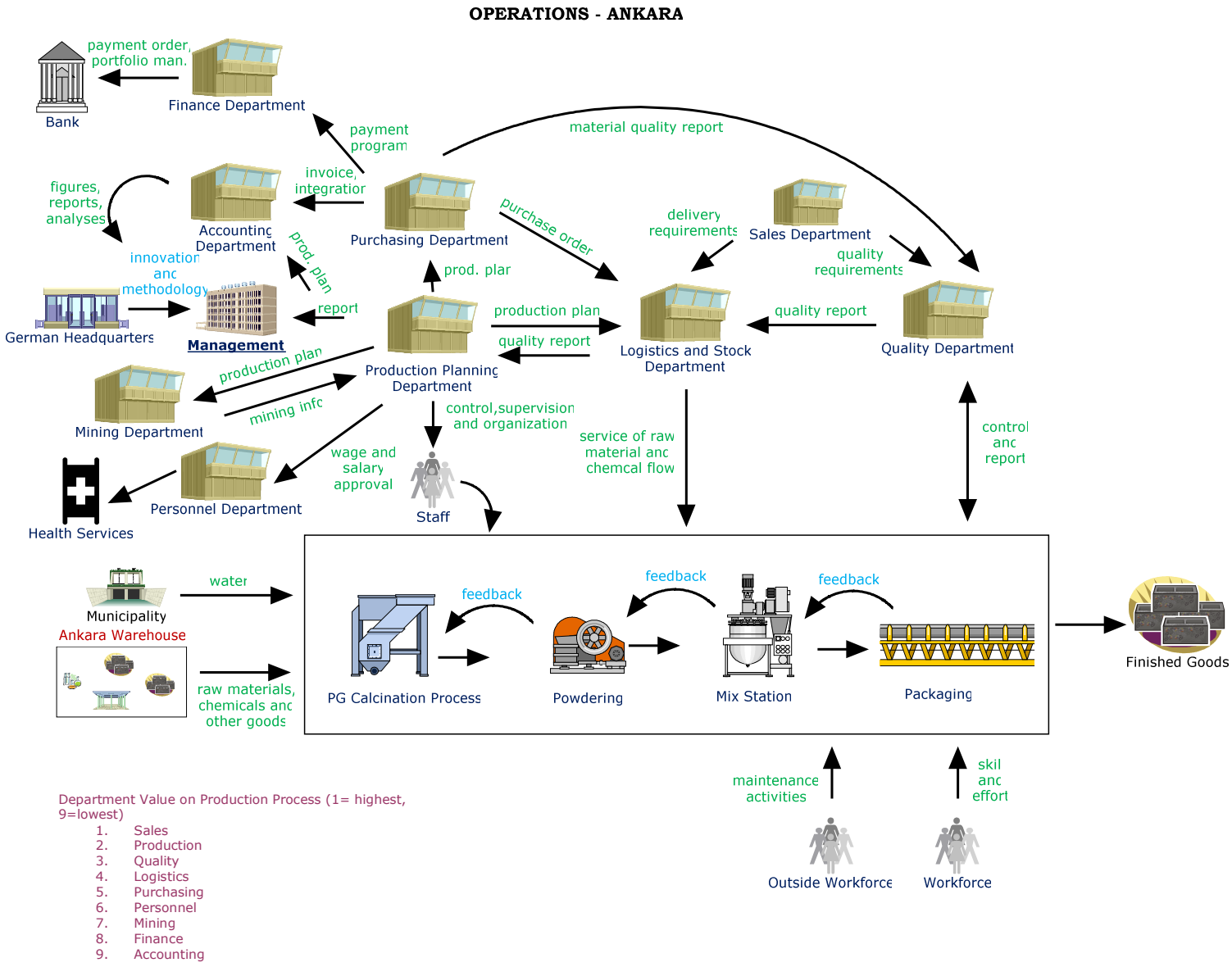

Figure 9. Ankara Operations Network Diagram

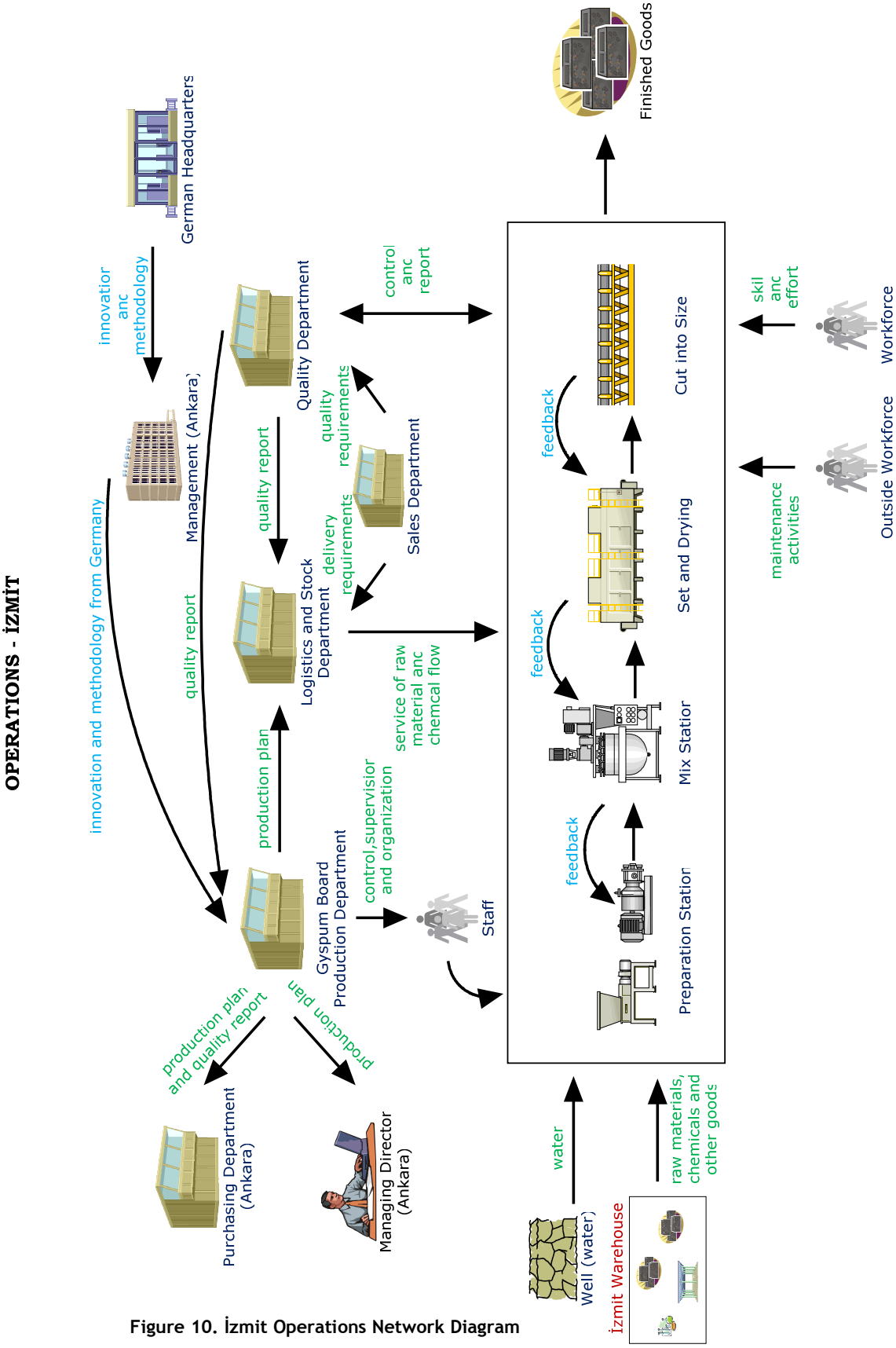

Figure 10. İzmit Operations Network Diagram

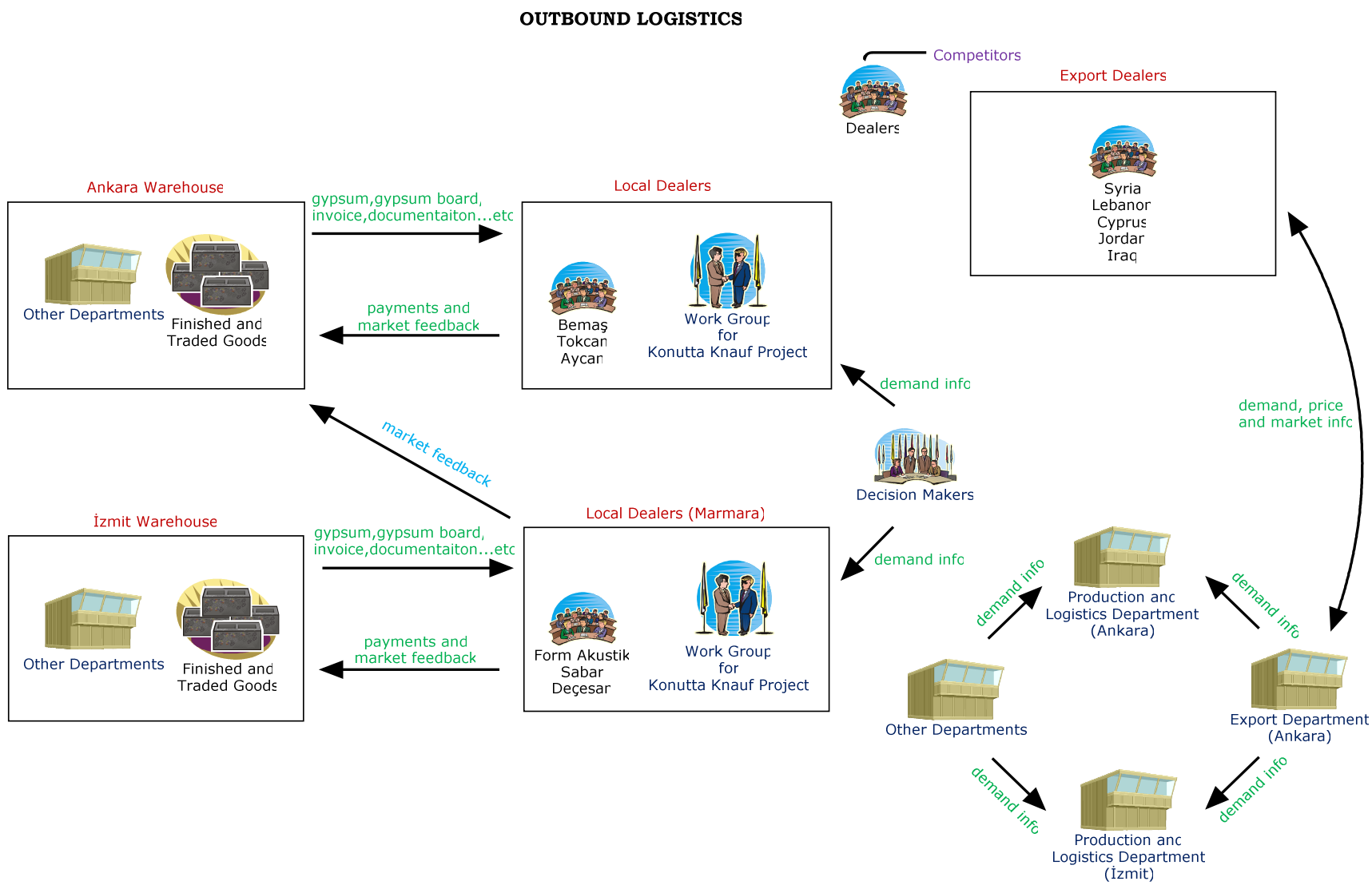

Figure 11. Outbound Logistics Network Diagram

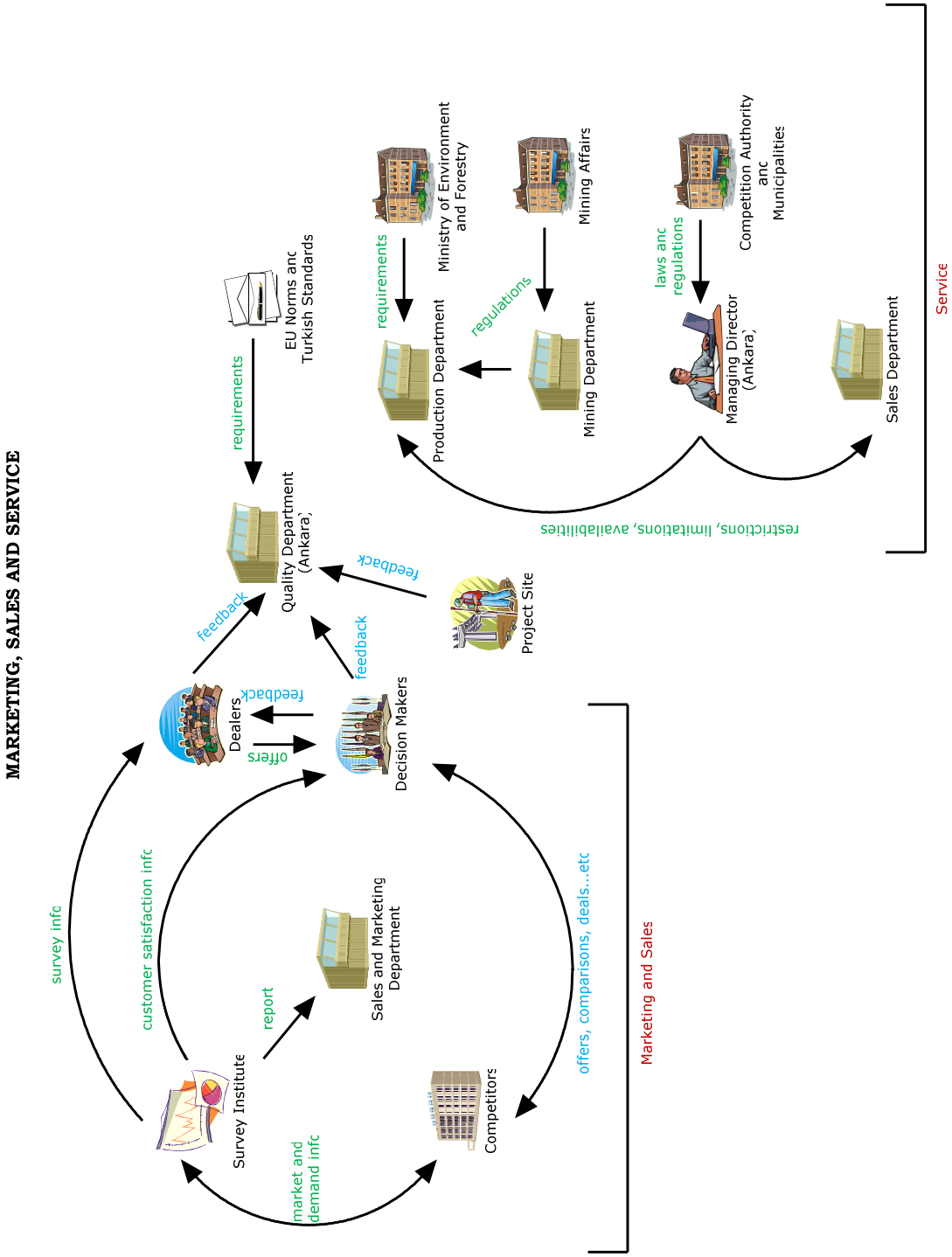

Figure 12. Marketing, Sales and Service Network Diagram

Inbound Logistics: Knauf Turkey uses water, paper, gypsum rock and certain chemicals for gypsum board production. In Ankara and İzmit, water is directly added to the process; however the chemicals and paper are stored in the warehouse. The warehouse also contains an open stock area that is used to store gypsum rock. Once the production process is completed, goods are stored in the finished goods area. Other materials imported from Asia or acquired from Knauf Artfix such as studs, tape bands, screws…etc are stored in the traded goods area. In Ankara, competitors prefer to use wells for water but all competitors use the same European paper supplier for their gypsum board production. At this stage, the most important suppliers are indicated as paper since it adds value by its best quality, and gypsum rock being the raw material. Throughout this Knauf creates value by using knowledge and experience of its logistics department employees. The employees in this department have understood the availabilities and limits of the logistics companies as well as seasonal differences, which enable them to get the lowest possible delivery cost with full delivery guarantee and quality. The chemical know-how coming from Germany also creates value and it is diffused into related departments by the management.

Operations (Ankara and İzmit): The production process in İzmit shows gypsum board production that is composed of four stages, i.e. preparation, mix, set and dry and cut. In Operations Ankara, the production process of gypsum powder is shown that is also composed of four stages, i.e. calcination, powdering, mix and packaging. All these stations are connected to one another and there is a continuous feedback flow between the stations. The process stations are directly related to quality, logistics and production departments. Quality department is responsible from quality check and reporting to other departments; logistics provides service of raw material and chemical flow and production department controls and plans the whole process. In Operations-Ankara, the importance of departments on production process is indicated. Sales, production and quality departments are the most crucial among others since they directly control the process. The flows in the diagram indicate which type of reporting or information is exchanged among the departments and staff. The main interface for these formal flows is paperwork, which indicates that Knauf has not diffused computer software technology into its communication network. The diagram is insufficient in showing the inefficiencies resulting from this interface structure, however it is possible to claim that paperwork flows would require extra time, energy and resource, which

can be considered as an important weakness in this value system. Innovation and methodology is transferred from German headquarters and is diffused into the organization through the management. About education, new comers receive in-house education and then they are employed for a training period. The operations stage in both Ankara and İzmit share the same value creating activities, which are German know-how, qualified personnel in quality and logistics departments and the feedback system during production. The German know-how that diffuses into the organization from the headquarters in Germany distinguishes Knauf from its competitors and enables the company to use latest production technology and chemicals. The qualified and experienced personnel in logistics and quality department control the quality of production and service of raw material and chemical flow, which are important for customer satisfaction and warehouse utilization. Finally, the feedback system during production continuously sends and receives feedback among production stages and keeps the process in control.

Outbound Logistics: From Ankara and İzmit warehouses the finished goods are sold to the dealers. There are mainly two types of dealers: local dealers and export dealers. Knauf Turkey shares less than 20 of its dealers with its competitors, meaning that those dealers sell both Knauf and competitors' products. The dealers form a work group for "Konutta Knauf" project but they also have informal links with each other in the form of visits, information sharing or socializing. If informal flows surpass formal flows, the network structure may be damaged due to an unstructured relationship development, thus the dealership network can be treated as a weakness of this stage. The production and logistics departments of both facilities and the dealers are fed with demand information through sales and export department and decision makers (contractors, architects, project owners, civil engineers and households) respectively. For both the dealers and Knauf, demand information is critical in planning the business and production (for Knauf only). In this stage, Knauf exports its product in countries where Knauf facilities do not exist such as Syria, Jordan, Iraq, Cyprus and Lebanon and hence tries to create value through brand name and market development. Although the World Outlook research reveals that these countries are not among the most profitable countries (with respect to market share and potential), Knauf has to export to these countries due to the geographical limitations.

Marketing, Sales and Service: The sales and marketing department receives reports from the survey institute in order to understand the structure and trends in the market. These reports are also sent to the dealers, and market information is also provided to the decision makers. These flows show that market information is constantly exchanged among the players in the market, which ideally should help Knauf to understand the market and form relevant strategies. In this market, Knauf produces complementary products for gypsum board in order to enhance the value created by the gypsum board production. This strategy helps Knauf to diffuse into the market and operate and be known in different areas. Moreover, Knauf dealers send and receive feedback to and from the quality department, which helps Knauf to adjust the quality of the products or services and the dealers to achieve higher sales.

The following section discusses the weaknesses that are identified in Knauf Turkey. These weaknesses were identified with the help of the management, and also the value network.

3.2.3 Weaknesses

The internal capabilities of an organization may have significant impacts on strategic development. Similarly, understanding the limitations and weaknesses of an organization helps to identify leakages and areas that need more attention. By doing so, it would be possible to obtain important insights about how the flow of business or production can better be managed. In order to achieve overall performance improvement, it is important to understand the source of those weaknesses before proposing a strategy development scheme.

Although Knauf Turkey has several competencies discussed above in the value network, it certainly has weaknesses. These weaknesses were identified in meetings with Knauf personnel and management, and also from the position of Knauf in the market. From the meetings with Knauf personnel while the value network was formed, the weaknesses in production and economies of scale were revealed. Also, Knauf management informed us that they have problems with their dealer structure. Finally, looking at marketing activities of Knauf's competitors, it is evident that the marketing and also advertising policies of Knauf are not competitive in the market. As a result, four main weaknesses are identified: dealer structure, production, economies of scale and marketing. The outcome of this section is used in strategic option generation, where Knauf Turkey is evaluated through its internal strengths and weaknesses.

Dealer Structure

To begin with, the dealer structure of Knauf Turkey has certain limitations since it is the most recent compared to main competitors. Before Knauf Turkey entered the gypsum market, ABS and Dalsan had already begun producing gypsum. They formed their dealership relations back then, which now enables them to have a homogenous dealer network. Entering the market at the end of 1990s with gypsum board, Knauf Turkey could only locate its dealers in urban areas, where gypsum board consumption is higher compared to rural areas. This is considered as a weakness because Knauf Turkey could not cover various parts of Turkey with its dealers as its competitors did.

Production

When the gypsum board was introduced in Turkish market, gypsum producing companies modified their facilities to add machinery and floor space for gypsum board production. They also added the gypsum board on the product scale of the dealers. This latter integration of the gypsum board also took in place for Knauf Turkey; however since Knauf is a German company, the gypsum and gypsum board production structure of the company is not very appropriate for the Turkish market. In Germany, the gypsum production facilities are separate from the gypsum board producing facilities. Similarly, the dealers either sell gypsum products or gypsum boards. In Turkey however, the facilities produce and dealers sell both of these products. The production structure of Knauf in Turkey does not give much emphasis to gypsum products, therefore most of the time the dealers are short in supply of gypsum products. At these times, they buy gypsum from small scale producers or from the large scale competitors of Knauf. As a result, this inappropriate production structure results in loss of sales and trust for Knauf Turkey.

Economies of Scale

Complementary to the weakness discussion above, Knauf Turkey also has problems with gypsum production capacity. Large competitors have 400-500,000 tons of gypsum production capacity, whereas Knauf Turkey has only 200,000 tons of gypsum production capacity. This results in high fixed costs and low productivity. Furthermore, gypsum production does not require as much capital and technological background as gypsum board production. As a result, there is a weakness against small scale gypsum producers. These small scale producers use the advantage of using the reputation of large scale firms to strengthen their position in the market. They do not have future investment plans, nor do they have costly logistic systems or advertising costs. Knauf Turkey on the other hand, has higher costs compared to these small scale businesses that affect its competitive position negatively in the market. At the present, there are not many new entrants in the market, but if the number of small scale entrants increase rapidly in the future, this fact could be a serious weakness and loss of competitive edge for Knauf Turkey.

Marketing/Advertising

The main marketing strategy of Knauf Turkey is to inform the people who will use their products. More specifically, the company has a database containing the addresses of contractors, architects and engineers that is updated during seminars, visits and fairs. Every three months, several magazines, gifts or books are sent to the 15,000 members of this database in order to inform them about the new products and projects. With this marketing strategy, Knauf Turkey believes that it reaches its target customers; however it cannot reach the households, which are also an important part of the target customer profile. The public is much more familiar with Dalsan Lafarge due to their successful advertising campaign as a construction company. This concept may not seem like a weakness at first, but if the residential construction demand forecast in Table 7 is realized, it could become a significant weakness. Equally important is the behavior of the end customer, who are more familiar with ABS in gypsum powder products, which is also another weakness of Knauf about marketing.

3.4 Stakeholder Expectations

Stakeholders are the groups of individuals that depend on the organization to fulfill their goals and in return, on whom the organization also depends. They may have the power to influence the strategies of an organization; therefore it is important to extract their expectations and determine the influences they create. Stakeholders can also be external as well, such as suppliers, customers or financial institutions[30].

At Knauf, the most important stakeholders are the Knauf family members who actively participate in management. Now that the third generation of Knauf family will be active, transfer of management is expected to occur without negative effects on company growth. In order to ensure this, third generation Knauf family members are employed at regional management positions. Knauf Turkey also has a regional director,

[30] Johnson, Gary, Scholes Kevan, et al. Exploring Corporate Strategy. (Harlow: Pearson Education Limited, 2002) 206

a member of the board of directors, who is expected to learn the industry and the business environment for her future career at Knauf.

Major expectations of existing stakeholders (Knauf family members who lead the company) are determined from meetings with Knauf management since the meetings and discussions with the family members reveal their expectations to the management. They are as follows: helping the industry to grow by investments and managing the companies in line with environmental regulations and legal issues; differentiating from competitors (differentiating gypsum board features) and adopting the company to changes in global environment. In doing so, they aim at using their own capital (credits from financial institutions are at minimum level) in order to minimize financial risks. The expectations of the prospective stakeholders (third generation Knauf family members) do not conflict with these. Complementing their approach, the prospective stakeholders expect to form a family of companies in Knauf where solutions are used uniformly among the companies. For instance, Knauf has recently been using a common reporting system, an insurance policy, and Systems, Applications and Products in Data Processing software (SAP). The main target here is not standardization but implementing optimal solutions to company's problems. The only drawback for this is that it would not be beneficial for all countries due to high levels of investment costs.

About the external stakeholders, the customers of Knauf Turkey (dealers) who are among the top 20 out of 150 sell %80 of Knauf products. This high percentage gives those dealers the power to influence Knauf strategies, hence customer satisfaction is very crucial at this point as well as dealer management.

Here it is obvious that there are no gaps between the expectations of the stakeholders and Knauf Turkey management. In addition, since the interests of internal stakeholders do not conflict among themselves, Knauf Turkey will be supported by the guidance of its stakeholders at corporate level.

CHAPTER 4

STRATEGY DEVELOPMENT

The previous chapter outlines the external and internal environmental conditions of Knauf. Basically, from the analyses Knauf's position in the worldwide and domestic market and its capabilities are derived. Now that a strategic position for Knauf can be identified, the next step is to perform strategy development. There are several approaches to strategy development as explained in the literature. Common ones classify strategies from a point of view, such as idea, design or experience[31] or from process of strategy development such as intended, realized or emergent[32]. It is possible to populate these approaches; however the important thing is to choose an approach that can best explain the system, its containing system and the environment. For Knauf, the common approaches such as the ones mentioned above are not suitable. One reason to that is the robustness of the company (it can not implement strategies independent of Knauf Germany) and the robustness of the gypsum products (product features are standard for all producers). Therefore, strategy development at Knauf requires a methodology specifically designed for the company. In this chapter, we attempt to develop such a methodology for strategy development, which is more like a planning process.

First, the current position of Knauf is defined using the results from the analyses in Chapter 3. This current position defines the mission and objectives; functional and operational configuration of the company; its corporate relations and corporate culture. Then, using tools from strategic planning literature, strategic options are generated for Knauf. These options mainly address strengthening Knauf's weaknesses and also avoiding threats. In fact, these options are a group of alternative actions that Knauf could take in order to be more competitive in the market. Not all of the strategic options will be beneficial for Knauf considering the uncertainty in the environment; hence an

[31] Johnson, Gary, Scholes Kevan, et al. Exploring Corporate Strategy. (Harlow: Pearson Education Limited, 2002) 37

[32] Johnson, Gary, Scholes Kevan, et al. Exploring Corporate Strategy. Harlow: Pearson Education Limited, 2002) 73

evaluation is essential. The evaluation method uses the scenarios from the previous chapter as frameworks (together with a behavior for each scenario), and the company objectives under each scenario as evaluation criteria. Thus, each strategic option is evaluated based on its ability to fulfill the company objectives under a given scenario and behavior. When the evaluation is completed, a set of options for each scenario is found, which create a different position for Knauf Turkey in the future. These positions are then discussed with Knauf management and a final position is decided upon their preference.

4.1 Strategic Position Index

Strategic position index is introduced to distinguish between various positions, current or future, for Knauf. It includes four categories of variables (mission and objectives; functional and operational configuration; corporate ties and corporate culture) each of which have several topics summarized in Table 11. The variables in this index are sufficient to define the company dynamics completely creating a reference point for Knauf, which is basically where Knauf is today. It also contains elements of the business that can be changed in case a new strategy is implemented. Later on, the index is used to define the alternative positions when a certain set of strategic options are implemented.

There are four basic variables in this index: mission and objectives, functional and operational configuration, corporate ties and corporate culture. The first variable defines Knauf Turkey's mission, vision, long term plans and objectives. Mainly, it configures a framework of the business, its perceptions, plans and goals. The second variable is a detailed one where from resources to financial indicators the dynamics of Knauf Turkey is pointed out. Here, the main processes, functions and values that form the business structure are highlighted. Following the functional and operational configuration, the third variable defines Knauf's relationship structure with its customers, which are defined as the dealers. Along with dealership structure and management, customer satisfaction indicators are given in order to evaluate and position this relationship structure. The final variable is about the corporate culture and philosophy of Knauf, i.e. the attitudes, beliefs, experiences and values.

Table 11. Strategic Position Index

POSITION INDEX CATEGORY	CONTENT	DEFINITION
Mission and Objectives	**Mission**	The purpose of existence of Knauf Turkey
	Vision	Where Knauf Turkey wants to be in the future
	Long-term Plans	Business plans for the long-term
	Objectives	Aims and goals of the company
Functional and Operational Configuration	**Resources**	Major resources for gypsum board production
	Facility Locations	Locations of Knauf factories in Turkey
	Product Range	Products that Knauf import and produce
	Marketing	Marketing activities of Knauf Turkey
	Quality Standards	Implemented quality standards
	Services	Services provided by Knauf Turkey
	Physical Operations	Operations of gypsum board production and production technology
	Financial Operations	Indicators from sales, inventory, earnings and receivables
	Industry and Market Position	Position of Knauf Turkey in construction industry and gypsum board market
	Competitive Advantage	Value creating activities
Corporate Ties	**Customers**	Dealership structure and management of Knauf Turkey
	Customer Satisfaction	Indicators for customer satisfaction
Corporate Culture	**Organizational Culture**	Attitudes, experiences, beliefs and values of Knauf Turkey
	Company Philosophy	Worldwide Knauf company philosophy

Together as a whole, this position index covers most of the variables that are necessary to define the system. Hence, it is something like a "state vector" that will change according to alternative scenarios and strategic options. However, since such an index would be too detailed and not easy to work with, a compact version is used in order to define alternative positions in Section 4.3.

Mission and Objectives

Mission: Contributing to social health and life assurance by producing high and international quality drywall systems.

Vision: To be the quantity based market share leader that produces contemporary construction materials in Turkish drywall market, and in doing so keeping customer satisfaction as the primary concern.

Long-term Plans: **1.** Achieve the best logistic structure across Turkey by investments located in a diagonal route passing from İzmit, Ankara and Adana.

2. Invest in complementary products that are insulation materials such as glass and rock wool.

Objectives:

1. Customer satisfaction for all products and services

2. Profit maximization

3. Market leadership and growth

4. Production with minimum costs

5. Innovation and creativity at all levels of production, services and corporate culture.

Functional and Operational Configuration

Resources: The major resources for gypsum board production are water, energy, paper and gypsum.

Facility Locations: There are two factories of Knauf in Turkey. The main facility is in Ankara, where gypsum plasters and gypsum board productions are made, and the other facility is in İzmit where gypsum plasters, gypsum board and cement based plasters are produced. Also, Knauf produces steel studs for constructing gypsum board walls and ceilings in a joint venture named Knauf Artfix.

Product Range: Knauf Turkey produces:

1. Gypsum powder products such as gypsum plasters, molding gypsum, joint filler and repair plasters,

2. Gypsum board products with different specifications such as normal, water resistant, fire resistant, water and fire resistant, ceiling tiles (laminated and punched),
3. Cement based products such as outside renders, repairing renders, tile adhesives and colored tile joint fillers,
4. Steel studs and accessories, which are mainly the essential products for constructing drywalls and ceilings.

Knauf Turkey imports:

1. Rock wool ceiling tiles,
2. Specific non-gypsum boards such as fireboard and cement board,
3. Gypsum plaster spraying and conveying machines,
4. Screws, which are used in fixing the gypsum boards to the studs and tape bands to fill the joints of the gypsum boards.

Marketing: The marketing personnel include a marketing director, assistant director, marketing supervisors, technical consultants, product managers, regional managers, project and education supervisors. This personnel performs marketing activities in Knauf Ankara headquarters as well as in regions. Sales and technical consultancy are provided from Ankara, and the regional groups include regional managers, project and education supervisors.

Among the marketing activities are dealer meetings, fairs and exhibitions, project contest in universities' civil engineering and architecture departments, outdoor advertisements and indoor posters. Dealer meeting are done once a year where new projects and products are introduced. Also, the dealers who could exceed their sales quotas are taken to fairs and exhibitions abroad. Apart from dealers, Knauf also tries to create brand name recognition by outdoor advertisement such as signboard ads, car ads and totems.

There are two major concepts about Knauf Turkey marketing strategy. The first is education and the other one is familiarity. About education:

1. Knauf Turkey cooperates with MEB and arranges courses for technical high schools;
2. Gives seminars and education programs to architects, internal designers and civil engineers at universities

3. Gives a three day course for consumers, contractors, architects, internal designers and civil engineers about products and their application.

About familiarity, Knauf uses its "Hayat Tır"* to travel the cities in Turkey in order to market Knauf and its products in local fairs and programs. Also, the company uses conventional marketing tools such as advertising in civil engineering and other related magazines, newspapers or bulletins.

Quality Standards: Knauf Turkey implements European Norms and ISO 9000 standards. Turkish standards (TS) are no longer implemented since they are modified according to European Norms during the adaptation process to European Union.

Services: Knauf provides after sales service of picking up the defected item and replacing it with another product (if necessary) as long as the complaint is relevant. Also, the call center provides consultation within 24 hours. If the inquiry can not be consulted domestically, international assistance is provided. Furthermore, Knauf Turkey informs and updates the 17,000 members of its database about Knauf products and drywall systems periodically, minimum four times a year.

Physical Operations: *Operations*- Knauf has two facilities in Turkey, one in Ankara and the other in İzmit. Major operations in both facilities is production of gypsum plaster, gypsum board, insulation materials, steel studs, cement based plasters and accessories. Production of gypsum board and gypsum plaster differ from each other significantly since gypsum board production is a continuous process while gypsum plaster production is a batch process. However, in both the processes main raw material is gypsum rock if natural or desulphurization gypsum obtained from coal operated power plants.

Production Technology- Gypsum board production technology is mainly based on removing the water molecules from the gypsum rock compound using heat energy, then powdering the yield and finally adding water to form the gypsum board. With this exothermic reaction, only the physical shape of the natural gypsum rock is converted into a panel form, named gypsum board. Gypsum plaster production follows the same pattern mentioned above, only water is added on the building site by the applicator.

Financial Operations: The data in this section is indexed relative to 2004 levels due to disclosure policies of the company, thus real values could not be obtained. Although real values can not be observed, it is possible to see the growth and changes in the variables. Not all the data is available for the years 2000 to 2006 because Knauf Turkey has recently adopted the financial benchmarking reporting system from Germany.

More specifically, the data includes indicators from sales, inventory, earnings and receivables. As indicators of sales, number of orders and number of receipts per year are given. From number of orders the number of trucks used to deliver sold products can be estimated, since each order is transported by one truck. The number of receipts on the other hand, reveals the actual sales data (one order may include several products). Inventory levels are given by total inventory and finished goods inventory, earnings before interest, tax and depreciation (EBITDA), EBITDA per employee and net sales amounts are given for revenues. Beginning from working capital related to sales, some of the financial benchmark ratios are provided, however these data are available only for the past three years.

Working capital related to sales is basically the difference between current assets and current liabilities. It is necessary to understand the ability of the business to repay its short term obligations however it is not sufficient without knowing how this capital is being utilized. Indicators of risk and operating characteristics are given as average outstanding receivables and days of outstanding receivables, which may in fact vary from industry to industry but in general the smaller the accounts receivable period, the more effectively a company is managing and collecting money from its customers.

There are several points to be highlighted from this data. To begin with, the impact of 2001 twin crises can be observed as a sales decrease where the number of receipts (in fact, sales) fall, and also EBITDA and EBITDA per employee decrease significantly. During this period, net sales is kept high by increasing the sales price, thus on the whole the company managed to survive from the crises. The following recovery year still shows some impacts from the crises, i.e. EBITDA could not reach its 2001 value although the average sales price is almost doubled and number of receipts increased significantly.

For the years 2003 to 2006 the company seems to perform well in the market regarding the ratios that are given. In 2005, the final credit payment is done; therefore expenses diminished which as a result more than doubled EBITDA value despite the moderate increase in average sales price and net sales. Furthermore, the number of orders per year decreased in 2006 despite an increase in sales, which means that less frequent but greater amounts of orders have been made indicating that the dealership structure has improved. Another thing is that, even though the average outstanding receivables increase, the days of outstanding receivables has decreased in 2006 showing that Knauf can manage to collect its receivables more efficiently and hence reduces its risk potential.

Inventory versus Sales Growth

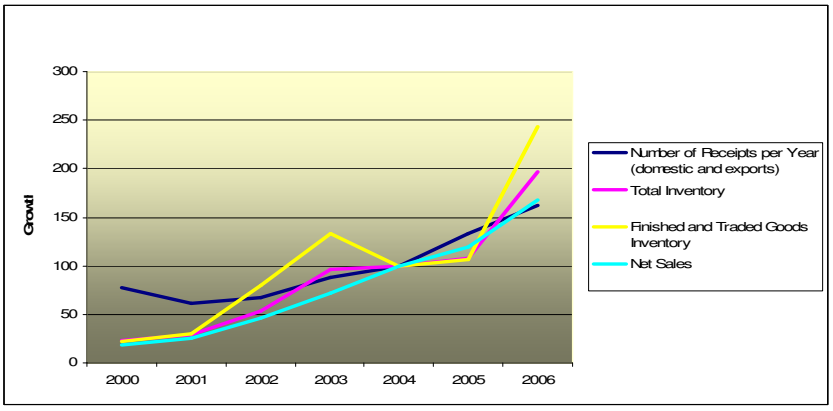

Figure 13. Inventory versus Sales Growth

Change in Earnings Before Interest, Tax and Depreciation

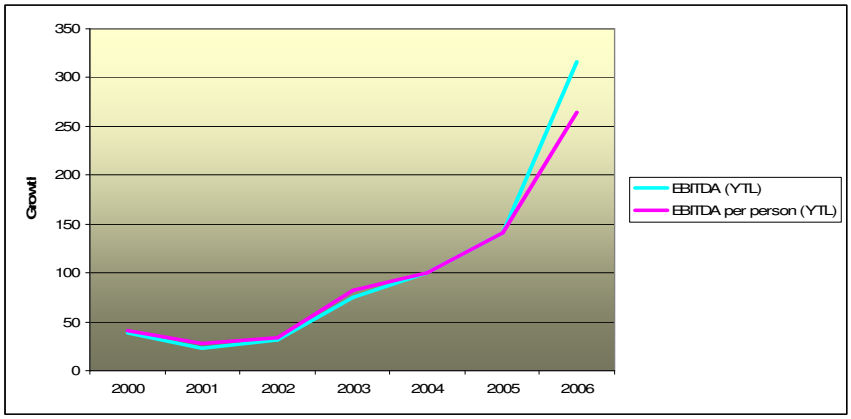

Figure 14. Change in EBITDA

Table 12. Financial Operations Index

	2000	2001	2002	2003	2004	2005	2006
Number of Orders per Year (domestic and exports)	47,73	52,15	56,24	64,86	100	134,16	114,77
Number of Receipts per Year (domestic and exports)	77,07	61,84	67,36	87,98	100	133,48	162,30
Total Inventory	23,43	29,21	53,61	95,96	100	107,63	197,25
Average Sales Price	40,39	54,28	82,37	95,05	100	106,60	130,80
EBITDA	38,95	22,92	31,15	74,41	100	141,76	315,76
EBITDA per employee	41,29	27,45	34,05	81,86	100	141,76	264,64
Net Sales	18,48	26,04	45,79	72,35	100	118,82	168,35
Working Capital Related to Sales	N/A	N/A	N/A	N/A	100	105,65	127,91
Average Outstanding Receivables	N/A	N/A	N/A	N/A	100	162,36	207,25
Days of Outstanding Receivables	N/A	N/A	N/A	N/A	100	119,72	90,80

Industry and Market Position: Knauf has the highest estimated local turnover ($60 million) and gypsum board sales (17000 m^2) among its rivals. The closest competitors are Dalsan Lafarge and ABS, who will be competing with Knauf in the $197 million market in 2007. Despite the fact that Knauf has the leading position in gypsum board sales, it lags behind in gypsum powder sales. Furthermore, now that Saint Gobain has acquired İzocam, a future threat may occur if they engage in gypsum board production.

Competitive Advantage: The value creating activities mentioned in Chapter 3 enable Knauf Turkey to have competitive advantage in terms of production, quality of products and employee satisfaction.

Value Creating Activities- Knauf creates value through its production routine, quality standards and philosophy and human resource management philosophy that can be observed through the company's value network diagram. The main value creating activities are as follows:

1. Throughout the inbound logistics Knauf creates value by using the knowledge and experience of its logistics department employees and the chemical know-how from Germany.
2. The operations stage in both Ankara and İzmit share the same value creating activities, which are German know-how, qualified personnel in quality and logistics departments and the feedback system during production.
3. In outbound logistics stage, Knauf export its product in countries where Knauf facilities do not exist and hence tries to create value through brand name and market development.
4. In the market, Knauf produces complementary products for gypsum board in order to enhance the value created by the gypsum board production. In addition, the feedback flows to and from the quality department helps Knauf to adjust the quality of the products or services.

Corporate Ties

Customers: *Dealership Structure*- Knauf dealers are spread across Turkey in all seven regions. However, most of the dealers are concentrated in Ankara and Istanbul with 30 and 15 percents respectively. The number of dealers in each region is given below:

Central Anatolia Region	21
Marmara Region	15
Aegean Region	8
Mediterranean Region	7
Southeast Anatolia R.	5
East Anatolia Region	2
Black Sea Region	3

More than half of these dealers sell Knauf products for over ten years and on the average, eight people are employed per dealer. Earnings of the dealers are mainly realized by direct sales of Knauf products and/or through application of Knauf products at project sites. Dealers are expected to comply with Knauf plans and programs for the coming year, i.e. the exepctation of market growth and dealer sales have to be parallel and they should support Knauf activities in their region. The dealers differentiate with respect to their turnovers; however Knauf policy is equality among all dealers, i.e. there are no promotions or rewards based on earnings.

Dealership Management- Number of dealers for a given region is determined by the consideration of population, average income per capita, education level in the region and the existing number of Knauf and competitors' dealers. The dealers are being directed through the headquarters in Ankara. Mainly they are given targets for the fothcoming year and they are rewarded if they can reach the target sales level. The dealer's shops are being equipped according to Knauf corporate identity and they are being supplied with promotion materials throughout the year.

Customer Satisfaction: *Communication Performance with Customers*- (average reply time (days) to an inquiry arriving to the company by phone, mail or fax)

Desire to Become a Knauf Dealer- (number of dealers among the years)

Strength of Brand Name in Construction Sector- (frequency of Knauf being specified in projects or technical contracts)

Looking at the customer satisfaction indicators, it is revealed that Knauf has performed worse in 2007 in communication performance and Knauf dealership compared to previous years. Only the brand name strength has increased significantly.

Table 13. Customer Satisfaction Indicators

	2007	2006	2005
Communication Performance	0,62 days	0,38 days	0,27 days
Knauf Dealership	146 dealers	154 dealers	139 dealers
Brand Name Strength	% 42,1	% 40	% 14

*Ability to Satisfy Customer Needs By Quality and Diversity of Products- (*compare product range with competitors) Knauf produces and imports a wide variety of products compared to its competitors. (Detailed tables are provided in Appendix B)

Corporate Culture

Organizational Culture: The main goal of Knauf is to provide complete building solutions through complementary construction materials, meet the needs of designers and constructors and hence create value by making interior design safer and more comfortable for the households. In doing so, the company focuses on customer satisfaction and tries to improve its processes and products. The customer satisfaction concept in Knauf includes planning and budgeting together with the customers; informing the customers about Knauf products, systems and their applications and providing regular contact through communication and learning. The corporation itself uses the latest production technology imported from Germany in order to utilize material resources efficiently. Furthermore, the organizational norms are formed around an employee oriented environment where creative potential, ideas and proposals are being rewarded. One of the main values in Knauf is the employee structure, which includes employees with certain expertise, vision and rapid and effective decision making skills. The organization continuously supports its employees and expects them to engage themselves more than the average. In addition, Knauf realizes the importance of education and therefore provides internal courses, seminars and personal education opportunities. The leading management plays a role model for the employees and emphasizes free and communication within and outside the organization. It is possible to observe a strong culture since the staff is strongly motivated with organizational norms with high responsibility levels, and as a result there are no extensive procedures or bureaucracy. Finally, Knauf takes on social responsibilities and actively supports projects that use modern methods and do not harm the environment.

Company Philosophy: "The Knauf philosophy stems from the model on which the company is based: we are a family company. The family includes our employees and our customers and consumers. Our strength comes from the earth. So ecology and economy are inseparable as far as we are concerned. And we demonstrate this. We act on it. Our focus is on our customers. They are the meaning and purpose of our

thoughts and actions. It is us who make the market. We plan innovations to meet tomorrow's requirements. We are the market leaders. This implies an obligation to assume responsibility for the public and the environment. The high quality of our products enhances and creates an atmosphere of well-being for people.

We are as good as the sum total of our employees. We depend on your skills, efficiency and creativity. We fulfill our future dreams with our profits. The prerequisite for this is successful and contented customers. State of the art production techniques are characteristic of our operations. Our production plants are pleasant to work in, efficient and ensure a conscientious approach to resources and the environment.

We produce modular systems. These simplify planning and construction, offering complete solutions and assured quality."

4.2 Alternative Strategic Options

The strategic position index discussed in the previous section provides a starting point for strategic option development, i.e. it defines the current position of Knauf Turkey. The next step in our methodology is to generate strategic options and then evaluate them with reference to scenarios and behaviors. This evaluation includes a methodology where the strategic options most affecting the objectives of the given scenario and behavior is assumed to form a strategic direction. This direction leads to a different position, which is defined using the strategic position index.

In order to propose different strategic options for the company, three methods are used: strategy development directions, Porter's generic strategies and TOWS (Threats Opportunities Weaknesses Strengths) analysis. All these methods use the results and indicators of the analyses given throughout the text.

4.2.1 Strategic Option Generation Methods

For strategic option generation three commonly used tools in strategic planning are used. Namely these are strategy development directions, Porter's generic strategies and TOWS analysis. We chose to use strategy development directions since this tool

provides a basic framework based on the market and the product. Similarly, Porter's generic strategies also provide a basic framework based on competitive scope and competitive advantage. Thus, once Knauf Turkey's current position is defined; these tools provide an overall structure for the strategic options. Then, we implemented TOWS because it is a detailed analysis of threats, opportunities, weaknesses and strengths from which various strategic options can be generated.

From each method, different strategic options are derived regarding the scope of the method and finally these options are discussed in more detail in Evaluation of Strategic Options section. It should be noted that these methods only provide a framework for strategic options. In fact, all the options are determined using the results from the analyses in this text and also insights gained during the analyzing process.

Strategy Development Directions

This method has a market and product point of view for generating a strategic direction. These directions provide strategic options for existing or new markets and products, which are given in Table 12. Here, Knauf Turkey has two different options for the market, i.e. Knauf activities in Turkey and in export countries.

To begin with, Knauf products are standard therefore new product development is not easy. It can only be done by using different chemicals or materials, which the competitors can easily imitate. Hence, the Turkish market corresponds to the first quarter of the table (existing product, existing market).

Although there are no Knauf facilities in export countries (Iraq, Syria, Lebanon, Jordan and Cyprus), there is a market for gypsum products in these countries. Therefore, the products are not new but Knauf brand name is new in the market. These conditions correspond to the second quarter in the table (new product, existing market).

Table 14. Strategy Development Directions

	Products		
Markets		**Existing**	**New**
	Existing	PROTECT/BUILD	PRODUCT DEVELOPMENT
	New	MARKET DEVELOPMENT	DIVERSIFICATION

For Knauf activities in Turkey, the "Protect or Build" direction refers to sustaining and strengthening its market position. The main goal here is to stay competitive in the market. Common proposals for this direction are increase sales, increase number of dealers and emphasize quality. Strategic options such as improving logistics and advertising, and active bidding for large construction projects can be derived from the capability analysis in the previous chapter. These options aim to strengthen the weaknesses and also use the strengths of the company.

For Knauf activities in export countries, the "Product Development" direction aims to penetrate the product into the market. The main goal here is to introduce and sell a new product in the market. Information is crucial in understanding customer needs and market structure so that product features and marketing activities are determined to penetrate the product into the market. Here, being a pioneer may have various benefits. One commonly proposed direction is to emphasize quality. Furthermore, building relationships and joining fair, exhibitions, events and projects for brand name recognition can also be proposed for Knauf.

Porter's Generic Strategies

Generic strategies were used initially in the early 1980s, and they are still used today to provide an outline of strategic options in order to achieve sustainable competitive advantage. Different from the previous method, this one generates directions from a competitive advantage point of view. There are two aspects in this method: competitive advantage and competitive scope. Sources of competitive advantage concentrate on cost and sources of competitive scope concentrate on market size. This tool uses three main

strategic directions. The first is cost leadership, which emphasizes cost advantage and the strategy proposed is to be the producer with lowest cost. The second is differentiation where target goods and services are produced for specific market segments. The final one is focus or niche strategy that focuses effort and resources on a narrow and defined segment of the market where the focus is either on cost or on differentiation[33]. The generic strategies are presented in Table 15.

Table 15. Porter's Generic Strategies

	Competitive Advantage		
Competitive Scope		**Low Cost**	**High Cost**
	Broad	OVERALL COST LEADERSHIP	DIFFERENTIATION
	Narrow	COST FOCUS	DIFFERENTIATION FOCUS

In the gypsum and gypsum board market, unit production costs are lower compared to other industries. Also, there are various types of gypsum, gypsum boards, renders and fillers; resulting in an extensive scope on competition. Hence Knauf Turkey has a broad competitive scope and low cost competitive advantage. In this case, the proposed generic strategy is "Overall Cost Leadership" where the organization is the low cost producer for a given level of quality. If Knauf prefers to use the average sales price in the market, it can enjoy high levels of profit, on the other hand if it lowers its sales price it may acquire higher market share. At this point, there are certain risks related to lowering prices since other producers can also lower costs and begin a price war that may damage competitive advantages of the players in the market. Another risk is that in case several firms enter the market while lowering their costs, they may acquire certain segments and reduce the market share of Knauf and other competitors.

[33] Marketing Teacher Ltd. 2000. 01/05/2001
< http://marketingteacher.com/about_main.htm>

The common strategic options offered for this direction in literature are improving process inefficiencies, unique access to resources, vertical integration or optimal outsourcing. Since there is no unique resource for gypsum industry, improving process inefficiencies and vertical integration are applicable for Knauf among the options. About outsourcing, Knauf continuously evaluates its contractors using ISO 9001 standards and changes the contractor in case of an increase in complaints. Thus it is possible to state that outsourcing activities are optimally performed at Knauf.

TOWS Analysis

TOWS analysis is similar to SWOT in that the same concepts of strengths, weaknesses, opportunities and threats are used in a forward direction. A stronger feature of TOWS is that it is possible to put all the capability and threat information and evaluate them from different perspectives in TOWS. Also, it is possible to generate four conceptually different strategic directions that are abbreviated as SO, WO, ST and WT. More specifically, SO generates strategies that would take advantage of opportunities and strengths; WO generates strategies that would minimize weaknesses and take advantage of opportunities; ST strategies are based on the strengths of the organization that can be used to avoid threats, and WT generates strategies that would minimize weaknesses and avoid threats. The indicators and strategic options of TOWS analysis are given in Table 16.

Overall, this tool in fact aggregates some of the analyses throughout the text. Namely, from the 2006-2011 World Outlook and Turkish Construction Industry researches opportunities are derived; from PESTEL threats are identified and from the value network and its following sections the weaknesses and strengths are derived.

Table 16. TOWS Analysis

SO: Strategies that would take advantage of opportunities and strengths. ***WO:*** Strategies that would minimize weaknesses and take advantage of opportunities ***ST:*** These strategies are based on the strengths of the organization that can be used to avoid threats. ***WT:*** Strategies that would minimize weaknesses and avoid threats.		**Strengths** • Logistics expertise • Know-how from Germany • Feedback flow during production • Complementary products • Quality • Export activities	**Weaknesses** • Lack of a dealer network • Dealers' locations • Gypsum production capacity • Marketing and advertising
Opportunities	• World gypsum market growth • Potential industry earnings • Investment plans in Adana • Market development in Iraq, Syria, Cyprus, Jordan and Lebanon	*SO* Investment in Adana Improve domestic and export logistics Investment in capacity increase	*WO* Investment in Adana Investment in capacity increase in Ankara More emphasis on dealer location and relationships
Threats	• Small scale competition • Resources • Product substitutes • Saint Gobain and İzocam partnership • Political and economical stability • Family business(internal)	*ST* Use all the strengths in order to avoid threats Investment in capacity increase	*WT* Group projects for dealers Invest in capacity increase Use all the strengths in order to avoid threats

The strengths of Knauf Turkey come from the value generating activities mentioned in capability analysis in Chapter 3. These value generating activities are knowledge and expertise of logistics personnel, know-how from Germany in the form of chemical know-how, methodology and innovation; complementary product production through Knauf Artfix; product range; feedback flow during production processes; quality of the products and export activities aiming market development.

Weaknesses are presented as discussed previously, i.e. dealer structure (concentrated in urban areas); replenishment insufficiencies due to production structure; low levels of gypsum production capacity and lack of marketing/advertising activities.

Threats are generated using PESTEL, FAR and environmental analyses from previous sections. The most outstanding threats are competition from small scale entrants; resource extinction, substitute products for gypsum boards or gypsum powder; domestic political and economical instability and family business issues (internal threat). Specifically, small scale entrants are posing a threat since building gypsum factories does not require high levels of capital, and the market has a high growing potential both domestic and worldwide. Also, the recent partnership of İzocam and Saint Gobain poses a threat since they can produce various complementary products at lower costs, and the marketing of their partnership may be powerful to attract more customers. In addition, resources of this industry may come to an extinction regarding global warming and other environmental issues. Political and economical instability may become a threat in case of a crisis since inflation and interest rates may soar rapidly, resulting in higher costs and lower sales. Finally, the current managers of Knauf will be retired soon, which may become a threat in case the new management can not handle the business well.

Opportunities for Knauf Turkey arise mainly from domestic and worldwide market growth, company's long term plans and value creating activity in outbound logistics stage mentioned in Chapter 3. Both the potential earnings and the gypsum world market are expected to grow for the following four years. In 2008, the potential industry earnings for the gypsum market in Turkey is expected to reach its 2001 level before the crises. (See Table 4) Also, the residential construction in Turkey is expected to increase, which altogether provide a suitable environment for expansion. Following these opportunities, Knauf Turkey's long term plan of investment in Adana is also an

opportunity to create a diagonal route in Turkey and hence further strengthen its logistics position. The final opportunity comes from a value generating activity and creates various market alternatives for Knauf through its export strategy.

In this analysis, each quarter of the table represents different strategies for the specified position. The most desired positions could be SO and ST because strengths are used either to avoid threats or benefit opportunities. It should be noted that the strength of know-how from Germany can not be used as a strategy by Knauf Turkey since it is performed in Germany. However, the strengths in logistics expertise can be used to benefit from market development opportunities, and further investments may enable Knauf Turkey to increase its market share and enjoy potential industry earnings. When it comes to threats, Knauf could use all of its strengths to avoid them and build a strong market position. A capacity increase (a common strategic option) may be required in order to compete with small scale producers; on the other hand in order to cope with Saint Gobain and İzocam partnership Knauf should emphasize the production of complementary products such as steel studs, plasters and other materials that complement the use of gypsum powder and gypsum board. Similarly, through capacity increase and more emphasis on dealer relationships (trying to form a proper network for instance, or the capacity increase that would prevent the dealers from buying competitors' products when they are short of supply of Knauf products), some of the weaknesses could be minimized while taking advantage of opportunities of the growing market. The least desirable (and also difficult) position is WT, where both threats and weaknesses should be resolved. Yet, for Knauf the strengths are sufficient to overcome most of the threats, and an additional capacity and a dealer network configuration would help to overcome weaknesses as well.

The fact that all of the strategic directions (SO, ST, WO, WT) in this analysis are similar to each other indicate that regarding internal and external dynamics, there is not much of an alternative among strategic positions for Knauf Turkey. One reason is that, the weaknesses and threats are minimized using common strategies and another is that Knauf Turkey has a robust business structure due to the nature of the market and the products.

Strategic Options

Knauf management is aware of the company's weaknesses and tries to reduce them (trying to form a dealer network through "Konutta Knauf" project in order to strengthen their dealer relationships and interactions for instance). Also, Knauf has a high market share with increasing profits, meaning that it does not require a strategy to be more successful. Thus strategy development at Knauf addresses at minimizing company's weaknesses using some of the company strengths and also other strategic options defined above.

The following is a list of strategic options derived from the strategy development directions, Porter's generic strategies and TOWS analyses:

1. Increase the number of dealers and locate them in rural areas
2. Improve logistics
3. Improve marketing activities
4. Emphasize quality
5. Active bidding in large construction projects (hospitals, airports…etc)
6. Build relationships through joining fairs, exhibitions and projects in export countries
7. Improve process inefficiencies
8. Vertical integration
9. Investment in Adana
10. Investment in capacity
11. Produce complementary products
12. Form a dealer network

The first five options are proposed in order to strengthen the company's position in Turkish market. Increasing the number of dealers (1) and locating them in rural areas (in order to have a more homogenous distribution of sales and dealers due to risks mentioned in Section 3.4), and improving marketing activities (3) address to Knauf's weaknesses mentioned in Section 3.3. Improving logistics (2) and emphasizing quality (4) on the other hand are proposed in order to benefit from the company's strengths. The final option (5) aims market penetration through projects and thus reinforces the improvement of marketing activities.

For product development in export countries the strategic option is concentrated on building relationships for brand name recognition and introducing the products into the market (6).

In order to achieve a low cost leadership in the market, Knauf should improve process inefficiencies (7) if there exists any and it should be vertically integrated with its suppliers. Vertical integration (8) is the degree to which a firm owns its upstream suppliers and downstream buyers. It may have benefits for the company in terms of cost, product differentiation and control of assets. About costs, it reduces the market transactions by internalizing activities; also it enables the control of assets and ensures cooperation of key value adding players. Vertical integration occurs partially at raw material level where the mining rights are acquired (backward integration) and also the joint venture with Knauf Artfix helps the firm to be vertically integrated by producing complementary products (forward integration).

The final strategic options aim to improve the weaknesses and eliminate threats according to the results of the TOWS analysis. Investment in Adana (9) will enable Knauf to better manage logistics and form a diagonal route across Turkey, which is among the long-term plans of the company. The investment in capacity (10) will alleviate dealer replenishment problems, and producing complementary products (11) will help the company to be strong against competition. Lastly, forming a dealer network (12) is proposed since in robust supply chains, incremental innovation generation can be achieved through buyer seller interaction and trust, hence forming a strong network. (Roy 6, 9) Also, the weaknesses of dealer structure can be overcome by a dealer network approach.

In addition to the strategic options proposed above, it is also possible to propose a strategic option that would aim to adopt technology to use resources efficiently in case of an environmental deterioration. For instance, recycling water or reducing carbon dioxide emissions could be alternative directions of this strategic option.

4.2.2 Evaluation of Strategic Options

As mentioned earlier, the evaluation of the options proposed in previous section is done regarding the most positive effect on objectives of the company under a given scenario. The company objectives were defined in Section 4.1 and they are customer satisfaction for all products and services, profit maximization, market leadership and growth, production with minimum costs and innovation and creativity at all levels of production, services and corporate culture.

In the scenario analysis, three different scenarios were generated in Section 3.1.8. The worst-case scenario is considered to be less unlikely by the Knauf management since it combines the most extreme negative possibilities. Hence, two of those three scenarios are used in the evaluation. The moderate scenario is chosen because it covers most of the negative possibilities under a logical framework (the worst case scenario is not likely to occur in the future), and the optimistic scenario is chosen to represent a positive environment. Therefore, the two basic frameworks for evaluating the strategic options are the optimistic scenario and the moderate scenario. Recalling the scenarios from Section 3.2:

Optimistic Scenario ($C_2 + E_2 + F_1 + R_1 + I_1$)

- Highly competitive with ABS, Dalsan Lafarge, Saint Gobain and small scale producers
- Strong growth in economy
- Future owners perform better than previous ones
- Easy access and fair prices for resources, worldwide stable energy market
- Quantity based market leadership in drywall systems market

Moderate Scenario ($C_3 + E_3 + F_2 + R_2 + I_2$)

- Moderately competitive
- Steady growth in economy
- Future owners perform worse than previous ones
- Obligation to use substitute energy resources due to increasing prices
- Loss of quantity based market leadership in drywall systems market

Scenarios were generated using the FAR (Field Anomaly Relaxation) tool in section 3.1.8. In FAR, possible outcomes of five topics (competitiveness of Knauf, long-term economic potential, family business issues, raw material and energy resources and industry profile) were listed from the most optimistic to the most pessimistic view. Then, three basic conditions were used to categorize these possible outcomes, which were optimistic, moderate and pessimistic (the numbers in parentheses represent which possible outcome of a field topic is chosen for the scenario). Here, it is possible to follow two different directions (behavior) under the scenarios. The company will choose to adopt a risk-averse behavior where it tries to stay competitive by using its resources and not much investment in case of the moderate scenario; or it will choose to follow an expansionary behavior where expenditures are increased in order to benefit from the positive environment or reduce prospective risks by taking precautionary investments or expenditures in case of the optimistic scenario. It can also choose to do-nothing, which is a behavior independent of the scenarios.

The objectives of a direction under a given scenario are chosen from the list of company objectives stated in the strategic position index in Section 4.1. Additional ones are introduced in cases where the list of objectives is insufficient to fit the scenario and the behavior. In the literature, there are different views about whether to define objectives before or after the strategy formulation; however the common approach defines the objectives first and then fits and evaluates strategies accordingly, which is the approach used throughout this section.

In the optimistic scenario, the expansionary behavior supports expansion and expenditure increase. This is basically to benefit from the growing economy and strengths of the company in order to be more competitive with increased profit and market share. The objectives then will be profit maximization, customer satisfaction; market leadership; cost minimization; development of new core competencies and innovation and creativity at all levels of production, services and corporate culture.

In the moderate scenario, a risk-averse behavior aims at sustaining the current competitive position while avoiding additional expenditures due to the steady growth in economy and resource problems. (Substitute resources would cause additional expenditures, nevertheless) Hence the objectives will be customer satisfaction market

leadership; cost minimization; strengthen competitive power; innovation and creativity with current resources and rapid improvement of weaknesses.

Alternative to the behaviors above, the company may also choose to do-nothing and preserve its current position regardless of a scenario. Then, the company objectives will be the ones listed in the current strategic position index, i.e. customer satisfaction; profit maximization; cost minimization; market leadership and innovation and creativity at all levels.

Evaluation of Strategic Options- Risk-Averse Behavior, Moderate Scenario

Table 17. Evaluation of Strategic Options 1

STRATEGIC OPTIONS	OBJECTIVES					
	Customer Satisfaction	Market Leadership	Cost Minimization	Strengthen Competitive Power	Innovation and Creativity with current Resources	Rapid Improvement of Weaknesses
Increase # of Dealers in Rural Areas		✓		✓		✓
Improve Logistics	✓	✓	✓	✓		
Improve marketing activities	✓	✓		✓	✓	✓
Emphasize Quality	✓	✓		✓		
Active bidding in large construction projects	✓	✓		✓	✓	
Build Relationships in Export Countries	✓	✓		✓		
Improve Process Inefficiencies			✓	✓	✓	
Vertical Integration		✓	✓	✓		
Investment in Adana	✓	✓		✓		
Investment in Capacity	✓	✓	✓	✓		✓
Produce Complementary Products	✓	✓		✓		
Form a Dealer Network	✓	✓		✓	✓	✓
Adopt technology to use resources efficiently				✓	✓	

Evaluation of Strategic Options- Expansionary Behavior, Optimistic Scenario

Table 18. Evaluation of Strategic Options 2

STRATEGIC OPTIONS	OBJECTIVES					
	Profit Maximization	Customer Satisfaction	Market Leadership	Cost Minimization	Development of New Core Competencies	Innovation and Creativity at all Levels
Increase # of Dealers in Rural Areas			✓		✓	
Improve Logistics	✓	✓	✓	✓	✓	
Improve marketing activities		✓	✓		✓	✓
Emphasize Quality		✓	✓		✓	
Active bidding in large construction projects	✓	✓	✓		✓	✓
Build Relationships in Export Countries		✓	✓		✓	
Improve Process Inefficiencies	✓			✓	✓	✓
Vertical Integration			✓	✓	✓	
Investment in Adana	✓	✓	✓		✓	
Investment in Capacity		✓	✓	✓	✓	
Produce Complementary Products		✓	✓		✓	
Form a Dealer Network		✓	✓		✓	✓
Adopt technology to use resources efficiently					✓	✓

Strategic Option Sets for Risk-Averse and Expansionary Behavior

Table 19. Strategic Option Sets

	RISK-AVERSE BEHAVIOR	EXPANSIONARY BEHAVIOR
Strategic Options	Improve marketing activities	Improve logistics
	Investment in capacity	Active bidding in large construction projects
	Form a dealer network	Improve marketing activities
	Improve logistics	Improve process efficiencies
	Active bidding in large construction projects	Investment in Adana
		Investment in capacity
		Form a dealer network
Alternative Strategic Options	Increase number of dealers in rural areas	Emphasize quality
	Emphasize quality	Build relationships in export countries
	Build relationships in export countries	Vertical integration
	Improve process efficiencies	Produce complementary products
	Vertical integration	
	Investment in Adana	
	Produce complementary products	

Tables 17 and 18 represent the evaluation method of strategic options. Horizontally, the strategic option that most affects an objective is shaded in dark blue. Lighter shades indicate that the strategic option has a lower impact. The un-shaded option indicates negligible impact on the objectives. It is also possible to analyze the tables vertically. Then, the tables reveal which of the objectives will be affected the most strongly in case all the options are implemented. Similarly, darker shades of green indicate more impact etc as before. In Table 19, the strategic option sets and alternative strategic options are given for risk-averse and expansionary behavior (for the do-nothing behavior no strategic action is taken, thus there does not exist a strategic option set). Strategic option sets are formed using the options that have significant effect on the objectives (affecting more than three objectives) and the alternative options are formed using the options that less significant effect on the objectives (affecting exactly three). The options that affect two and less than two objectives are not taken in those sets since they have negligible positive effect.

The strategic options that would be most effective under the risk-averse behavior for moderate scenario are improving marketing activities; investment in capacity and forming a dealer network. Improving logistics and active bidding are also significantly effective strategic options. Note that, the strategic options for this behavior aim at strengthening the weaknesses and also preserving the market leadership position with current resources such as improvements. Forming a dealer network is one of the most effective strategic option since it does not require additional investments. A proposal for a dealer network model is given in the next section. For the risk-averse behavior, alternative strategic options are: increase the number of dealers in rural areas; emphasize quality; build relationships in export countries; improve process inefficiencies; vertical integration; investment in Adana and produce complementary products. In case the all of the options are implemented, the objectives of market leadership and customer satisfaction would be fulfilled the most.

The strategic options that would be most effective under the expansionary behavior for optimistic scenario are improving logistics and active bidding. Improving marketing activities and process inefficiencies; investment in Adana and capacity and forming a dealer network are also significantly effective strategic options. Here, the strategic option set is larger than the set for the risk-averse behavior since the environment (scenario framework) is more suitable for implementing several strategic options. It

should also be noted that the strategic options for this behavior aim at benefiting from the growing economy and making the company more competitive in the market. For this behavior the alternative strategic options are: emphasize quality; build relationships in export countries; vertical integration and produce complementary products. In case the all of the options are implemented, the objectives of market leadership and customer satisfaction would be fulfilled the most.

As mentioned earlier, there are no strategic options for the do-nothing behavior since this behavior aims at preserving the company's current position as it is. Note that, this behavior is independent of the scenarios, i.e. Knauf management may choose to do-nothing in case of a positive or negative environment in the future. However, the consequences of this behavior will not be the same for each scenario. For the optimistic scenario, the do-nothing behavior will prevent Knauf Turkey from taking advantage of the positive environment. Thus, the company will loose its competitive edge and market leadership. Similarly, for the moderate scenario, if the do-nothing behavior is chosen, Knauf Turkey will not be able to strengthen its weaknesses and it will also begin to loose its competitive edge in the gypsum market. Here, the other producers will also be in the negative environment of the moderate scenario, hence the loss of competitive edge for Knauf may not be as serious as it would be in the optimistic scenario case. The do-nothing behavior is also proposed as a strategic position, which will be the current position; however since there are no strategic options, there is no evaluation for this behavior.

Each behavior creates a different future position for Knauf under the given scenario. In the following section these future positions are introduced and then they are evaluated through the decision of Knauf management.

Dealer Network Model

As indicated above, forming a dealer network is one of the most beneficial strategic options. In this section a brief network model for Knauf will be introduced along with a selection of network theories and models. To begin with, a network is defined as a voluntary long-term agreement where the resources are commonly used by the actors. This cooperation aims at giving the parts an increased individual fulfillment of objectives, through a mutual commitment toward a common goal. The term network has been widely used in describing economic organizations since new competition fundamentals focus on integration and links, and also nowadays it is possible to form more flexible economic activities due to new information technologies[34]. The most common benefits of networks are knowledge diffusion, learning and trust, which enable the actors in a network to benefit from other actors' skills, resources or the information flow in the network.

Basically, building a network requires human, social and financial capital and interactions among the actors. These interactions are mainly short-term social exchanges of information, which in time turn out to be long-term relationships[35]. Recently, it has been proposed that greater levels of interaction between buyers and sellers result in greater levels of innovation. Similarly, trust is a very important component of network and greater levels of trust enhance innovation in supply chain relationships[36]. There are various approaches in forming a network, and the Toyota network is given as one of the most successful models. It is based on a collective learning process that allows the transfer, recombination or creation of specialized knowledge. In this network, Toyota formed learning teams and arranged regular meetings in order to establish a knowledge transfer routine, and encourage the members to participate. Also, it set network rules and values to prevent free riders, and in order to achieve maximum efficiency in knowledge transfer it formed sub-networks

[34] Sorensen, Olav Jull. "The Network Theory." International Business Economics Study Material Series vol 8 1996: 2

[35] Sorensen, Olav Jull. "The Network Theory." International Business Economics Study Material Series vol 8 1996: 7

[36] Roy,Subroto et al.. "Innovation Generation in Supply Chain Relationships." Journal of the Academy of Marketing Science vol 20 2003: 6,9

where smaller groups transferred specific knowledge[37]. With this network structure, Toyota is argued to generate, transfer and recombine knowledge and thus create a competitive advantage.

It is obvious that networking has benefits that overcome isolated organization structures. Until recently, Knauf had not implemented a network structure with its dealers. However, the project named "Konutta Knauf" aims for the interaction of dealers and conducting the projects through their shared knowledge and experience. Yet, as the evaluation of strategic options in the previous section and the Toyota examples indicate, a strong dealer network would enable Knauf to transfer specialized knowledge (product knowledge, application of materials, demand and market information) and further enhance its competitive advantages.

Despite the fact that the dealers are competitors in principle, their collaboration would result in acquisition of new technologies or skills from each other[38]. In order for such a collaboration to succeed, the parties must contribute and share their distinctive knowledge or skills. This can be in the form of technology sharing, resource sharing or even skill sharing. In the case of Knauf, the dealers can share their knowledge and expertise, as well as their social or financial capital. At this point, senior management has to be committed to improve its company's skills, resources...etc by playing a leading role and continuously informing the employees about the process and its improvements or drawbacks.

The annual meetings with the dealers and the "Konutta Knauf" project can be considered as the initial structures in forming a network. However; in order to have a strong dealer network Knauf must ensure certain things such as homogenous flow of knowledge, trust among the dealers, participation in networking activities and disclosure of skills, experience and technical knowledge. A network model where the dealers meet regularly forming learning teams and conduct common construction projects would be appropriate for Knauf. Some features from the Toyota network model

[37] Dyer, Jeffrey H., Nobeoka, Kentaro. "Creating and Managing a High Performance Knowledge Sharing Network: The Toyota Case." Strategic Management Journal vol 21 2000: 351

[38] Hamel, Gary, et al. "Collaborate with Your Competitors and Win". Harvard Business Review January-February 1989: 134

can be benchmarked, however in time Knauf should formulate its own network rules and features since imitation would prevent creativity and innovation.

It should be noted that an extensive study of the organization and dealer structure is required before deciding on a network model, hence considering the scope of the text, the network model discussion is limited to the information given above.

4.3 Alternative Future Positions

In the previous section, the strategic options were evaluated regarding company objectives. From this evaluation a set of strategic options for each scenario and behavior is derived. In creating an alternative position for the future of Knauf, the strategic position index defined in Section 4.1 is used, i.e. the variables of the index will be changed with respect to the objectives and the proposed strategic options.

Altogether, four different future positions are proposed using the same framework from the evaluation method. The company may either choose an expansionary behavior under the optimistic scenario or it may choose a risk-averse behavior under the moderate scenario. Also, the company may choose to do nothing in case of moderate or optimistic scenario.

The figure below shows the links between analyses and evaluations in the methodology we have used in more detail. Here it is possible to see the relations of the analyses we have done in the beginning with the strategy development phase. The outcome of environmental and capability analyses are used in the strategy development process. Then together with the scenario analysis, these outcomes are integrated into the evaluation of strategic options. The strategic position is used to define the current and proposed positions and finally the evaluation of four proposed positions is done with Knauf management regarding the outcomes from the environmental analysis.

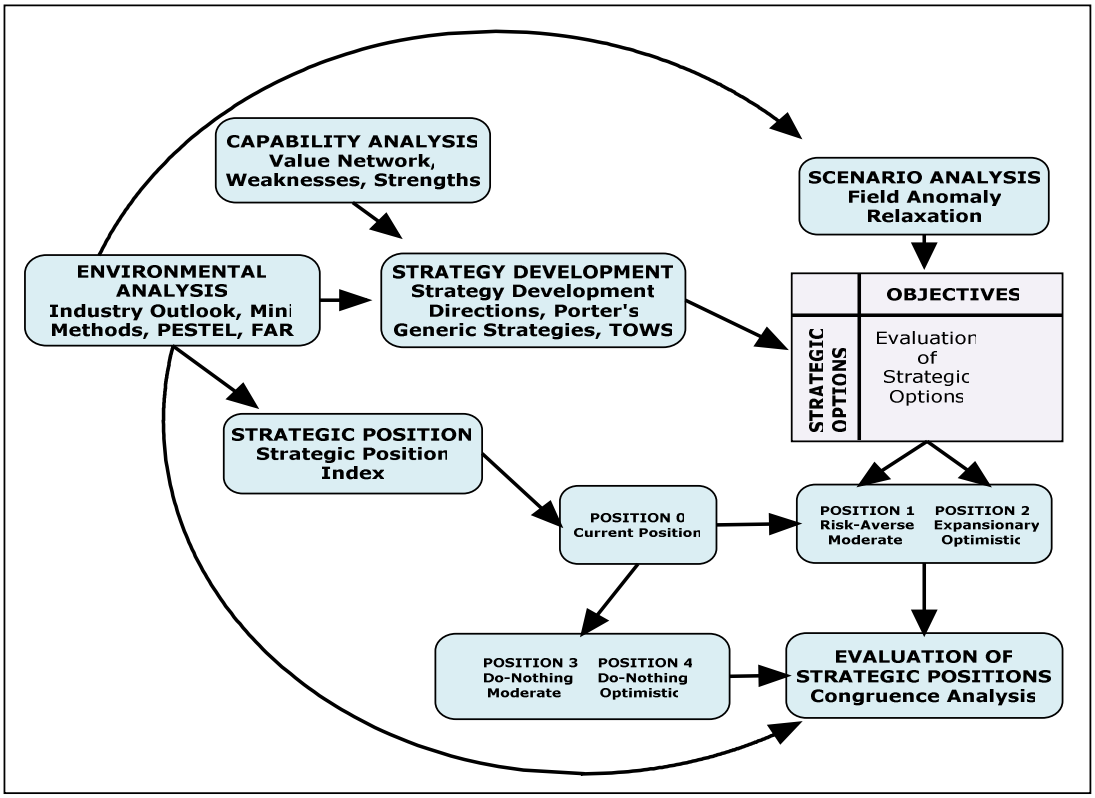

Figure 15. Strategy Development Methodology in Detail

4.3.1 Strategic Position Index for Alternative Positions

Mainly, the alternative position indices represent risk-averse or expansionary behavior under the moderate and optimistic scenarios, respectively. Each of the indices move Knauf Turkey from its current position to an alternative future position. In order to define an alternative position, the strategic position index defined in Section 4.1 is used. In the alternative position indices only the corporate culture variable is not included because this variable does not change with respect to a chosen behavior.

Since the do-nothing behavior does not implement any strategic option, the position of Knauf will not change in this case (hence the position index variables remain the same). Therefore, the positions for the expansionary and risk-averse behavior are given below and the current position is also considered as the position for the do-nothing behavior.

Table 20. Strategic Position Index for Risk-Averse Behavior

POSITION INDEX VARIABLE	CONTENT	CURRENT POSITION (DO-NOTHING BEHAVIOR)	POSITION 1 RISK-AVERSE BEHAVIOR
Mission and Objectives	Mission	Contributing to social health and life assurance by producing high and international quality drywall systems	
	Vision	To be the quantity based market share leader that produces contemporary construction materials in Turkish drywall market, and in doing so keeping customer satisfaction as the primary concern	
	Long-term Plans	Achieve the best logistic structure across Turkey by investments located in a diagonal route passing from İzmit, Ankara and Adana; invest in complementary products that are insulation materials such as glass and rock wool.	
	Objectives	Customer satisfaction; profit maximization; market leadership and growth; production with minimum costs; innovation and creativity at all levels of production, services and corporate culture	Customer satisfaction; market leadership and growth; production with minimum costs; strengthen competitive power; innovation and creativity with current resources; rapid improvement of weaknesses
Functional and Operational Configuration	Resources	Major resources are water, paper, energy and gypsum	
	Facility Locations	There are two factories of Knauf Turkey, one in Ankara and the other in İzmit	
	Product Range	Gypsum powder products, cement based products, gypsum boards and imported products.	
	Marketing	Dealer meetings, fairs and exhibitions, project contest in universities' civil engineering and architecture departments, outdoor advertisements and indoor posters	Improve marketing activities by concentrating on brand name recognition.
	Quality Standards	European Norms and ISO 9000	
	Services	Knauf provides after sales service of picking up the defected item and replacing it with another product (if necessary) as long as the complaint is relevant. Also, the call center provides consultation within 24 hours.	
	Physical Operations	Production of gypsum plaster, gypsum board, insulation materials, steel studs, cement based plasters and accessories	Using current physical operations, production capacity is increased.
	Financial Operations	The financial indicators show that the company performs well.	The company performance is expected to be preserved.
	Industry and Market Position	Knauf has the highest estimated local turnover ($60 million) and gypsum board sales (17000 m2) among its rivals	Knauf Turkey is expected to preserve its position in the market.
	Competitive Advantage	Value creating activities are generated in terms of production, quality of products and employee satisfaction.	Knauf Turkey is expected to increase its value generating activities by implementing the strategic options for this behavior
Corporate Ties	Customers	Knauf dealers are concentrated in Ankara and Istanbul with 30 and 15 percents respectively	A dealer network is formed.
	Customer Satisfaction	Knauf has performed worse in 2007 in communication performance and Knauf dealership compared to previous years	Customer satisfaction is expected to improve when the strategic options are implemented.

Table 21. Strategic Position Index for Expansionary Behavior

POSITION INDEX VARIABLE	CONTENT	CURRENT POSITION (DO-NOTHING BEHAVIOR)	POSITION 2 EXPANSIONARY BEHAVIOR
Mission and Objectives	Mission	Contributing to social health and life assurance by producing high and international quality drywall systems	
	Vision	To be the quantity based market share leader that produces contemporary construction materials in Turkish drywall market, and in doing so keeping customer satisfaction as the primary concern	
	Long-term Plans	Achieve the best logistic structure across Turkey by investments located in a diagonal route passing from İzmit, Ankara and Adana; invest in complementary products that are insulation materials such as glass and rock wool.	
	Objectives	Customer satisfaction; profit maximization; market leadership and growth; production with minimum costs; innovation and creativity at all levels of production, services and corporate culture	Customer satisfaction; profit maximization; market leadership and growth; production with minimum costs; development of new core competencies; innovation and creativity at all levels of production, services and corporate culture
Functional and Operational Configuration	Resources	Major resources are water, paper, energy and gypsum	
	Facility Locations	There are two factories of Knauf Turkey, one in Ankara and the other in İzmit	There are three factories of Knauf Turkey, one in Ankara and the others in İzmit and Adana
	Product Range	Gypsum powder products, cement based products, gypsum boards and imported products.	
	Marketing	Dealer meetings, fairs and exhibitions, project contest in universities' civil engineering and architecture departments, outdoor advertisements and indoor posters	Improve marketing activities by concentrating on brand name recognition.
	Quality Standards	European Norms and ISO 9000	
	Services	Knauf provides after sales service of picking up the defected item and replacing it with another product (if necessary) as long as the complaint is relevant. Also, the call center provides consultation within 24 hours.	
	Physical Operations	Production of gypsum plaster, gypsum board, insulation materials, steel studs, cement based plasters and accessories	With improved process inefficiencies and increased capacity, production volume and quality is increased.
	Financial Operations	The financial indicators show that the company performs well.	The company performance is expected to improve.
	Industry and Market Position	Knauf has the highest estimated local turnover ($60 million) and gypsum board sales (17000 m2) among its rivals	Knauf Turkey is expected to further improve its position in the market.
	Competitive Advantage	Value creating activities are generated in terms of production, quality of products and employee satisfaction.	Knauf Turkey is expected to increase its value generating activities by implementing the strategic options for this behavior
Corporate Ties	Customers	Knauf dealers are concentrated in Ankara and Istanbul with 30 and 15 percents respectively	A dealer network is formed.
	Customer Satisfaction	Knauf has performed worse in 2007 in communication performance and Knauf dealership compared to previous years	Customer satisfaction is expected to improve when the strategic options are implemented.

In Table 20 the position of Knauf when a risk-averse behavior is adopted (position 1) is shown. Here, the objectives; marketing policies; physical and financial operations and industry and market position variables change in the position index. Similarly, in Table 21 the position of Knauf when an expansionary behavior is adopted (position 2) is shown, and the same variables also change in this position. Although the same variables of the position index change, the two behaviors take Knauf Turkey to a different position from its current position (position 0). Risk-averse behavior takes Knauf Turkey to a position where the company uses its current resources and tries to preserve its market leadership and financial performance. On the other hand, an expansionary behavior takes the company to a position where production volume and quality are increased through investments, and market leadership position and financial performance are expected to improve. The differences between position 1 and 2 are shown in the table below in terms of the variables that change in different directions.

Table 22. Different Strategic Position Index Variables of Position 1 and 2

POSITION INDEX VARIABLE	CONTENT	POSITION 1 RISK-AVERSE BEHAVIOR	POSITION 2 EXPANSIONARY BEHAVIOR
Mission and Objectives	**Objectives**	Customer satisfaction; market leadership and growth; production with minimum costs; strengthen competitive power; innovation and creativity with current resources; rapid improvement of weaknesses	Customer satisfaction; profit maximization; market leadership and growth; production with minimum costs; development of new core competencies; innovation and creativity at all levels of production, services and corporate culture
Functional and Operational Configuration	**Physical Operations**	Using current physical operations, production capacity is increased.	With improved process inefficiencies and increased capacity, production volume and quality is increased.
	Financial Operations	The company performance is expected to be preserved.	The company performance is expected to improve.
	Industry and Market Position	Knauf Turkey is expected to preserve its position in the market	Knauf Turkey is expected to further improve its position in the market.

4.3.2 Evaluation of Alternative Future Positions

The evaluation of alternative future positions defined in the previous section has been carried out in collaboration with Knauf management. The four alternative positions are proposed and depending on the analyses throughout the text and the experience of the management, Knauf decided that position 2 (expansionary behavior, optimistic scenario) would be suitable for them.

In order to evaluate the future positions, implications from environmental analysis is used. Basically, the World Outlook and Turkish Construction Industry reports from Chapter 3 are taken into consideration in deciding which behavior would be more appropriate and which scenario would be more likely.

In addition, we chose to use the congruence analysis technique from Geoff Coyle since this tool relates to the preferences of people and groups involved in strategic choices[39]. It is used as an assessment tool where the judgements and preferences of the owners and customers are taken into consideration. Here, the owners are Knauf family members and the customers are the dealers of Knauf. Although this analysis is not an objective one, it makes the judgements explicit and helps the evaluation to be multi dimensional[40]. It uses a simple rating where " - -" refers to a situation that is not desirable at all, "-" is not desirable, "+" is desirable and "++" is very desirable. Below is the congruence analysis table.

[39] Coyle, Geoff. Practical Strategy: Structured Tools and Techniques. (Harlow: Pearson Education Limited, 2004) 125

[40] Coyle, Geoff. Practical Strategy: Structured Tools and Techniques. (Harlow: Pearson Education Limited, 2004) 129

Table 23. Congruence Analysis

POSITION	SCENARIOS	OWNERS	CUSTOMERS
1	**Moderate-Risk Averse**	-	-
2	**Optimistic- Expansionary**	+ +	+ +
3	**Moderate-Do-Nothing**	-	-
4	**Optimistic-Do-Nothing**	- -	- -

The congruence analysis was planned before the future positions were discussed with Knauf management, so that the vision (and also the preferences) of the owners and customers could be used in the decision making process. However, we had some difficulties conducting the analysis. Ideally, the congruence analysis should be conducted by consulting by the owners and the customers in person. Yet, there are over a hundred Knauf dealers all over Turkey, which put a time constraint on the analysis. Moreover, the owners of Knauf live in Germany and they frequently travel around the world to inspect Knauf facilities, thus a meeting could not be arranged. Therefore, the congruence analysis was conducted with Knauf management in Turkey. Although the preferences should be asked in person, this analysis reflects the decisions of the owners and the customers because Knauf management follows the vision of family members and is accustomed to the preferences of their dealers. This made it easier to conduct the analysis since the more people involved in this analysis the more the decisions would diverge, which is a major drawback of this analysis.

According to the outcome of this congruence analysis, position 2 (expansionary behavior, optimistic scenario) is the most preferred based on judgments of owners and customers. Basically, an expansionary behavior is chosen in order to increase the investments and thus face the competition in the market. Also, insights from the World Outlook and Turkish Industry reports in Chapter 3 show that the gypsum market potential is increasing, which makes the optimistic scenario more likely.

In order to evaluate future positions, the judgments and preferences of Knauf management were also consulted. A meeting with the general manager (Mehmet Özaydın) and assistant manager (Füsun Bakır) was held. Mainly, the discussion was based on the environmental analysis and the objectives of the company. From the

environmental analysis in Chapter 3 it is obvious that there is a market potential for gypsum related products in Turkey as mentioned earlier. In addition, forecasts show that there will be a significant increase in residential construction in Turkey, which indicate that a positive environment in the future is possible. However; it should also be noted that there is the threat of small-scale entrants in gypsum powder industry due to low capital costs; therefore an expansionary behavior will be more suitable in order to strengthen the company against competition. The management also claims that contemporary policies on the economy and energy resources may result in an optimistic scenario. Regarding these, the management also decided that position 2 (expansionary behavior, optimistic scenario) is an appropriate future position for Knauf Turkey.

CHAPTER 5

CONCLUSION

This strategic planning attempt at Knauf Turkey tries to propose a structured approach for the company in order to fulfill its objectives in the Turkish construction sector. The extensive literature on this issue reveals that a regional or local strategy that is customer oriented would be successful. It is also highlighted that there is no one right answer to strategic problems and that various tools and methodologies can be used as long as they define the system completely. Accordingly, this thesis begins the planning approach with an environmental analysis, then positions Knauf in that environment and generates strategic options. Finally, the strategic options are evaluated and a future position for Knauf is proposed. The implementation stage of this strategy is thought to be beyond the limits of the present work.

The methodology of this thesis does not follow a single approach from literature. Instead, it tries to create a specific methodology for Knauf Turkey using different perspectives. Basically, the methodology positions the company in its environment; reveals its weaknesses and strengths; creates scenarios to deal with uncertainty, generates strategic options and behaviors and finally proposes four future positions. Each tool that is defined in literature makes analyses from a certain point of view. In order to completely understand the system (Knauf Turkey), combinations of common tools from strategic planning literature are used, hence extensive analyses on the environmental and capabilities were done. Additionally, we chose to create a strategic position index to position Knauf in its environment and used it like a state vector to show how the business dynamics would change from one position to another. This "position" tool that has been developed in this thesis serves the dual purpose of assessing the likelihood of possible futures and at the same time selecting between alternative strategies according to the assessment made. In Chapter 4, three common tools were used to generate strategic options. Rather than forming a strategy in the end of the analyses, this thesis proposes sets of strategic options and then evaluates these options based on their ability to fulfill company objectives under a given behavior and

scenario. As a result, alternative future positions for Knauf are determined each of which have a different set of strategic options.

It was essential to create such an approach in this thesis because there were certain limitations when forming a strategy for Knauf Turkey. The first is the dependency of Knauf on its German headquarters that puts limits on strategic planning. Knauf Turkey follows the vision and tries to fulfill the mission of its headquarters. In doing so, it makes long-term plans and sets objectives accordingly. Also, the products of Knauf and the industry/sector it operates in are not very flexible. Products are standard among the competitors and also the market structure is mature.

Additionally, there are also operational and environmental differences between Knauf Germany and Knauf Turkey, which should be considered as limitations when forming a strategy. The L/D method used in Chapter 3 clearly illustrates these differences. Mainly, the marketing strategies, facility locations, employee profile and sales structures are different. Hence, the global strategies of Knauf about these issues should be localized in order to fit the environment that Knauf Turkey operates in. Most of the strategic options proposed in Chapter 4 address these issues, trying to propose strategies that fit the environment and the strengthen the system, i.e. Knauf Turkey.

Despite these limitations, an extensive analysis on the environment was done and it shows that there is a significant market potential for gypsum and related products in Turkey. Also the residential construction estimates show that there will be an increase in residential construction. About competition, small entrants are expected to be the new players in the market. There are also the issues of energy, resources and economic stability, which are all discussed in Chapter 3.

The internal analysis for Knauf Turkey revealed company's capabilities and weaknesses. Capabilities of Knauf are identified as logistics experience, quality and variety of products, export strategies and production routine, and the weaknesses are dealer structure, dealer replenishment, production capacity and marketing policies. Through the value network the operations and flows of information and materials can be traced broadly. Combining these two analyses, a current position for Knauf is defined using the strategic position index, and using the outcomes from previous analyses strategic options are determined. These strategic options cover the issues of

logistics, dealership management, operations, facility and capacity investments and marketing strategies.

In order to evaluate these options, the framework of expansionary, risk-averse or do-nothing behaviors and scenario related company objectives are used. The scenarios include three basic points of view: optimistic, moderate and worst case. Thinking that the moderate scenario covers most of the issues for a scenario that is worse than the optimistic scenario, the worst case scenario is not chosen by Knauf family members as an alternative future framework. For expansionary and risk-averse behavior, different sets of options come out; however in the case of do-nothing behavior there are no strategic options since the company preserves its current position.

Among the major weaknesses of Knauf is the dealer structure, which is based more on urban areas compared to the outspread dealer structure of the dealers. An important result from the evaluation of strategic options shows that forming a dealer network is the most outstanding strategic option. Hence, a dealer network model is proposed for Knauf. This model consists of homogenous information flows with regular meetings and common projects and tasks. Further studies should be done about the network structure of dealers since an appropriate model for Knauf can only be defined after an extensive analysis on dealer structure and relations is done.

Using the behaviors under a given scenario four future positions for Knauf Turkey are defined and From these alternatives, Knauf management decided that position 2 (expansionary behavior, optimistic scenario) is the most likely future position.

Overall, this thesis outlines a strategic planning attempt for Knauf Turkey using a specific methodology created for the company. Although the methodology is a specific one, it can be used for other companies and strategic planning approaches as well. Basically, it provides a framework for strategic planning and it can be implemented as it is unless the company objectives are weighted differently. In that case, the evaluation method in tables 17 and 18 would not work properly since we assumed that all the objectives were equally important and hence used a very simple algorithm. Further studies may try to modify the evaluation method and implement this approach in order to observe its drawbacks and advantages in other companies and sectors.

APPENDIX A

Market Potentials for Major Regions

Asia Market Potential

Market Potential for Manufacturing Gypsum Wallboard, Plaster, Plasterboard, Molding, Ornamental Moldings, Statuary, Architectural Plaster Work, and Other Gypsum Products in Asia (million USD): 2006

Table A.1 Asian Market Potential

Country	Latent Demand (million USD)	% of Asia
China	1,956.41	33.74%
Japan	1,325.28	22.85%
India	947.22	16.33%
South Korea	334.02	5.76%
Indonesia	279.94	4.83%
Thailand	176.26	3.04%
Taiwan	166.44	2.87%
Philippines	131.91	2.27%
Malaysia	97.54	1.68%
Bangladesh	87.10	1.50%
Hong Kong	79.45	1.37%
Vietnam	66.32	1.14%
Singapore	48.22	0.83%
Burma	27.28	0.47%
Sri Lanka	26.94	0.46%
Nepal	14.35	0.25%
North Korea	9.06	0.16%
Cambodia	6.86	0.12%
Papua New Guinea	5.17	0.09%
Laos	3.84	0.07%
Macau	3.30	0.06%
Brunei	2.50	0.04%
Mongolia	1.95	0.03%
Bhutan	0.99	0.02%
Maldives	0.26	0.00%
Total	5,798.89	100.00%

Europe Market Potential

Market Potential for Manufacturing Gypsum Wallboard, Plaster, Plasterboard, Molding, Ornamental Moldings, Statuary, Architectural Plaster Work, and Other Gypsum Products in Europe (million USD):2006

Table A.2 European Market Potential

Country	Latent Demand (million USD)	% of Europe
Germany	821.39	17.94%
France	614.65	13.43%
United Kingdom	577.01	12.61%
Italy	539.30	11.78%
Spain	307.32	6.71%
Russia	241.46	5.28%
Netherlands	165.60	3.62%
Poland	140.18	3.06%
Belgium	110.57	2.42%
Switzerland	87.82	1.92%
Austria	86.17	1.88%
Sweden	84.12	1.84%
Ukraine	81.55	1.78%
Greece	77.48	1.69%
Portugal	67.36	1.47%
Denmark	57.73	1.26%
Czech Republic	56.04	1.22%
Romania	55.99	1.22%
Norway	52.57	1.15%
Finland	50.84	1.11%
Hungary	48.92	1.07%
Kazakhstan	37.67	0.82%
Ireland	35.93	0.79%
Belarus	33.60	0.73%
Slovakia	23.37	0.51%
Other	122.83	2.68%
Total	4,577.49	100.00%

North America and the Caribbean Market Potential

Market Potential for Manufacturing Gypsum Wallboard, Plaster, Plasterboard, Molding, Ornamental Moldings, Statuary, Architectural Plaster Work, and Other Gypsum Products in North America & the Caribbean (million USD): 2006

Table A.3 North American and the Caribbean Market Potential

Country	Latent Demand (million USD)	% of North America & C.
United States	4,184.99	91.21%
Canada	330.79	7.21%
Dominican Republic	21.00	0.46%
Puerto Rico	16.53	0.36%
Cuba	8.25	0.18%
Haiti	5.34	0.12%
Trinidad and Tobago	4.80	0.10%
Jamaica	4.06	0.09%
Bahamas	1.92	0.04%
Martinique	1.84	0.04%
Barbados	1.70	0.04%
Guadeloupe	1.55	0.03%
Netherlands Antilles	0.99	0.02%
Bermuda	0.88	0.02%
Aruba	0.85	0.02%
Virgin Islands, US	0.75	0.02%
Greenland	0.46	0.01%
Cayman Islands	0.40	0.01%
St. Lucia	0.29	0.01%
Antigua and Barbuda	0.23	0.00%
Grenada	0.17	0.00%
St. Vincent and the Grenadines	0.14	0.00%
British Virgin Islands	0.13	0.00%
Dominica	0.12	0.00%
St. Kitts and Nevis	0.12	0.00%
Other	0.14	0.00%
Total	4,588.43	100.00%

Middle East Market Potential

Market Potential for Manufacturing Gypsum Wallboard, Plaster, Plasterboard, Molding, Ornamental Moldings, Statuary, Architectural Plaster Work, and Other Gypsum Products in the Middle East (million USD): 2006

Table A.4 Middle East Market Potential

Country	Latent Demand (million USD)	% of the Middle East
Turkey	191.17	25.96%
Pakistan	120.71	16.39%
Saudi Arabia	98.92	13.43%
Iran	87.61	11.90%
Israel	47.42	6.44%
Iraq	25.62	3.48%
Uzbekistan	25.34	3.44%
United Arab Emirates	23.02	3.13%
Syrian Arab Republic	21.65	2.94%
Kuwait	12.62	1.71%
Azerbaijan	10.39	1.41%
Turkmenistan	8.85	1.20%
Afghanistan	8.78	1.19%
Oman	8.38	1.14%
Lebanon	7.65	1.04%
Jordan	7.30	0.99%
Qatar	6.44	0.87%
Yemen	6.20	0.84%
Kyrgyzstan	5.42	0.74%
Bahrain	4.33	0.59%
Armenia	4.28	0.58%
Tajikistan	3.13	0.42%
Palestine	1.25	0.17%
Total	736.47	100.00%

Ability to Satisfy Customer Needs By Quality and Diversity of Products

Table B.1 Knauf and Competitor Gypsum Board Products

KNAUF	LAFARGE DALSAN	ABS	RİGiPS
Flex Alçıpan	Allev beyazı	Alçı plaka	√
Yangına dayanıklı Alçıpan	Allev kırmızısı	Yangına dayanıklı alçı plaka	√
Suya dayanıklı Alçıpan	Allev yeşili	Suya dayanıklı alçı plaka	√
Su+yangına dayanıklı Alçıpan	Allev bordosu	Su ve yangına dayanıklı alçı plaka	√
Herform	X	X	X
Herkül	X	X	Riflex
Karo	Karolev	X	X
Karolam	Karolev	X	X
Akustik	Allev akustik	X	Akustik
Fireboard	X	X	X

Table B.2 Knauf and Competitor Gypsum Powder Products

KNAUF	LAFARGE DALSAN	ABS	RİGiPS
İzogips	Sıvatek	Sıva alçısı	Perlitli sıva alçısı
Jetgips	Alçıtek	M95 makine sıva alçısı	Makine sıva alçısı
Satengips	Satentek	Saten perdah alçısı	saten perdah alçısı
Fugagips	Derztek	ABS derz dolgusu	Derz dolgu alçısı
Yapıgips	Adertek	ABS alçı plaka yapıştırıcısı	√
Kargips	Kartek	Kartonpiyer alçısı	Kartonpiyer alçısı

Table B.3 Knauf and Competitor Accesories

	Knauf Artfix	Almetsan	Baytaş	Lafarge Dalsan	Çelik Pres	Bilgin Metal	Prometal	Güven Saç	Selectron	Başkent Profil	Dekofil	Favori	Dizayn	Asteknik	Vitrulan	ProArt	Mete Panel	Astav Panel	Aspen	Abay	Atlas	İntem	Stoneborn	Metapan
Alçıpan Profili	√	√	√	√	√	√	√	√	√	√	√	√	x	√	x	x	x	x	x	x	x	x	√	x
Sıva & Köşe Profili	√	√	√	√	√	√	√	√	√	√	√	√	x	√	x	x	x	x	x	x	x	x	√	x
T24 Taşıyıcılar	√	x	x	x	x	x	x	x	x	x	x	√	x	x	x	x	√	√	√	√	√	√	√	√
Clip-In Sistemler	√	x	x	x	x	x	x	x	x	x	x	√	x	x	x	x	√	√	√	√	√	√	√	√
Metal Asma Tavan Paneli	√	x	x	x	x	x	x	x	x	x	x	√	x	x	x	x	√	√	√	√	√	√	√	√
Lamel Asma Tavan	√	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	√	x	x	x	x	x	√
Cam Tekstili Duvar Kaplamaları	√	x	x	x	x	x	x	x	x	x	x	x	√	√	√	√	x	x	x	x	x	x	x	x
Aksesuar	√	√	√	√	√	√	√	√	√	x	√	√	x	√	x	x	x	x	x	x	x	x	√	x

Table B.4 Knauf and Competitor Marmorit Products

Çimento Bazlı Hazır sıvalar	X	√	√	X	√	X	X	X	X	√	X
~~Knauf Marmorit~~	**~~Kalekim~~**	**~~Weber-Markem~~**	**~~Entegre~~**	**~~BASF-YKS~~**	**~~Berice~~**	**~~Sika~~**	**~~Capatect~~**	**~~Marshall~~**	**~~Henkel~~**	**~~Tekbau~~**	**~~Vitra~~**
Fayans ve Seramik Uygulama Ürünleri	√	√	√	√	√	√	X	X	√	√	√
Mantolama Sıvaları	√	√	√	X	√	X	√	√	√	√	√

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