# THE OPPORTUNITIES IN AN INDUSTRIAL GOODS MARKET

A STUDY

ON END USERS OF POWDER COATINGS

A THESIS

SUBMITTED TO THE DEPARTMENT OF MANAGEMENT
AND THE GRADUATE SCHOOL OF BUSINESS ADMINISTRATION
OF BILKENT UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION

By
N. SANAL LIMONCUOĞLU

June, 1994

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I certify that I have read this thesis and in my opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Business Administration.

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# ÖZET

TÜRK TOZ BOYA PİYASASINDAKİ OLANAKLAR:
TOZ BOYA KULLANICILARI ÜZERİNE
BİR ARAŞTIRMA

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Bu çalışmanın amacı, Türk toz boya piyasasının potansiyelinin tespiti ve piyasadaki olanakların değerlendirilmesidir. Araştırmanın kapsamında yer alan ikinci bir konu, sonuçların değerlendirilerek piyasaya girmek isteyen bir şirket için olanakların belirlenerek üretim ve pazarlama planının oluşturulmasıdır.

Gerekli bilgilerin biraraya getirilebilmesi için toz boyama makina ve sistemleri satıcıları, hammaddeciler, şu an faaliyette bulunan üreticiler ve toz boya üretim makinaları satıcıları ile karşılıklı görüşmeler yapılmıştır. Bunların yanısıra, piyasanın ihtiyaçlarının ve kullanıcıların problemlerini saptamak için de toz boya kullanıcıları üzerine bir araştırma yapılmıştır.

Sonuçlar, Türk toz boya piyasasının hızla gelişmekte ve ümit vadetmekte olduğunu göstermiştir. Piyasada üreticilerin fiyat ve pazarlama politikalarından kaynaklanan problemler ve piyasanın büyüklüğü karşısında finansal açıdan güçlü bir şirketin piyasaya girebileceği tespit edilmiştir.

Bu sonuçlar ve araştırmalar doğrultusunda piyasaya girebilecek orta ölçekli bir şirket için üretim ve pazarlama ile ilgili tavsiyelerde bulunulmuştur.

# ABSTRACT

THE OPPORTUNITIES IN POWDER COATINGS:

STUDY ON POWDER PAINT USERS

N. SANAL LİMONCUOĞLU

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SUPERVISOR: Asist. Prof. GÜLİZ GER

June, 1994

The aim of this study is the determination of the potential in powder coatings and the opportunities in the market. A second subject that takes part in this study is preparing the production and marketing plans for a new entrant due to the analysis of findings.

In order to gather the needed data, interviews with powder paint application machine and system sellers, raw material suppliers, production machines sellers and current producers were made. Besides, a market survey was made on the users of powder paints to decide about their needs and problems.

Findings illustrate that powder coatings have a growing and promising market in Turkey. Problems resulting from the current producers pricing and marketing policies creates an opportunity for a financially strong company to enter the market.

Taking these findings into account, recommendations were made for a new entrant that is medium sized.

## ACKNOWLEDGMENTS

I gratefully acknowledge patient supervision and helpful comments of Güliz Ger, throughout the preperation of this study.

I have also benefited from suggestions of Erdal Erel and Mehmet Paşa and help of İba Kimya A.Ş., especially Mrs. Dal, Mr. Dal and Mrs. Dalgıç and I would like to express my thanks for their effort in supporting this study.

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# I. INTRODUCTION

Marketing research, defined by American Marketing Association, is the systematic gathering, recording, and analyzing of data about problems relating to the marketing of goods and services.

Business firms' use of marketing research has grown continuously over the past fifty years, since managers painfully learned the cost of market ignorance. Its use has extended now into political and other non business organizations. The modern manager must have knowledge of its methods and how to use it profitably.

Management needs to monitor the larger forces in the marketing environment if it is to keep its products and marketing practices current (Kotler, 1991). Management can learn about changing customer wants, new competitor initiatives, new modes of distribution by developing and maintaining a marketing information system.

The task of research is: to provide and maintain for management the research system, to work with management in such a way as to be able to understand its needs, to help define informational requirements, to specify the filter and generate, through application of professional methodology, meaningful information in the most efficient manner (Cayley, 1968).

Very broadly, the functions of marketing research include description and explanation, prediction, and evaluation. More narrowly, the function of marketing research within a company is to provide the informational and analytical inputs necessary for effective planning of future marketing activity, control of marketing operations in the present, and evaluation of marketing results (Green/Tull/Albaum, 1988).

The **marketing problem** generated this study is the need for determining the powder coatings *market potential, competitors* in the market, the *policies* of these companies, and the *problems* that users face.

These informations were collected in order to clarify what a *new entrant* should do while entering the powder coating market. Both the *production* and the *marketing* side of the powder coatings were taken into consideration when determining the steps of the entrant.

Powder coating market can be considered as new but a very promising market in Turkey. In 1982 there were only few firms using powder paints. Its consumption really started after 1985. I believe that this will be the first research on powder coatings after 1980's in Turkey. In 1980's many companies wanted to enter the market however, they found out that market was not very attractive. Corro-Coat the biggest powder producer in Turkey, attends the seminars held in Europe about the production and developments in powder coatings, and gives the usage rate in the Turkish market less than it is, in order to deter the new entrants from Europe.

In order to collect data, first, secondary sources were searched. The reference lists showing the companies that were sold the powder paint application machines and systems, were taken from the main machine sellers in Turkey.

Second, interviews with Corro Coat sales engineers and Ergun Özarar, Sales Engineer and David Banana, R&D Manager of Pulver A.S. (producer of powder paints) were made in Istanbul, in January 1994.

As well, a survey research with a questionnaire was conducted on the users of powder coatings to learn more about the market.

After, to learn more about the production line of powder paints, a meeting with Buss AG representative, Tek Plastik was made in Ankara, in March. Buss A.G. is a Swedish company that has the biggest share in the sales of powder coatings production lines. In this meeting, the production line, the problems in the production, and the comparisons with different machines were pointed out. Also an interview with Hoechst (raw material supplier for powder paints), was made in Ankara, in April, about the production and powder coatings forecasts in the world.

Results showed that Turkish market had been growing with 50% growth rate for the past two years. Jotun Corro Coat and Pulver two main producers are enjoying the advantages of such a growing market. However, they create problems for the users with their marketing and sales policies that gives the opportunity for a new entrant to enter the market.

After analyzing all the data, recommendations for the new entrant were made. Due to the findings, users combine quality with a foreign company name and reputation. Thus the first recommendation was to work with a licensing partner from Europe. Teknos Winter Oy from Finland had been chosen to be one of the candidates and a visit to Finland was made. Production lines were examined, informations about price, packaging and competitive situation in powder coatings were collected.

To comprise the above issues, this study is organized in seven chapters. Chapter two is an entry to powder coatings, giving the informations about the powder coating market in the world, advantages of powder paint, the market for powder paints, current situation in the world and future expectations about the powder paints. Chapter three is where the methodology and research design are explained. Chapter four introduces the findings of the research based on the interviews conducted by the current producers and survey research. Chapter five discusses the results and makes the recommendations accordingly. This part covers an industry analysis and the steps that the new entrant should take. The final chapter - six - comprises the conclusions and the limitations of the research.

## II. POWDER COATING TECHNOLOGY

Thermosetting powder coatings were first developed in the United States, in the late 1950's. The initial products were merely dry blends of a powdered, pigmented epoxy resin, a small proportion of flow agent and a powdered curing agent. It was not until 1961 that a West German company had the notion of compounding paints continuously by using an extruder. Because all the resin curing agent systems in those days reacted slowly, these efforts proved fairly successful (Corro Coat, 1994).

1962 was the year when thermosetting powder was first applied by electrostatic spraying. This technique is the still-popular one today, as it is the most economical way to paint.

Because the durability of epoxy resins to exterior effects was not sufficient, the studies on the subject have continued and the following Powder Coating Systems have been developed since 1969:

① Epoxy Resin cured with Phenolic Resin
② Epoxy Resin cured with Polyamide
③ Epoxy Resin cured with Polyester Resin
④ Polyester Resin cured with Polyepoxide
⑤ Polyester Resin cured with Polyisocyanate
⑥ Acrylic Resin cured with Polyisocyanate
⑦ Acrylic Resin cured with Polycarboxylic Acid

A rapid and sustained growth is observed in the thermosetting powder paint in the last 10 years, Exhibit 1 - Appendix A. The reason for this growth is not only ecological but also economical and practical.

The most rapid growth has occurred in Germany and Italy as can be seen from Exhibit 2 - Appendix A. On the America side, eighty-five percent of the total production belongs to USA and Canada (Exhibit 3 - Appendix A). The Asian markets showed a substantial growth as well in recent years, with the exception of Japan where the market is very slowly growing.

## II.1 Production of Thermosetting Powder Paint

There are about 200 producers of powder paint in the world (Corro-Coat, 1994). Eighty percent of these producers went into the manufacturing business without any prior experience even in the liquid paint industry. The reason is that the production process of powder paints is different from conventional paints and is rather similar to plastic technique. The interesting point is that when liquid paint producers decided to enter the powder coating sector, they could not cope with the rapid growth of the market. The first ten of these producers hold a 55 % share of the world market.

The world thermoset powder coating production is given in Exhibit 4 - Appendix A and the world production of powder coatings by type are shown in Exhibit 5 - Appendix A.

Briefly, the production of powder coatings is as follows: After the raw materials have been weighed and premixed, they are metered into the kneader or extruder by a volumetric feeder. After discharge the stock is rolled flat, cooled down on cooling belts or rolls, and then crushed into chips. Air classifier mills, then grind the chips into coating powder.

During this process, the product passes through a number of phases in which it undergoes change. When the raw materials are premixed, a relatively homogeneous mix is obtained. The grinding operation converts the irregular chips into a powder with specific particle size and particle size distribution The most important change occurs during extrusion: the premix is fluxed, and the original raw materials are distributed, broken down, blended, dispersed, and of course conveyed. The powder paint production line can be seen in Exhibit 6-Appendix A.

## II.2 Advantages of Thermosetting Powder Paint

Polymer powder coating system started to replace the conventional systems and liquid paints as it has the following advantages:

Powder paint is charged negatively. The paint is sprayed to the piece which is normally loaded positively. As the paint and the pieces are oppositely polarized, they attract each other (Exhibit 7 - Appendix A). On the other hand, negatively charged paint particles will push each other and form a ***homogeneous surface***. Besides, the leftovers of the sprayed powder are collected by the system in order to be used later (nearly *98% low usage*).

The application is *easy* and *cheap*, since no thinner or no other kinds of solvents are used. Furthermore, the mistakes generated from wrong mixing and lack of experience are eliminated. The system is cheaper than the conventional systems.

As it does not consist of very flammable solvents like liquid paints it is *not much flammable*. The energy needed to burn the powder paint is 100 times more than the liquid paints.

The powder coating *reduces the environmental pollution* by 50%. During the oven process, the pollution is great in liquid paints as they consist of large amounts of solvents. That is the reason why they are forbidden in Los Angles in 1967 with Law 66.

The *production rate can be higher* by using powder coating technology. It is also *easy to correct a mistake* by only spraying air. The coating is much easier in products which have corners and different shapes.

When you consider the facts about the *energy usage and the pollution*, the powder coating system has great advantages. As well as these, if the quality and the unit cost of the products are taken into account then the importance of the powder coating system would be obvious.

## II.3 The Market for Powder Coatings

There are essentially five major areas in which powder has scored a success (Corro Coat, 1994).

1. *The major appliance industry:* Refrigerators, deep freezers, tumble dryers, washing machines, cookers, microwave ovens, electric heaters, extraction fans, radiators, deep freezers, dish washers, boilers, food mixers, TV furniture etc.

2. *General metal coatings*: Metal furniture, metal building outdoor, control panels, hospital equipments, laboratory equipments, fire extinguishers, bedsteads, filing cabinets, castings, shelving.

3. *Automotive components industry* : Underhood parts (coil springs, steering assemblies) and exterior parts (wheels, bumpers, mirror and window fittings, wiper blades, trims).

4. *Industrial machinery*

5. *Metal fabrication industry* : Motorcycle and bicycle frames, architectural hardware, luminaire fittings, leisure equipment, garden furniture.

The summary of Western European powder coating demand growth by market application can be seen in Exhibit 8 - Appendix A.

As seen, powder paint is attacking the liquid paints in the market where they are most heavily used. According to these main application areas, powder coatings are used for decorative (90%) and protective/functional (10%) reasons (Hoechst,1994).

The potential power of powder coating can be illustrated with several examples. For instance, the fastest train ever made in France, was painted by powder coating system.

## II.4 Current Situation In Powder Coatings

After twenty years of rapid growth, the usage of powder coating has slowed down in 1991 for the first time. The reason of this slow down is the decrease in consumption and investments due to the industrial crisis which occurred in the second half of year 1990. This extraordinary recession was a surprise for all of the producers and caused a decline in the prices, especially in the Mediterranean countries.

On the other hand, the market in Eastern Europe looks very promising. The reason is the huge pent-up demand in those countries for modern, environmentally sound technology.

Western Europe is pretty quiet at the moment. This is true for the big producers in Italy, England and France - and also in Germany and Switzerland. Over capacity is especially pronounced in Italy and England. Some producers have expanded their capacity by introducing shift work- thus eliminating the need to invest in new medium size or large production lines for the time being.

## II.5 Future of Powder Coatings

As a consequence of the technological development - the improvements in the liquidity and the binding system of the powder paint, the increase in the efficiency of optimum charging and spraying and the ideal distribution of particles - new application areas have emerged for powder coating. Some of these new systems can be summarized as follows :

- *Thin film coating:* This system enables a 30±5 micron thickness in coating.
- *PCM:* In this system, pressed metal plates are painted horizontally and prepared for production.
- *Coil coating:* Thermo plastic powder paints are more efficient in this system. The process may be applied up to a speed of 20 meters/min.
- *Wood and Plastic:* There is continuos investigation on the applicability of powder coating on wooden surfaces. It is expected that in two or three years its application will start.
- *Valspar D 1003 LD:* Special epoxy paints for the coating of the pipes used in the transportation of clean and dirty water, crude petroleum and chemical gases.
- *Valspar D 1003 GL:* Epoxy paints for protecting the irons in the construction against corrosion.
- *Epoxy powder for drinkable water:* Special epoxy paints for equipment used in the transportation and storage of drinkable water.

As a result, powder coatings demand forecast in Western Europe until year 2000 is illustrated in Exhibit 9 - Appendix A.

## III. METHODOLOGY

The research process model used in this study is diagrammed in Figure 1.

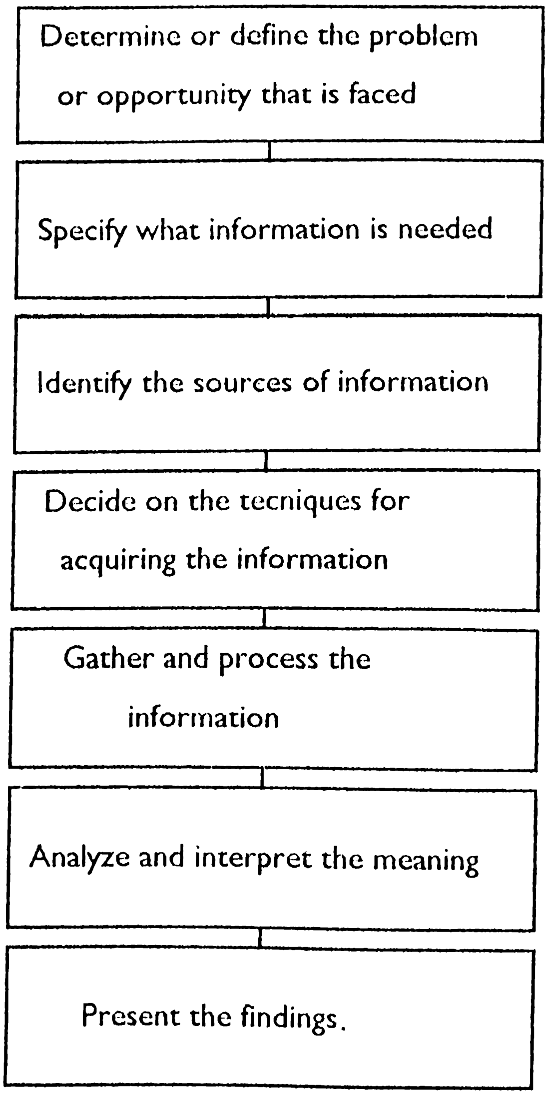


**Figure 1**

Source: Marketing Research - David J. Luck / Ronald S. Rubin

The seven major steps in Figure 1 may be placed in three groups as follows:

- First there is the initiating or planning of a study, which comprises the initial four steps in the model.
- Second, there is the gathering and processing of data.
- Third, there is the interpretation of the data and its presentation.

## III.1 Research And Data Objectives

The marketing research provides information needed to solve a marketing problem. The marketing problem in this study is explained in the introduction part in Chapter I.

To be profitable, applied research must be targeted on the decision-making process (Churchill, 1987). With this study, the potential in the Turkish powder paint industry, the strengths and weaknesses of the current producers and the opportunity for a new company located in Ankara, to enter the powder paint market are tried to be find out. The interpretation of the data, should clarify the actions that a new company should take.

This survey research in powder paints, should relate directly to a company's marketing strategy. Indeed, it has a role to play both in the formulation and execution of the strategy. Every producer of powder paint has a marketing strategy which is likely to revolve the following questions:

What products shall we make: epoxy, epoxy polyester, polyester?

In what quantity, minimum batch size?

At what price?

How should the product be refined - quality, color, texture, etc.?

How should it be promoted?

Who are our target market?

What chance have we of success?

What is this dependent upon?

How should we allocate our budget on research and development, production, sales, marketing, etc.?

## III.2 Data Acquisition Method

After, the research problem is defined and clearly specified in research and data objective part, the research effort turned to data collection. First attempts at data collection should logically focus on secondary data. A good operating rule is to consider a survey akin to surgery-to be used only after other possibilities have been exhausted (Ferber/Verdoorn, 1962)

### III.2.1 Search of Secondary Sources

Secondary information is information that has been collected by persons or agencies for purposes other than the solution of the problem at hand. Secondary data provide a starting point for research and offer the advantages of lower cost and quicker availability (Kotler, 1991).

In this study, the starting point was the reference lists (they show who bought the powder paint application machines and systems) that were taken from the application system sellers such as B.E.S - Gema, Nuri Baylar - Wagner, Esta - Sames and Botersan - Böllhöf. In this way, almost all of the current users in the Turkish market were identified. Second, the addresses, telephones and faxes were searched from TSE (Turkish Standards Institute), ASO (Ankara Industrial Board).

Second, in January, an interview with Corro Coat sales engineers was made in Istanbul, about powder paint in general and the old seminar notes of Corro Coat that was held in Istanbul, in 1.5.1992 were taken. In the seminar notes there were brief informations about powder coating market in the world, advantages of powder paints and the quality control held during the production process. Corro Coat strictly refused to give any information about their own production in Turkey and Turkish powder coating market.

Another interview was conducted with Ergun Özarar, Sales Engineer and David Banana, R&D Manager of Pulver A.S. in Istanbul, in January 1994. They were asked to answer the questions about the powder coating market in Turkey, their production numbers, their capacity, distribution strategy, problems, product mix and forecasts about the sales of Corro Coat and Turkish market as a whole.

After searching for the secondary sources, a survey research with a questionnaire was conducted about the usage rates, used colors and types, problems of users, users buying behavior, application techniques and the expectations of the users from the producers.

A meeting with Buss AG representative, Tek Plastik was made in Ankara, in March. In this meeting, the production line, the problems in the production, and the comparisons with different machines were pointed out. The prices of the machines, necessary personnel to run them. and their incentives in case of a purchase were asked.

An interview with Hoechst people, Enrico Castelli, Export Manager of Hoechst Italy, Gianfranco Vendramin, Technical Engineer and Levent Erener, Chemist was made in Ankara, in April, about the production and powder coatings forecasts in the world. In this seminar like meeting, world powder production by continents and by type, the raw materials and their suppliers, some basic formulations, incentives given in case of purchase, forecasts about the production from the suppliers point of view were explained in detail.

As, users combine quality with a foreign company name and reputation; thus the first recommendation was to work with a licensing partner from Europe. Teknos Winter Oy from Finland had been chosen to be one of the candidates and a visit to Finland was made. Production lines were examined, informations about price, packaging and competitive situation in powder coatings were collected.

### III.2.2 Survey Research

In order to test the accuracy of the secondary data and to learn more about the market from the users side, a survey research had been conducted.

Survey research is the method of collecting information by asking a set of preformulated questions in a predetermined sequence in a structured questionnaire to a sample of individuals drawn so as to be representative of a defined population (Hutton, 1988).

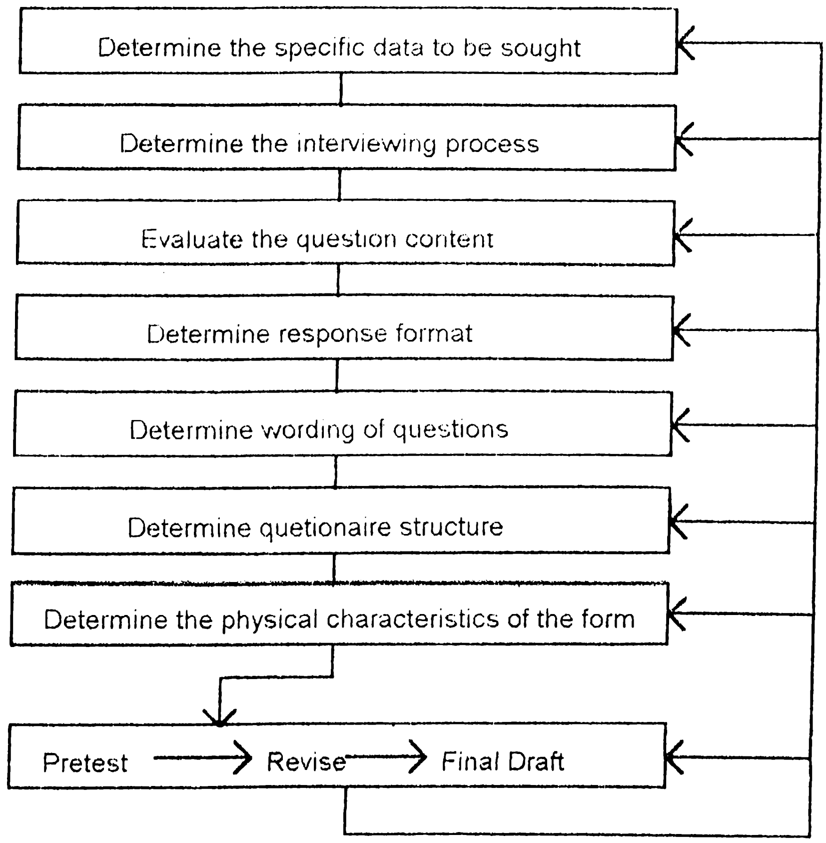


**Figure 2**

Source: Green-Tull-Albaum, 1988

The success of management depends upon its ability to make the right assumptions. Many of these will be about factors over which it has little influence -exchange rates, interest rates, technological change, competitor's marketing activity - and yet the influence of these factors can mean the difference between the riches and the ruin (Hutton, 1988). Many assumptions, however, are made about factors which management can influence, and which have a unique bearing on its own sphere of operations.

This survey research at a strategic level of a powder paint company can held to define the business opportunities to which the corporate strategy should be addressed and identify the appropriate means for realizing the strategic targets. It can also help to assess the degree to which the current companies are successful in executing their strategy and the effectiveness of various tactics adopted, enabling it to revise their strategic plans and the tactical methods for realizing their objectives. The preparation steps of this survey research can be seen in Figure 2.

### III.2.2.1 Survey Method

A questionnaire is simply a formalized schedule to obtain and record specified and relevant information with tolerable accuracy and completeness. In other words, it directs the questioning process and promotes clear and proper recording (Hutton, 1988).

The questionaire used in this study contains five parts. Fist part (Questions 1-6) was designed to assess the company informations such as address, telephone, product and the application system they have. The second part (Questions 7-9), was added to learn the products used by the company and their usage rate. Third part (Questions 11-13) in the questionaire is the problem part in which the problems that the users face such as quality, price, color, after sales service, timely delivery and marketing policy of the producers. Part four (Questions 14-18) is designed to assess the issues that are important to the company. The last part, open ended questions were added to learn the needs of users and they expect extra form the producers. The questionaire is given in Appendix B.

### III.2.2.2 Pretest

In order to understand what is missing and faulty in the questionnaire, a pretest was used on a sample of 25 users. During the interviews, it was understood that questions about pretreatment was missing. Also, almost none of the users had signed the problem part about the paint manufacturers. For that reason, ranking questions were added to understand the perception of quality in the market. A copy of the pretest questionnaire is given in Appendix B.

### III.2.2.3 Communication Method

In considering which of the plausible communication methods to use, more than the foregoing criteria should be considered carefully. Practical considerations of the people or sources of information and such factors as the time required and the costs is needed too (Green/Tull/Albaum, 1988).

The three main categories of media are: Personal, telephone and mail. This study is not limited to using only one of the communications media. As the potential of Ankara is the most important issue for this study, almost all of the users were visited personally. By physically being there, the companies were persuaded to supply answers to the questionaire. Sometimes, when they did not give specific answers, personal observations were made. The questionnaires were send by fax to companies that were not visited in Ankara or in other cities. As well as these, some were mailed to companies that does not have a fax or telephone.

### III.2.2.4 Sample Design

Underlying the use of samples in research projects are one or both of two broad objectives- estimation and testing of hypotheses. Each of these involves making inferences about a population on the basis of information from a sample (Green/Tull/Albaum, 1988).

The precision and accuracy of survey results are affected by the manner in which the sample has been chosen. Consequently, strict attention must be paid to the planning of sample. It must also be recognized that sample planning is really part of the total planning of the survey (Luck/Rubin, 1987).

The first thing that the sample plan must include is a definition of the population to be investigated. In this study, all the users of powder paints are included in the population. However, the important considerations about the population were location and heavy usage. The population of the study is decided to be the possible target market which can be identified as companies located in Ankara, the heavy users and companies located in neighbourhood of Ankara.

After the population had been defined, the decision whether the survey is to be conducted among all members of the population or only a subset of the population was made. Sampling was the choice as, using a sample has two major advantages: speed and timeliness. Another consideration in deciding whether to use sampling is the relative cost and effort that will be involved.

Operationally, sample design is the heart of sample planning. Sampling techniques can be divided into the two broad categories of probability and nonprobability samples (Churchill, 1987). Probability samples are distinguished by the fact that each population element has a known, nonzero chance of being included in the sample. It is not necessary that the probabilities of selection be equal, but only that one can specify the probability with which each element of the population will be included in the sample. With nonprobability samples, on the other hand, there is no way of estimating the probability that any population element will be included in the sample, and thus there is no way of ensuring that the sample is representative of the population (Churchill, 1987).

Sampling procedures used in this study are as follows:

When the study started, current accurate lists of the population elements were unavailable. The reference lists of the machine sellers do not contain telephones or addresses. When researchs in PTT (PostTelephoneTelegraph), TSE (Turkish Standards Institute) and ASO (Ankara Industrial Chamber) catalogues were made, it was observed that most of the lists published were obsolete. For that reason, in Ankara, a few one-stage area sampling (Churchill, 1987) were done. Areas namely, Ostim, Siteler and Organized Industrial Cite in Sincan had been chosen. Since all the users in the selected areas were included in the sample, the procedure is called *one-stage area sampling*.

After the study started, the users that can be reached were used as informants to identify other users in Ankara and other cities which can be considered as *snowball sampling* (Churchill, 1987). As a result, nearly 90% of the users in Ankara were reached. The total companies in the sample were around 160 users and they were tried to be reached by fax, telephone and mail.

## IV. RESULTS

Analysis can be viewed as the ordering, the breaking down into constituent parts, and the manupulating of data to obtain answers to the research questions underlying the research process. The raw data gathered from the research must be compiled, analyzed, and interpreted carefully before their complete meanings can be understood (Green/Tull/Albaum, 1988).

The results gathered from the interviews, meetings and seminar notes explained in the methodology section, in Chapter III (III.2.1 Search of Secondary Sources) are illustrated under the name of "Results of The Secondary Informations" in the beginning of Chapter IV. Part IV.1 represents the competitive situation in Turkey and some of the data that were taken during the interviews are illustrated in the recommendation part to clarify the steps of a new entrant, in Chapter V.

### IV. 1 Results Of The Secondary Informations

#### Information about the competition in the powder coating market in Turkey

Powder coatings market is a new but a very promising market in Turkey. In 1982, there were only a few firms using powder paint. Its consumption really started after 1985 with the efforts of B.E.S. (powder paint and paint application systems selling company). They started the powder market in Turkey by their successful marketing of powder application systems.

Currently there are three producers of powder paint in Turkey, namely Jotun Corro Coat (JCC), Pulver and Aday (Penta). There are also some companies who are importing powder paint from other countries such as Arsonsisi from Italy and Vedoc from Germany.

### Corro Coat - Jotun

Corro Coat is 100% foreign investment of Jotun S/A-Norway. Jotun started the production of powder paint in Istanbul-Çerkezköy. The company had established all its marketing and production activities based on quality. Corro Coat penetrated the market with its qualified color palette in powder paint and established good relations with the customers in the beginning. The company has a distributor, Lale Boya, for Central Anatolia which takes care of Konya, Kayseri, Eskisehir mainly.

Today, Corro Coat is the market leader in Turkey and Jotun is the fifth in the world in production capacity. Corro Coat sold approximately 300 tons/month currently which is equal to Pulver's 1994 forecast. Corro-Coat has 70% share of Istanbul and Ankara powder paint market. In overall, the company had 55% share in the Turkish powder paint market in 1993 with its sales of approximately 3600 tons.

### Pulver A.S.

| **Years** | **1990** | **1991** | **1992** | **1993** | **1994 (forecasted)** |
|---|---|---|---|---|---|
| **Production (ton/month)** | **25** | **50** | **100** | **200** | **300** |

Pulver is 100% Turkish investment with 3 partners who are managing both the rubber and the powder paint business. The initial business of the investors was natural rubber which is currently the main business. The investment in powder coating had started when the company began to make profits from the rubber business. Initiated with the aim of taking advantage of an idle extruder in the rubber plant, Pulver started the first production of powder paint in Turkey and the company now has a capacity of 600 tons/month.

Today, Pulver has agencies in Izmir, Kayseri, Ankara, Bursa, Gaziantep, Adana where Kayseri and Gaziantep are the most successful ones. Pulver is holding 80% of Kayseri region which is strategically important because some of the heavy-users of powder paint such as heater manufacturers are basically located there. In general, Pulver has a share of approximately 35% in the overall Turkish market.

The problems of Pulver are the low capacity utilization and the lack of enough colors in their production line.

**Aday - Penta A.S.**

Aday started powder paint production upon a contractual agreement with Arçelik to supply its needs. First, the company produced only white color (RAL 9010-9016) but today it is trying to increase the color choices for their customers. In 1994, their target seems to be entering the Ankara market. Currently, Aday increased its share in the Turkish powder paint market to approximately 5%.

The results of the secondary sources indicates that, Pulver, Aday and Arsonsisi is trying to attack Corro Coat to steal market share. Pulver, making an agreement with Balıkçıoğlu, tries to increase its market share in Ankara. However, they faced with the economic crisis in the market when they were starting quite good. Aday is now trying to get market share from the market in Ankara, too. Before its target market was only the heavy users of white colors. Now, improving the quality and becoming more experienced, the company is trying to sell different colors for suitable prices especially to Ankara. Arsonsisi which is perceived as high quality product by the users, have problems as they only import powders from Italy. Due to importation, the company does not have enough stocks of different color and have the problem of timely delivery. However, the target market of Arsonsisi seems to be Izmir and Istanbul.

After giving information about the competitive situation, the results of the survey made on the users of powder paint will be indicated in section IV.2. The results of the survey will give informations about the characteristics of the users, how they perceive the producers and their strategies, their importance ratings about attributes, and their expectations. The results were discussed in Chapter V and recommendations especially about the marketing strategies were made according to these data gathered.

## IV.2 Results Of Survey

The results of the research were grouped based on the variables within the survey and the interviews therefore, the findings of the research are organized and will be discussed in the same manner. The results for all questions and interviews are presented in Appendix C.

In Table 1 - Appendix C, the respondents, their locations and their production and the systems they are currently using are illustrated in order to give informations about the respondents. This table also shows the big competition between Gema and Wagner for the application system sales which results with active marketing to the potential users. Wagner and Gema together sold nearly the 70% of the machines with their successful marketing.

Industrial classification in Table 2 - Appendix C, illustrates 94 companies operating in 21 different industries. White-Good industry, is represented with 11 companies (11.70% of the respondents) and their usage rate for 1994 is 1850 tons which is 50.97% of the total 3629.6 tons. This industry is very attractive for all of the producers because they use only color, RAL 9016 which is one of the cheapest and easiest formulas (Hoechst, 1994). However, the biggest competition in quality and price is in this sector. Most of the companies operating in this industry has the ability to compare the quality factors such as color and film thickness and they have quality control departments in which the results are kept. Pulver could not enter this market successfully as its quality is not comparible with Corro Coat and Aday. Arsonsisi having too many expenses such as transportation, custom taxes and funds can not compete in price. As well as that, they can not keep that much stocks of powders to satisfy the needs of these heavy users.

Second group using powders heavily is job-shops. 21 companies that is 22.34% of the respondents generates a usage of 631 tons which is 17.39% of the total respondent usage. Most of the products they paint are aluminum profiles, metal chairs and ligthing fixtures and some other metal accesories. Before the companies using one color integrated to paint their own products, the job-shop painters were the biggest users of powders; it is still the case in Ankara (Table 8 - Appendix C).

The problem is high entrance in this sector. As the application is easy and the machine sellers help to start up the systems, the competiton increased.

The third group, aluminium profile producers are in real the ones who are forwardly integrated and having a bigger share day by day from the job-shop painters. 7 companies, only 7.44% of all the respondents are expected to use 251 tons. However, still most of the aluminium producers are having their products painted in job-shops. On the other hand, some of the big aluminum profile producers follow a different strategy: They order special colors from powder producers and use only that special color for their profiles. Aluminum profile customers are tighten to one producer in this way as it too hard for the job-shop painters to compete with this big producers with their special color.

From Table 7 - Appendix C, it can be seen that the usage of powders is expected to increase from 2822.52 tons too 3629.6 tons in 1994. This change corresponds to 28.59% increase in total of respondent usage. In section IV.1, Results of The Secondary Informations, it was stated that the growth rate was 50% for the last two years. However, the economic crisis in Turkey affected the powder coatings market in a negative way too. The crisis in white-goods, construction, and automotive industry were the main reasons for this decrease in the growth rate. The decrease is generated also by the decrease in the usage of the suppliers of this industry, especially automotive. None of the users in the automotive industry expect an increase in the usage and even some of them had decreases by 40%.

Although, in Istanbul only 22 companies were reached (it is known that there are more than 100 users in Istanbul), their usage is the largest compared to other cities with 722.4 tons. However, what is interesting in Table 7, is the growth rate

(63.08%) of the market in Ankara which is very high from the total average. When Table 8 in Appendix C is examined, it can be seen that this growth is generated mostly with the White-Good industry and job-shop painters. In 1994, Arçelik started the production of washing machines in Sincan Organized Industrial Cite and as their 1994 forecast is around 60 tons, the white-good industry in Ankara increased its usage more than two times. Also many job-shops were started at the end of 1993. The increased competition decreased the prices and the usage of this sector also increased as many new companies had the opportunity to have their products painted with powder paints.

Tables 3, 4, 5 and 6 in Appendix C are about the problems of the users in Turkey. The most obvious problem is price & credit problem. This results from the pricing policies of the two big producers, acting as a cartel. It is learned that, the companies are publishing price lists for two months in DM. Although the price lists are in foreign currency, they are arranging prices every two months and normally increasing the prices with 1-2%. Before March, the users were given a credit of 45 days for the payment, but now all the users have to pay the invoince amount in advance. It is understood that Lale Boya's (distributor of Corro Coat in Ankara) inflexible marketing policy makes it much harder for the users to buy powder paints.

Color problems and timely delivery problems illustrated in Tables 3 and 4 respectively, generate from the same reason: special colors. When the users order a special color, producers are giving long delivery times such as ten days and also can not produce the same color with same properties in every order.

In Table 9 - Appendix C, the frequency of types used in the market is given. As it can be seen, from 94 respondents 45 are using polyester, 70 using epoxy/polyester, 13 using epoxy and only 7 of them are using PE-F type of powders. This indicates 47.87% of the users are using polyesters, 74.46% of them are using epoxy/polyesters, 13.83% of them are using epoxy and only 7.45% of them are using PE-F type of powder coatings.

Pure epoxy powders are used for especially lighting fixtures, apparatuses, furniture, agricultural and household appliances. The resultant paint with epoxy has excellent mechanical properties and its anticororrosive properties are also good. On outdoor exposure exposure the paint film has tendency towards chalking. Epoxy/Polyester powder is suitable for coating metal industry products such as lighting fixtures, apparatuses, wire gratings, electrical boxes and panels, and white-good industry products. The mechanical and chemical resistance and the anticorrosive properties are almost equal to those of epoxies. On outdoor exposure this powder also has tendency towards chalking. Polyester powder is suitable for product coating within the metal industry for objects that require a weather resistant coating that will not yellow on exposure to heat or ultraviolet light. Examples of use are facade panels, door and window frames, agricultural appliances and other equipment and structures permanently located outdoors (Teknos, 1994). PE-F is a new product developed by Corro Coat especially for facade panels.

When Table 10 - Appendix C is examined, it can be seen that users are pleased with the quality of the powders in the market which is denoted by a 3.64 mean (over "Very Good"). However, the same thing can not be stated for the marketing policy and salesmen of the current producers. Though  the average is 2.98 (nearly

"Good"), there are 31 companies out of 94 who are rating as "Not Good". The percentage of unhappy users is 34.04%.

Table 11 - Appendix C, indicates that the first two important aspects in the market are quality and price. Supplying same color properties in every order is also important as the users are given RAL color cards by the producers. Normally, they expect to receive the same color when they order with a RAL code.

In Table 12, the mean values for the questions about quality and price and marketing policy of the current producers by locations. T-tests were applied with a significance level of 0.1 and no change is calculated among locations for the quality perceptions or price and marketing policies of the current users. However, the lowest means were calculated in Ankara and Kayseri where Lale Boya acts as the distributor of Corro Coat. As well, it is known that Pulver is not even as flexible as Corro Coat in prices which explains the problem in Kayseri.

Table 13, illustrates the attribute importance ratings by the location of the users and a similar T-test with a significance level 0.1 was made. Again there were no change in the attribute ratings by location.

In Table 14, the perceptions about the current producers by the industries are given. The results of the T-Test with a significance level 0.1 illustrates the fact that there are not significant differences among industries. The lowest rating about prices and marketing policy is given by the job-shop painters. This sector requires many color choices, small quantities in orders and the biggest discount. However, the producers are not able to give discounts for orders that are small and variable in colors.

Table 15 - Appendix C, shows the usage rates of the respondents with their locations. Companies using less than 10 tons can be considered as small users whereas, ones using more than 30 tons are heavy users. According to 1994 forecasts of the companies, 49% of the respondents which is 46 of them, are small users and 26.5% of them are medium sized users. 24.5% of the respondents can be classified as heavy users. The survey results also shows that most of the heavy users are quite satisfied with the quality of the current powders in the market. As most of the heavy users are using white colors, they are mostly interested in gloss and film thickness. However, quality perceptions or importance ratings do not show differences according to the usage rates. For instance, although the small companies do not ask for technical service, they believe that it is needed and important.

Some of the words of the users are illustrated in Exhibit 13 - Appendix C. First of all, most of the users are unable to make quality control for the powders they buy as the equipments to make the tests are very expensive. However, they can identify problems such as gloss and adhesion easily by comparing the previous results. In real, it does not matter much even if they find out the problems in the paint as Corro Coat and Pulver is not changing the powder in most of the times. For that reason, some of the companies want the producers to have ISO 9000 or QualiCoat standards. Some other companies prefer to have quality control reports to be given as they can at least know the characteristics of the paints.

As well, companies are unable to supply special colors at a very good quality and on time. They offer long delivery dates for such orders. This problem also generates from the difficulty in the production. Changing colors during production requires a very tough cleaning work and takes long times. For that reason, producers prefer to work similar colors one another and make production plans before the orders.

As also stated in Table 5, price and marketing policy of both Corro Coat and Pulver are very inflexible. Especially, small companies and job-shop painters are complaining. Lale Boya is not giving the product before taking the money when small companies order paints; even not sending the örders to the addresses and expect them to go and take it from its warehouse.

All of the companies were positive about the idea of having a producer located in Ankara. However, they stressed that the paint should have at least the same quality with the current brand names with better pricing policy. Besides, they believe that the profit margin that is taken by the agency will be divided between the producer and the customers. Third, delivery costs and time will nearly be zero for the colors in stock. The biggest expectation from a new entrant is in payment terms. Most of the users prefer one month as the suitable payment term.

# V. DISCUSSIONS & RECOMMENDATIONS

In the light of the results interpreted in Chapter 4, discussions and recommendations are made in this chapter. First, the informations from the secondary sources and the market survey were combined in order to make an industry analysis. After, in the second section of this chapter, recommendations were made for a medium sized company about the ways of entering the market.

In order to determine the entry barriers, the notes from interviews with current producers and production machine sellers were used. Supplier situation was observed in the meeting with Hoechst. The survey research results were used in order to decide about the buyers.

Although the survey results indicate that, the users want new companies to enter the market, the industry analysis indicates the fact that, the new entrant should be financially strong enough to cover up high investment costs such as nearly 2.5 million American Dollars.

## V.1 Industry Analysis

### V.1.1 Entry Barriers :

❶ Economies of Scale: The existence of large and established firms with economies of scale in production deter the enter of new small scaled firms. Since the production machines are quite expensive, a new firm should reach big scales in production. Non existence of small firms expresses this fact.

❷ Brand identification: This creates a barrier by forcing the entrants to spend heavily in order to overcome customer loyalty. Jotun have created a high degree of brand identification as a result of their quality emphasis and color choice in the market.

❸ Switching Costs: are very high since the equipment is highly specialized and expensive.

❹ Capital Requirement: Establishing a medium-scaled plant requires approximately 2.5 million American Dollars. This can be considered as high enough to keep the aspirants from entering the industry especially in this economic situation of Turkey.

❺ Access to Distribution: Apparently, there is no significant barrier for the new entrants to access the distribution channels. As well as that, many companies are eager to become agencies for powder coatings.

### V.1.2 Substitutes:

In the industry, there is a trend toward the growing use of the powder coating as a substitute to liquid paints (Exhibit 10 - Appendix D).

Low unit costs, efficient usage of inputs as well as low energy requirements and pollution enable a quick payback of the initial investments for the usage of powder paint; thus eliminating a opportunity of a substitute for powder paint, in the concerned market. As example, there are no companies using other paints than powder in the white goods industry.

### V.1.3 Suppliers:

The raw material suppliers for the industry are limited in number and the raw material quality is very important in the formulation of the paint. All the raw materials used in the production of powder paints are imported. Some of the suppliers are Hoechst, Shell, Ciba, Dow Chemicals.

Because of the recession in the market of Europe and oppositely the promising market of Turkey, suppliers are trying to be more attractive by offering some color formulas and permissions to use their laboratories. This decreases the bargaining power of the suppliers.

However, there is the threat of integrating forward into the industry's business. The main reason is their high research and development studies in the formulation of the powder paints. Currently, some of the suppliers, such as Hoechst bought some powder paint producer companies in Europe.

### V.1.4 Rivalry Determinants:

❶Industry Growth: is very high at the moment. Besides, the future estimates for the industry growth of powder paint show that a similar growth is expected in the near future, as well.

❷Fixed Costs: create a substantial entry barrier for new entrants who want to compete with Jotun where the investments and storage cost constitute credible amounts. However, for a new medium sized entrant, fixed costs are not really a major deterrent of rivalry.

❸Exit Barriers: Very specialized assets, the experience and the know-how in the operations increase the management's loyalty to this particular business.

### V.1.5 Bargaining Power of Buyers:

Currently, Jotun and Pulver are acting as a cartel in the industry as Aday and importers have very low shares. Their price lists and sales conditions are almost the same. The buyers are quite disturbed from this situation and even some of the small users stopped to use of powder paint.

Last year, users having a usage capacity more than 10 tons/year were classified and offered some credits, however, today they are also expected to pay the invoice in advance.

As this industry serves to completely different segments of buyers such as construction, white goods, automotive, buyers are not expected to integrate backward. Heavy users such as Koç Group and PEG can import their own powders but it is not attractive for these companies. Although Koç Group uses nearly 1000 tons which is 15% of the total market, current producers stresses that they can not try to import or produce every input they have. Stocking costs will be very high as they will have to import in big quantities. Besides, it is known that they are offered very good prices and payment terms by the current producers.

All the above findings reveal the fact that Jotun and Pulver does not have a real competition but an agreement. Barriers are high enough to deter entry, the market growth is very high and the only competition is in capturing the new users.

The demand of the market is having more producers of powder coatings in Turkey. However, this new entrant should produce high quality products at suitable prices. As well as that, it should be very strong financially so that it can offer the credits that the users want.

Big companies in paint industry such as DYO-Sadolin, Marshall-Herberts and AKZO-Kemipol are not attempting to enter the market at the moment. These companies are trying to settle down the relations with their foreign partners. As well as that, AKZO bought Nobel (a very big paint company who also has the production of powder coatings) and Sadolin in Europe. However, Sadolin was the partner of DYO who is the biggest competitor for AKZO in Turkey. For that reason, they can not decide what to do at the moment. But, it is known that Herberts, AKZO having powder coatings productions in Europe may try to enter the powder coatings market in Turkey. Both of the companies have very complicated organizations which takes great time for making decisions. It should also be considered that even after deciding to start the production of powders it takes around one year for the delivery of the machines and building up the factory.

As well as that, new laws about the pollution and environment can increase the growth rate of powder coatings. The pollution decreases 50% when powder paints are used instead of liquid paints.

Today, the customs taxes and funds costs around 20%. After the customs union, the market will be much more attractive both for the producers and importers as the producers are importing all of their raw materials from Europe, too. The producers and importers will be able to lower the prices after the customs union.

The economic situation that Turkey is in, makes it almost impossible to invest for many of the companies although it is a promising market. The investment requirements of nearly 2.5 million dollars (including plant, machinery, know-how) delayed the entrance of new companies till today. Today, the belief in the market is that, sooner or later there will be entries to the market.

## V.2 Recommendations For The New Entrant

As, both the users and producers expect a new entrant (Exhibit 13 - David Banana, Pulver), recommendations seems to be necessary after the analysis of the results made in Chapter IV.

In Exhibit 13, most of the users stated that they prefer to have new companies in the market having good quality and suitable prices. It is believed that both the competition and the bargaining power of the users will increase. As well as that, new color choices and more timely delivery will be possible.

### V.2.1 Location

The market research indicates the fact that the biggest problems for the current producers are in Ankara. These problems are price, marketing policy and delivery problems. In Ankara Corro-Coat has nearly 70% market share and the rest is Pulver's.

Corra-Coat is represented by *Lale Boya* and Pulver is represented by *Balıkçıoğlu* A.S. in Ankara. *Lale Boya* is well-known in the market with its past activities in the liquid industrial paints, but almost none of the current users like the policies of *Lale Boya*. The owner has no flexibility in the payment terms, delivery dates and discount rates, although the current users were used to have these in the past. *Balıkçıoğlu* started as the distributor of Pulver at the end of 1993. However, *Balıkçıoğlu* has many other activities such as manufacturing aluminum profiles, selling cement, manufacturing office furnitures which limits their efforts in marketing powder paint. As well as that, most of the times they do not have enough stocks of powder. There are even some users that did not hear their name in Ankara.

Aday is trying to enter Ankara with only one salesman having no office. He is only distributing some price lists and catalogues.

These are the most important points that makes it possible for the new entrant to start its activities in Ankara. As well as these, strategically important cities Kayseri, Konya and Eskisehir are quite nearer to Ankara than Istanbul. A company located in Ankara will have the advantage of low delivery costs.

Besides, in Chapter I, it was stated that the application of powder paints on wood has been searched by the producers in Europe. If it becomes possible to use powders on wood, the company located in Ankara will enjoy the advantages of being in the centre of the furniture industry.

### V.2.2 Plant and Machinery

During the visits to Pulver and Buss (Tek Plastik), it is understood that for a medium sized manufacturer that targets to improve its capacity in the near future should have a plant with a minimum closed area of 1500 $m^2$. In order to take the advantage of incentives given by the government, it will be very beneficial for the entrant to build up the factory in Organized Industrial Cites.

As stated before in section 1.1 the machinery used in the production of powder paint is as follows: Premixer, extruder, cooling belt, sifter, and grinder.

Best brand name for premixer is Mixaco-Germany which can be seen in Exhibit 11 - Appendix D. Container mixer is complete for the batch mixing of the individual raw material into a homogeneous premix, including two containers and one discharge unit with vibrating motor and gravity tube with in-built level indicator for controlling of the vibrating motor. The price of the premixer with its mixing tanks is approximately 100.000 USD.

The biggest competition in the machinery is in the heart of production: extruder. There are three main manufacturers of extruders namely, Buss, Werner and APV. Buss is using one screw extruders whereas, Werner and APV are using twin screw extruders. Each of these machines employs its own characteristic operating principle.

When it comes to extruders, you start defining by different specifications: extruder type, number of screws, screw diameter, rating main drive and screw configuration.

In case of the twin screw machines, the principle of synchronized, co-rotating screws has been adopted generally. For coating powders the screw is 15 l/d long, which means the length is 15 times the screw diameter. Compared with all of the other extruders, the Buss kneader has a very special motion. Superimposed on the screw's rotation is reciprocating, or back-and-forth, movement. This means that any given point on the screw follows a sinusoidal path. The effect of the special is to make the Buss Kneader much shorter. Kneaders with 7 L/D are now in use for powder coatings.

It is common practice to compare extruders on the basis of size, which means their screw diameter. The different designs of the processing sections yield different screw outside diameters for each extruder system. In other words, a 100 mm Buss kneader is comparable with a 70 mm. twin-screw extruder.

The most important physical phenomena in the extruder are the product flow and shear.

Shear stress depends on the speed with which two surfaces move past each other and the product - filled gap between the surfaces. The shear stress is the product of dynamic viscosity and shear rate. The shear stress in a twin-screw extruder takes place between the screws and the smallest section of the line shape. The greater part of the shear produced in the Buss kneader comes from the vertical gap between the kneading flight and the stationary kneading tooth.

If we compare thermal control systems of different extruders we find that Buss kneader use water as the sole heat transfer medium in the processing section. In the case of the twin-screw extruders, electric heating elements and jackets are used.

The market shares of the extruder in the market is as follows:

| | |
|---|---|
| Buss | 55% |
| Werner | 28% |
| APV | 17% |

Werner extruders are the most expensive ones in the market whereas, APV is the cheapest. However, the price difference is not big enough to choose APV to Buss extruders due to quality aspects.

Jotun and Pulver are using Buss kneaders in their plants. One other important reason other than design issues is that, Buss has a representative in Turkey, Tek Plastik, who can give after sales service effectively.

The proposition for the new entrant is to buy at least one PLK 70 which can produce nearly 800 tons per year. However, it is advised by the raw material suppliers and machine sellers to have at least two production lines to overcome the color changing problems during the production.

Mostly, the extruders are supplied with the cooling belt and the sifter integrated together. The photo of the PLK70 Buss extruder and the technical data are given in Exhibit 6 - Appendix A.

Another important machinery in the production line is grinder combined with a cyclone classifier. The best grinder in the market is ACM Mikropull /Germany.

The continuos optimization of conventional processes and manifold requirements from new applications have entailed special demands with regard to the particle size distribution of powder coatings (K. H. Schwarmborn, Grinders, 1991).

Narrow particle size distributions with sharp top size limitation at 60-120 microns and reduced fines fraction below 5-9 microns become more and more important for the quality of paint powders.

The combination of CYCLONE CLASSIFIER and MIKRO ACM grinding system forms a new powder handling process, which not only allows for economic production of steep particle size distributions with reduced fine fraction, but also for efficient fines removal for most narrow distributions.

According to the capacity factors given in Exhibit 12 - Appendix D, ACM 25 can be used with PLK 70 Buss extruders. ACM 25 has a price of approximately 200.000 DM.

As a result one complete production line designed with a PLK 70 will cost around 550.000 USD. The delivery dates usually given are around 6 months.

The equipments used in the laboratory of a powder paint company are as follows: Sieving Equipments, Jel Test Machine, $60^0$ Glossmeter, Thickness Test Machine,

Impact Tester, Conical Bending, Cupping Tester, Cross cut blades, Hardness Tester, Precision Microscope. These equipments' total cost is around 20.000 USD (FOB prices).

### V.2.3 Human Resources

As the production line of powder coatings is highly automated, only three workers are enough for the control of the machinery. One for weighing and preparation of the mixture, one for the control of the extruder and one for the bagging (Teknos, 1994).

For the laboratory and quality control department, one chemical engineer, one chemist and an experienced laborant are generally enough (Teknos,1994).

Management and accounting organizations are dependent upon the new comers current organization.

### V.2.4 Marketing Plan

With the applied market research, sales and market share analysis, product awareness and attributes, purchase rates, distribution, pricing, competitive analysis are put forward. In this section, designing marketing plan that takes into account competitor's strategies given in section IV.1, changing stages of the product life cycle stated in Chapter II, and opportunities and challanges illustrated in Chapter IV will be proposed.

The perception map for the current producers, according to the results presented in Chapter IV and due to ratings in Table 10- Appendix C, is shown in Figure 3.

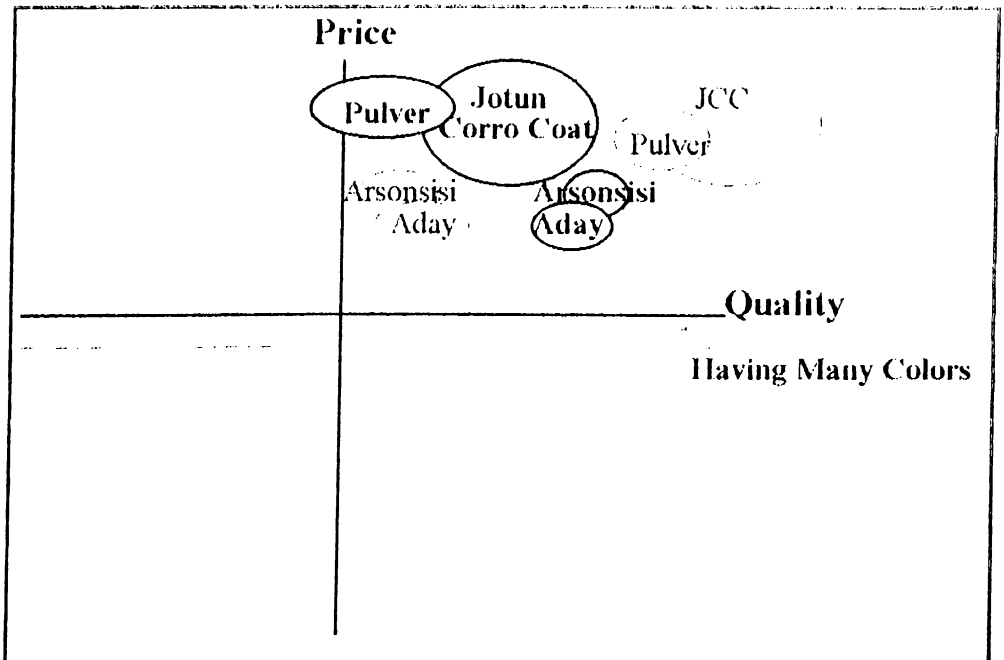


**Figure 3**

As presented in Exhibit 13, customers believe that foreign brand names are more qualified. As well, they prefer Corro Coat most of the times as they know that it is a very big company in all over the world.

As well, customers stress that they will start to work with a new entrant if and only if it has the same quality with the current producers. These all show that having a strong know-how and support from a foreign company is essential for the new entrant. Besides, in the powder coating business, success depends on good formulas and experience. Knowing that the delivery of the production machines are too long (6-7 months), it is adviced that the company should make a licencing agreement with a foreign company.

Preferably, the licencing partner should be a strong company who is competing successfully with Corro-Coat in the European Market. As well as that, it is proposed that the new company or at least the new entrant should have ISO 9000 quality standards. Some of the users are searching for ISO 9000 and QualiCoat standards for powder coatings as can be seen from Exhibit 13 - Appendix C. Then, the entrant should import some powders from the licencing partner and should start with the sales and promotion of the product before the production. It will help the company to gain experience in the market and to learn more about the customers. Besides, entering the market with a high quality product will improve the image of the company for the future. In the future according to the agreement made with the licencing partner, the powder paint can be sold with the same brand name and in this way the image of high quality will continue in the market.

The marketing plan for the new entrant is prepared and given in Figure 5. When preparing this marketing plan, two possible areas that the new entrant can operate were identified according to the results of the survey (Figure 4). As stated in Exhibit 13, low quality products have no chance in the market.

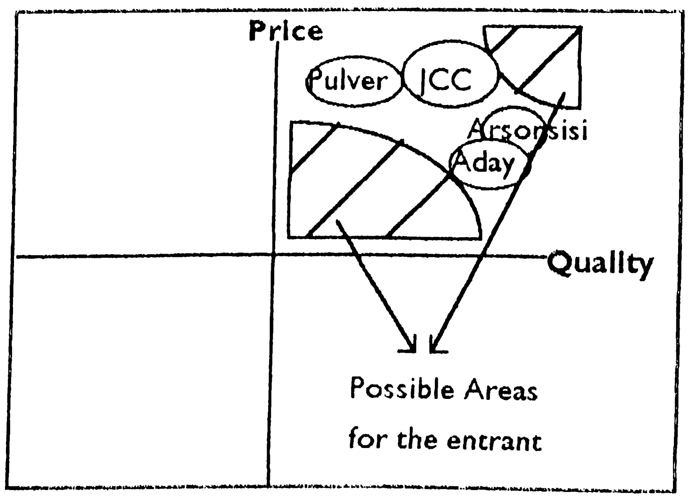


**Figure 4**

One choice can be very high prices with top quality products. This strategy can be followed by companies that have very good reputation in Turkey and strong distribution channels such as Akzo-Kemipol or Herberts-Marshall. The reason is the foreign partners' experience in the European market and good reputation of the Turkish companies in the paint industry.


**Figure 5**

A second choice can be having the same quality with Corro Coat but offering better prices. This strategy can be followed by a medium sized company who will enter the market slowly due to abilities. It will possibly take time to arrange the distribution channels. As well, a medium sized company will have financial difficulties if it tries to capture a very big market share in a short time. Even a medium sized capacity with a production rate of 1000 tons per year costs around 2.5 million American Dollars.

For that reason, considering the needs of users for a cheaper but qualified product, the second strategy is taken into account in this study. The marketing plan will start with the forecast of the sales. The second step is to consider the target market that the proposed amount of powders can be sold. Third the marketing objectives and strategies to reach these objectives will be put forward. In the last part of the marketing plan, the marketing mix of tools for implementation will be clarified.

### V.2.4.1 Sales Objectives

When you begin writing a marketing plan, the first task is setting sales objectives. This is the most complicated and important steps in preparing an effective marketing plan.

Sales objectives are self-defining in that they represent projected levels of goods or services to be sold. Setting sales objectives is critical because it sets the tone of the marketing plan. Everything that follows in the plan is designed to meet the sales objectives-from determining the size of the target market and establishing marketing objectives, to determining the amount of advertising and promotion money to be budgeted, to the actual hiring of marketing and sales personnel, to the number and kinds of distribution channels/stores utilized, and very importantly, to the amount of product produced or inventoried (Hiebing, Cooper, 1990).

Sales objectives must be challenging and attainable, time specific, and measurable. Both quantitative and qualitative factors must be taken into consideration in the development of sales objectives.

Quantitative factors are sales and share trends, market sales, market share trends, size and trend of target market, budget, profit and pricing considerations.

Qualitative factors are economic considerations, competition, product's life cycle, mission of the organization, marketing plan expectation.

While preparing the three year projections for the new entrant, it is proposed that the new entrant should start importing powders from licencing partner; latest July. In 1995, it is proposed that the company should start the production. Selling the powder, gaining experiences and developing good relations with the customers will provide a good basis for the company during the production years.

As there are no reliable data to calculate the sales in the past three years, an average price per kilo is calculated. As well as that the price increase policy of the current producers were taken into account.

Due to economic crisis in 1994 and the results of the survey, the growth rate will not be able to reach 45%, however, it will be around 25-30% (Table 7 - Appendix C). An unexpected boom in 1996 (which is not aken into consideration in the report) can result from a new powder which can be applied to wood. If this occurs, the new entrant located in Ankara will take the advantage of being in the center of furniture industry.

*Sales Objectives: Macro Method*

| | Market Sales Volume | | | | Company Share Percent of Market | | | |
|---|---|---|---|---|---|---|---|---|
| | MillionDM. | Percent Change Previous Year | Sales in Tons | Percent Change Previous Year | DM | Percent Point Change from Previous Year | Tons | Percent Point Change from the previous year |
| **Previous 3 Years** | | | | | | | | |
| 1991 | 21.50 | ? | 2950 | ? | - | - | - | - |
| 1992 | 34.83 | 62% | 4300 | 45.76% | - | - | - | - |
| 1993 | 56.71 | 62.82% | 6300 | 46.50% | - | - | - | - |
| **Projec. Next 3 Years** | | | | | | | | |
| 1994 | 86.625 | 52.75% | 7875 | 25% | 2.2% | - | 2.5396% | - |
| 1995 | 124.89 | 44.17% | 9607 | 22% | 9.5% | 7.3 | 10% | 7.5% |
| 1996 | 174.460 | 39.69% | 12200 | 27% | 11.7% | 2.2 | 12% | 2.0% |

**Three Year Sales Projection for Company**

| Year | Market Sales Volume M. DM. | Comp. Share % of Market | Comp. Sales M. DM. | Market Sales Volume in Tons | Comp. Unit Share % | Comp. Unit Sales in Tons |
|---|---|---|---|---|---|---|
| 1994 | 86.625 | 2.2% | 1.90575 | 7875 | 2.5396% | 200 |
| 1995 | 124.89 | 9.5 | 11.8645 | 9607 | 10 | 960 |
| 1996 | 174.460 | 11.7 | 20.4118 | 12200 | 12 | 1464 |

After 1995, the company is advised to apply inside micro approach to set the sales objectives. Having reviewed the broad macro outside approach, the company should review its own organization's sales history. Worksheets for top and bottom sales forecasting to apply the Micro method are provided in Appendix D.

The sales objectives will most likely to be revised more than once as the marketing plan is written. The company may uncover greater than expected sales potential among a target market. Or, the company may determine that it does not have the necessary capital, there is not enough consumer demand, there is greater competition than expected. which could all negatively affect the estimated sales objectives.

Once the marketing plan is written, it is wise to keep the sales objectives current. Review sales objectives at two months, five months and eight months into the marketing plan year in order to adjust the sales objectives for the second, third, and fourth quarters of the fiscal year.

### V.2.4.2 Target Market

A company that decides to operate in industrial market recognizes that it can not serve all customers in the market. The customers are too numerous, dispersed, and varied in their buying requirements. Some competitors will be in a better position to serve particular customer segments of that market. The company should instead of competing everywhere, often against superior odds, needs to identify the most attractive market segments that it can serve effectively.

The heart of modern strategic marketing can be described as STP marketing - namely, *segmenting, targetting, and positioning* (Marketing Management, Kotler, 1991).

Companies are increasingly embracing target marketing. Target marketing helps sellers identify marketing opportunities better. The sellers can develop the right offer for each target market. They can adjust their prices, distribution channels, and advertising to reach the target market efficiently (Kotler, 1991).

Target marketing calls for three major steps. The first is *market segmentation,* the act of dividing a market into distict groups of buyers who might require seperate products and/or marketing mixes. The second step is market targeting, the act of developing measures of segment attractiveness and selecting one or more market segments to enter. The third step is product positioning, the act of establishing a viable competitive positioning of the firm and its offer in each target market.

While a company's sales profits are derived from sales, sales are totally dependent on purchasers and users of the product. In effect, the company exists because of the customers it chooses to serve. It is essential to have a complete understanding of who the target market is and how best to fulfill their needs because it is the key to all that follows in the marketing plan.

Industrial markets can be segmented using variables such as geography, benefits sought, and usage rate. Yet there are also some other variables given as:

| | |
|---|---|
| Demographic<br>*Industry<br>*Company size<br>*Location | Operating Variables<br>*Technology<br>*User status<br>*Customer capabilities |
| Purchasing Approaches<br>*Purchasing-function Org.<br>*Power structure<br>*Existing relations<br>*Purchase policies<br>*Purchasing criteria | Situational Factors<br>*Urgency<br>*Specific Application<br>*Size of order |
| Personal Characteristics<br>*Buyer-seller similarity<br>*Attitudes toward risk<br>*Loyalty | |

Within a chosen target industry, a company can further segment by customer size. The company might set up separate programs for dealing with large and small customers. As well, within a certain target industry and customer size, the company can segment by purchase criteria.

In general, industrial companies do not focus on one segmentation variable but generally apply multiattribute segmentation.

In this study, the new entrant located in Ankara is suggested to select a number of segments, each of which is objectively attractive and matches the firm's objectives and resources. This strategy of multisegment coverage has the advantage over single-segment coverage of diversifying the firm's risk. Even if one segment becomes unattractive, the firm can continue to earn money in other segments.

The heavy usage of powder coatings is valid in white goods industry as can be seen from the Table 2 - Appendix C. However, most of the users in the white-goods industry apply very strict rules before the purchase decision. For example, Koç

Group first takes samples and makes some test in its laboratories in Istanbul. If the test results are good, the group laboratory advises the factories to buy that brand. First, Arçelik in Eskisehir buys as it has small testing units also. If the results generated from this usage are good, they inform Istanbul laboratories about the results and after, every company can buy powder with that brand. But, seperate companies in the group always have the right to chose in between the brands that passes these tests. It is understood that Pulver powders could not pass the tests as non of the members of Koç Group is using Pulver. As well as that the easiest and almost the cheapest production of powder is the white color and the biggest price competition is in this industry. These kinds of users -one color heavy usage- are the most attractive segment of the industry that can be taken into account during the production period.

Other heavy user groups are aluminium profile and job-shop painters. The problem with these groups is that they prefer producers which have many color choices and color stocks available.

When the consideration is location, there are users in many cities all over Turkey; see Table 7 - Appendix C. However, the cities that are strategically important due to user status are Istanbul, Ankara, Kayseri, Konya, Eskisehir, Bursa, Izmir. On the other hand, PEG-Profilo is located in Tekirdag but its usage is more than all Ankara. For that reason, segmentation only according to location is very hard.

Due to rating results in Table 11 - Appendix C, it is understood that many of the companies who apply powder coatings in their production lines made this choice thanks to the surface quality. For that reason, almost all of the users signed the highest rating for quality question. It is also learned that, producers currently can not find customers for their second quality powders even for very low prices.

Other than quality there are two other aspects that are important in the powder coatings industry: available number of colors and price. Corro Coat and Pulver has around 50 colors in Epoxy/Polyester type and more than 100 colors in Polyester type. The reason they have more colors in polyester can be explained by the usage of aluminium profile painters and job-shop painters. Most of the users (70.1%) that answered the questionaire signed "Extremely Important" or "Very Important" for the price of the powder coatings. In 1994, Corro Coat and Pulver left competing in between and prepared almost the same price lists. The prices raised significantly at the end of 1993. First the companies changed their TL. prices to German Marks and the expectation was no increase anymore. However, Corro Coat and Pulver made two increases during 1994 till July which corresponds nearly to four percent.

While chosing the target market for the new entrant, it should be considered that the entrant will be able start production in nearly eight months after all the decisions are made. However, it is proposed in the study that the entrant should make an agreement with a licencing firm for the production and the import of powder paints. For that reason, a two step targetting is necessary. First targeting will be done for the importing period which will be very costly and timely due to transportation, custom taxes and funds. The costs result with a nearly 20% increase in prices and the minimum delivery from Europe will be around 30 days including the production time.

Thus, it is almost impossible for a proposed medium sized entrant to supply the biggest users because of tonage problems and big price competition. It will be also impossible to import nearly 150 colors at once. These mean that the importing company will be able to serve a limited market by importing powders.

## Target Market for the Importing Entrant Located in Ankara

### Primary Target Market

Firms that have problems about price and credit policies of the producers.
Firms that use Polyester and Epoxy/Polyester
New users

**Companies**
located in Ankara or near to Ankara
that have problems personally with Lale Boya
possible neighbours, in Ankara Organized Industrial Cite

## Target Market After the Production

### Primary Target Market

Heavy users of certain colors
Firms located in and around Ankara
Paint distributers in different cities.
New users

**Companies**
have usage more than 15 tons/year
using colors: RAL 9010, 9016, 9005 (white good industry)
using special/textured colors
that act as agencies in different cities

The reason for targeting Ankara and neighbour cities is the location of the new entrant and means illustrated in Table 12 in Appendix C. Companies in Ankara, Kayseri and Konya have problems with the distributor of Corro Coat, Lale Boya. Besides, the market in these cities are growing very fast. As well as these, the new entrant will have a limited capacity at the beginning and it will not have big problems if it actively markets its products in these cities. The capacity proposed for the entrant is nearly the capacity of the total of Ankara, Kayseri and Konya (Tables 7-8).

#### V.2.4.3 Marketing Objectives And Strategies

Marketing objectives and strategies form the foundation of the marketing plan. Marketing objectives describe what needs to be achieved in order to meet the sales goals, and marketing strategies describe how the objectives will be accomplished.

Sales objectives determine qualifiers or parameters of marketing objectives. Sales objectives provide a guideline for determining marketing objectives, as marketing objectives are established specifically to achieve the sales goals. All marketing objectives are quantifiable and measurable. The numerical quantifier used in the marketing objectives must be large enough to assure success of the sales goals (Hiebing/Cooper, 1990).

**Marketing Objective Rationale**

| | |
|---|---|
| Sales Goal | Selling 200 tons of powder till 1995 |
| Target Market | Companies located in Ankara |
| | Companies having Price & Credit problems |
| Total potential target market size | nearly 1000 tons |
| Marketing Goal | 100% new trial |
| Average price of product | 10 DM./kg |
| Total Sales | 200000*10=2000000 DM. |

A marketing strategy is a statement detailing how an individual marketing objective will be achieved. It describes the method for accomplishing the objective. While marketing objectives are specific, quantifiable, and measurable, marketing strategies are descriptive. They explain how the measurable objectives will be met. Markeing strategies serve as a guide to the positioning of yor product. They also serve as reference points for the development of specific marketing mix tool programs in the marketing plan (product, price, distribution, personal selling/operations, promotion, advertising message, advertising media, merchandising, and publicity).

Luckily, powder coating producers do not need to build the new market as powder paint application system sellers are making sales with active marketing. Most of the times, the system sellers are the ones who stresses the advantages of powder paints. As well as that, the users of powder paints forces the others in the same industry with a better quality outlook and performance.

**Competitive Strategies:**

The new entrant can sell qualified powder at lower prices. Another way is to sell with the same price but offering credits such as one month. According to the results of the survey, it is proposed that the entrant to sell the powder with almost the same price list by offering monthly payments. The entrant can offer the users discounts for advance payments.

Due to interviews with the users, they will prefer to buy powder with the same price but with one month payment condition. The heavy users in Ankara are mostly the job-shop painters and the problem they face is as follows: Currently, they buy the powder in advance with DM. They have to finish painting in one week (according to the order) and in return they receive a check for 30 days (Mebosan, 1994). As they have to pay the powder in advance they face financing problems as many of them are small companies. Companies using around 250 tons powder in Ankara face similar problems. Inflexible behavior of Lale Boya in 1993 and the fist half of 1994 pushes the users towards a new comer.

The new entrant might also pursue product innovation to attack the leader's position. Of course the new comer will need help from its licensing partner for this manner.

While attacking the leader, Corro Coat with price-discount strategies, the entrant will also chose to attack Corro Coat where it has problems; Ankara, Konya and Kayseri (Table 12 - Appendix C).

### V.2.4.4 Positioning

The positioning of the new entrant was made in the beginning of the market plan with the help of the perception maps generated from the results of the survey. Deciding the new entrant is a medium sized company the positioning strategy given below is proposed:

Position the new entrant's product as the value alternative to other powders in the market: *At least same quality with Corro Coat*

*Better price policy*

*Wide range of colors including special ones*

### V.2.4.5 Product/Branding/Packaging

The new entrant should start from importing the mostly used types and colors. For that reason the following order is recommended for the start to test the market. The order is prepared according to the answers gathered from the survey research and it is arranged so that it can be imported with one truck (nearly 20 tons).

Brand name for the products should be the one used by the licencing partner. Good reputation of the brand name in Europe can create an advantage. However, the belief in the market is that, if the brand name is foreign than it is qualified, as it is supported by Europe (Exhibit 13 - Appendix C).

**Trial Order:**

| Polyester Colors | Quantity(kg) | Epoxy/Poly. Colors | Quantity |
|---|---|---|---|
| RAL 9010 | 3500 | RAL 9010 | 3500 |
| RAL 9016 | 2500 | RAL 9016 | 2500 |
| RAL 5010 | 200 | RAL 5010 | 200 |
| RAL 5015 | 200 | RAL 5015 | 200 |
| RAL 3002 | 200 | RAL 3002 | 200 |
| RAL 3004 | 200 | RAL 3004 | 200 |
| RAL 7032 | 200 | RAL 7032 | 200 |
| RAL 9005 MATT | 1740 | RAL 9005 MATT | 1500 |
| RAL 9005 GLOSS | 740 | RAL 9005 GLOSS | 740 |
| RAL 5002 | 200 | RAL 1013 | 200 |
| RAL 7035 | 200 | RAL 6001 | 200 |
| RAL 3015 | 200 | RAL 3000 | 200 |

The minimum packaging mostly used in all over the world is 20 kg (Teknos, 1994). Smaller packages are more costly. However, companies are also delivering powders in big bags such as 350 kg. to heavy users.

The current producers in Turkey are also using packages of twenty kilograms. The new entrant can also use this industry standards, but in the first or two orders it will be better if it can arrange small packages of trial powders.

### V.2.4.6 Price

The pricing marketing mix tool is one of the most difficult for which to develop a plan (Hiebing/Cooper,1990).

Refering to Table 5 - Appendix C, the biggest problem that the users are facing is price and credit problem. The new entrant should try to take the advantage as much as possible. The powder market is still growing with new users purchasing the product for the first time, and the product is accepted by the market. While competition is focused primarily on product attributes, pricing variations can be introduced in this phase, along with diversification and differentiation of the product (Hiebing/Cooper, 1990).

During the interviews, it is understood that an entrant offering even the same prices can steal Jotun's market share in Ankara due to inflexibility of Lale Boya (Exhibit 13, Table 5, Table 12). However, it will be more beneficial for the entrant to offer lower prices than Corro Coat and Pulver that, the users will decide to try the new powder easier.

**Pricing Objective:**

*Utilize a lower price relative to Corro Coat and Pulver throughout the country for the importing period to prepare a good background for the production time.*

Other reasons for choosing low price objective can be stated as:
*Expanding the market, allowing new consumers who could not decide to switch to powder paints due to high prices in the market.
*Increasing trial and sales due to price incentives to develop a big market in order to prove the market know-how to the licensing partner.
*Preemption of competitive strategies, helping to steal market share from Corro Coat and Pulver.
Another demand stemming in the market is the need for credit. The users prefer to have a credit of at least fifteen days. This need is becoming more strategic for job-shop painters who can receive payments for the work they do earliest in one month. For that reason another alternative for the new entrant is to apply parity pricing strategy but to give one month credit to the customers.

### V.2.4.7 Distribution

The new company must decide how to sell the production through the distribution channels: Company sales representatives, independent sales representatives, wholesalers/distributors.

In developing the distribution plan, four main areas were addressed:

- Market coverage
- Type of outlet

- Geography
- Timing

**Distribution Objectives:**

*Increase market coverage in Ankara, Eskisehir and Kayseri markets with the entrant's own salesmen for the importing period.*

*After starting production, choose distributors who can have stocks of most of the colors in Izmir, Istanbul, Kayseri and Bursa.*

**Distribution Strategies:**

A pull strategy (marketing directly to consumers) should be chosen at the beginning (Kotler, 1991). The reasons are low profit margin because of low price policy and conducting good personal relations with the users. The weakness of Corra Coat is in distribution in the targeted areas, so the distribution should be the strength of the new entrant.

Till the production starts, the entrant will create a market for its products. Costs generated by customs and transportation will be decreased. As a result, there will be a profit margin for the distributors in different cities.

Another reason to start with the company's own efforts in distribution is the need to build up good relationships with the users. In this case the problems will be identified and solved on time by the company. As well as that, the attributes of the users can be understood better.

It should be considered that problems generated by a bad distributer will result as a bad company image for the entrant.

### V.2.4.8 Personal Selling

Personal selling is a very important tool that incorporates the critical human factor into the marketing mix. It is the one personal and direct link between the target market and the company (Parasuraman,1986).

Although the market is horizontal, with the powder being sold to buyers in many industries, direct selling is chosen during the importing period as both the imported amount and the target market will be quite small compared to total consumption.

Besides, as powder paint is a technical product, the new entrant will need to supervise the training of the sales force and having a degree of control over the selling process. The importance given to technical and after sales service by the users is interpreted in Table 11 and 13 in Appendix C.

**Selling/Operations Objectives**

*Contact each customer in Ankara that is using more than two tons per year and make a sales presentation to the top five companies.*

*Visit top ten companies in Izmir, Istanbul, Kayseri and Konya.*

**Selling/Operations Strategies**

Utilize commission plus salary to encourage aggressive salespeople.

Utilize reviews of the sales staff every three months to improve performance.

Make trials at the users' place to overcome problems and achieve demonstration goals established in the selling objectives.

### V.2.4.9 Promotion

Sales promotion consists of a diverse collection of incentive tools, mostly short-term, designed to stimulate quicker and/or greater purchase of particular products/services by consumers or the trade (Kotler,1991).

**Promotion Objectives:**

*Developing initial trial of the new brand powder in Ankara during the first two months. Achieve the initial trial with a limitation of 20 kg/month. After stimulate incremental purchase.*

**Promotion Strategies:**

Utilize sampling of the products in Ankara for the users having a usage rate more than 10 tons/year.

Distribute promotional materials such as pens and ash trays to companies that buy the product periodically.

Apply low price strategy plus credit opportunity.

### V.2.4.10 Advertising

**Advertising Objective:**

*Informing the market about the new entrant and the new product.*

**Advertising Strategy:**

*Promise:* Relative quality to Corro Coat with better sales conditions

*Support for this promise:* The reputation of the licensing partner and the new entrant.

*Key target market:* Users that have price and credit problems

*Rationale:* Many companies have price problems thanks to high prices and inflexible sales conditions of the current producers as can be seen from Table 5 - Appendix C.

**Advertising Media Strategy:**

*Media Mix:* Use the following magazines for selective reach to the chemistry industry.

Use frequency mailings to merchandise the new product.

*Specific use of each medium:*

Chemist - The Magazine of Industrial Chemistry, Machinery, Device, Equipments with Chemical Products
Half page colorful advertisement stressing the advertising strategy.

Nalburiye - Erem Ltd. Sti.
Full page colorful advertisement informing about the product and the entrant.

Scheduling approach is proposed to be pulsing schedules, run in a continuous on/off pattern. Nalburiye and Chemist are published every two months. At the beginning of importing period, it is advised that the company should give adds to both of the magazines. This advertisements should be prepared before the end of July so that they can be ready for the July-August numbers of the magazines. As it is the construction period in summer months, the usage of powder paints increase in the aluminum industry. For that reason it is advised that the entrant should give adds also for the September-October numbers of the magazines.

A full page, colorful advertisement in Nalburiye costs 20 million TL including the preparation costs (Nalburiye,1994). Nalburiye offers also one or two pages of a news about the entrant and the licensing partner in the same magazine. Half-page colorful advertisement in Chemist costs around 7 million TL (Chemist,1994).

### V.2.4.11 Merchandising

Merchandising is the method used to reinforce advertising messages and communicate product information and promotions through nonmass communication vehicles. Merchandising is a way to make a visual or written statement about your company through a different environment that paid media with or without one-on-one personal communication. Merchandising includes brochures, sell sheets, product displays, video presentations, banners, posters or any other tools that can be used to communicate product attributes, positioning, pricing, or promotion information through nonmedia vehicles (Hiebing/Cooper, 1990).

**Merchandising Objectives:**

*Distribute brochures, sell sheets and technical instructions to guide the sales visit and to serve as a leave behind for the users before the distribution of the products starts.*

**Merchandising Strategies:**

Use the personal sales force and direct mailing to deliver the printed materials to users.

Send many brochures to machine sellers as they also distribute catalogues of the producers when the potential and new customers ask for.

### V.2.4.12 Publicity

Publicity is non paid media communication which helps build target market awareness and positively affects attitudes for the product or the company (Varadarajan/Menon, 1988).

**Publicity Objectives:**

*At a minimum obtain coverage from Nalburiye and Chemist two times in a year.*

**Publicity Strategies:**

Prepare a news release about the licensing company and its entrance to the market to be delivered to Nalburiye and Chemist after the sales start.

Prepare a seminar in Ankara inviting all the users in Ankara and some other main users in Turkey. The users would like to have seminars to have more information about the developments and the technical aspects of the powder paints (Exhibit 13 - Appendix C).

Prepare releases about the technical and market developments in the powder paints once a year as the users want (Exhibit 13 - Appendix C).

## VI. CONCLUSIONS AND LIMITATIONS

This work can be classified as a study that can help any company in the introduction phase of a new product. The study gives the steps that the company will take before entering to a market, such as marketing research and marketing plan and explains every step in details.

This study can also be considered a pioneer in researching the opportunities in Turkish powder coatings market. It explores the users problems, needs and expectations and the recommendations for a new, medium sized entrant. The work can be a starting point for a company that is trying to enter the powder coating market.

Concerning the new entrant, this work can give idea about the history, production and marketing of the powder coatings. The problems of the users with current producers and their expectations from a new company can be considered as the opportunities for the entrant.

As for the current producers, this study can help them to evaluate and review their strategies. It also offers information about the competitive situation in the Turkish market but, this information is limited to forecasts of Pulver and Hoechst. The production or sale numbers of Corro Coat, Aday and Arsonsisi could not be reached.

However, the study has some other limitations too. The market research and the marketing plan were prepared for a medium sized company that will be located in

Ankara. For that reason, the research was focused mainly on the users in Ankara and the heavy users. Almost 90% of the users in Ankara and 60% of the heavy users were reached with this study. On the other hand, the response rate of companies located in Istanbul, Konya and Kayseri is very low. Therefore, the findings about these locations as well as the interpretations cannot be generalized for all the companies in those locations.

As a result of the presented problems that faced the actual research, it seems that personal visits obtain better feedback from the users. The users that were interviewed were forced to give answers by being physically there. For that reason, it is recommended to conduct visits to cities namely Istanbul, Izmir, Konya and Kayseri, in a similar study covering all Turkey. Besides, being unable to visit all the users, their ideas about the current producers and possible reactions to a new entrant could not be clarified.

Findings suggest that powder coating market is a growing and promising market in Turkey. The usage rates of the current companies are increasing as well as the addition of the new users. The biggest problem in the market is pricing policies of Corro Coat and Pulver. Both companies have German Mark price lists which have quite high prices. Another problem is the payment terms, as none of the companies in the market offer credits to the users. Penta with low production capacity and Arsonsisi with low importing power can not compete with these two producers. As well as these, Ankara market is growing very fast and it is very attractive at the moment. Companies that are located in cities such as Kayseri, Konya and Eskisehir are buying their products from the distributors. Of course, an extra margin is put on powders in order to cover the expenses and profit of the distributors in these cities.

The distributors can not supply necessary technical service for the customers as they do not have enough educated personnel.

Most of the users prefer to have a new and reliable firm entering the market. Even Pulver R&D manager states that there will be an entrant in 1994 or latest 1995. For that reason, the points mentioned above can be considered as opportunities for a new entrant. A company having a good reputation in the paint market and having a good licensing partner can capture market share in the powder coatings market. The new entrant should produce good quality products; if possible with ISO 9000, with a suitable pricing policy. The new entrant should be more flexible in payment terms in order to build up good relations with the customers. At the beginning, it is adviced that the company should apply personal sales and direct servicing instead of using distributors.

Powder coatings market will continue growing as it is more economic, and environmental friendly. High quality with easier application makes powder coatings the paint of the future. In the next years, both the users and the producers will enjoy the advantages of being in this industry.

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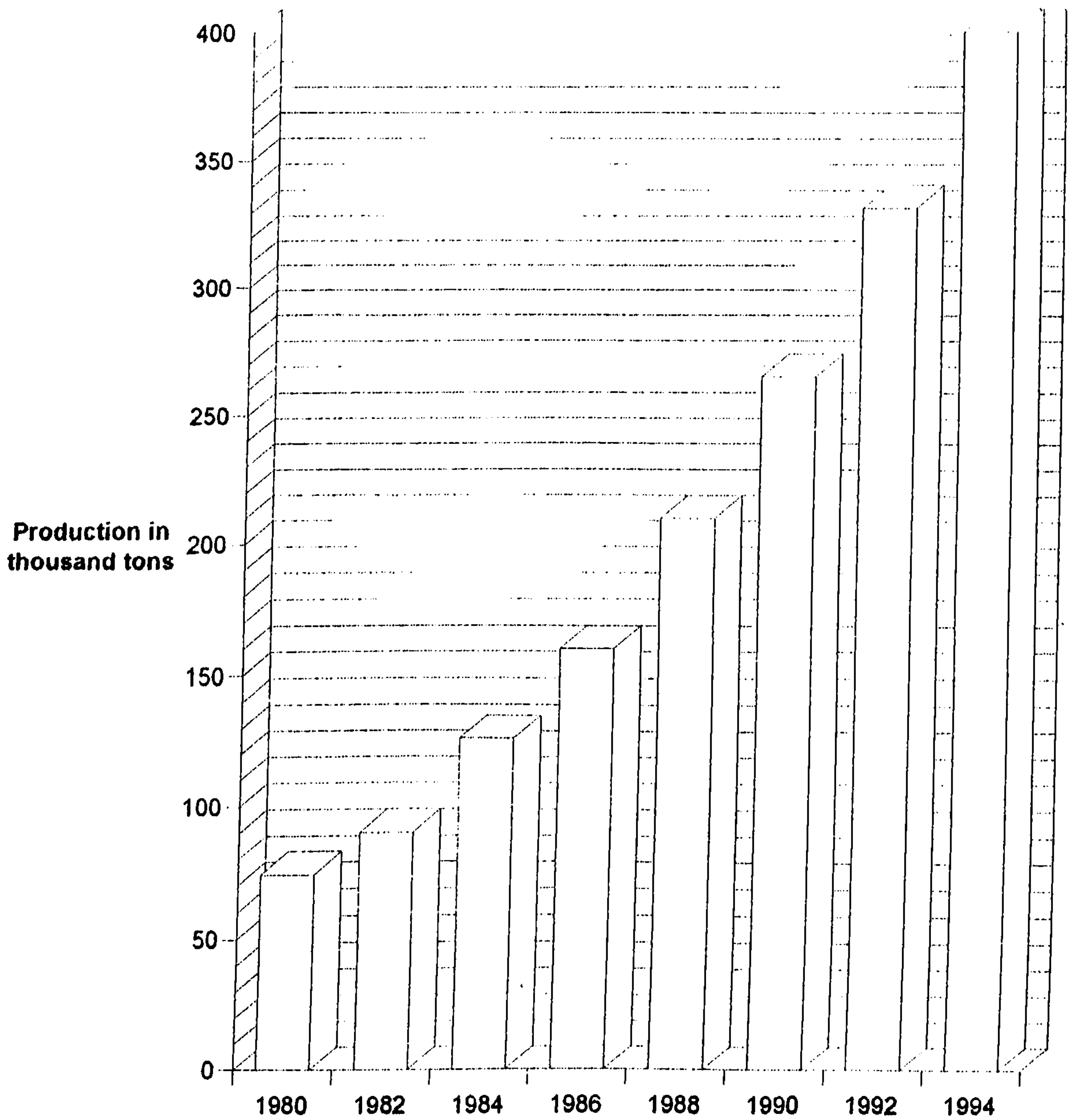
# APPENDIX A

## POWDER COATINGS INDUSTRY

### Exhibits

Exhibit 1

## World Powder Coating Market 1980-1994



## Powder Coating Production 1992, Europe

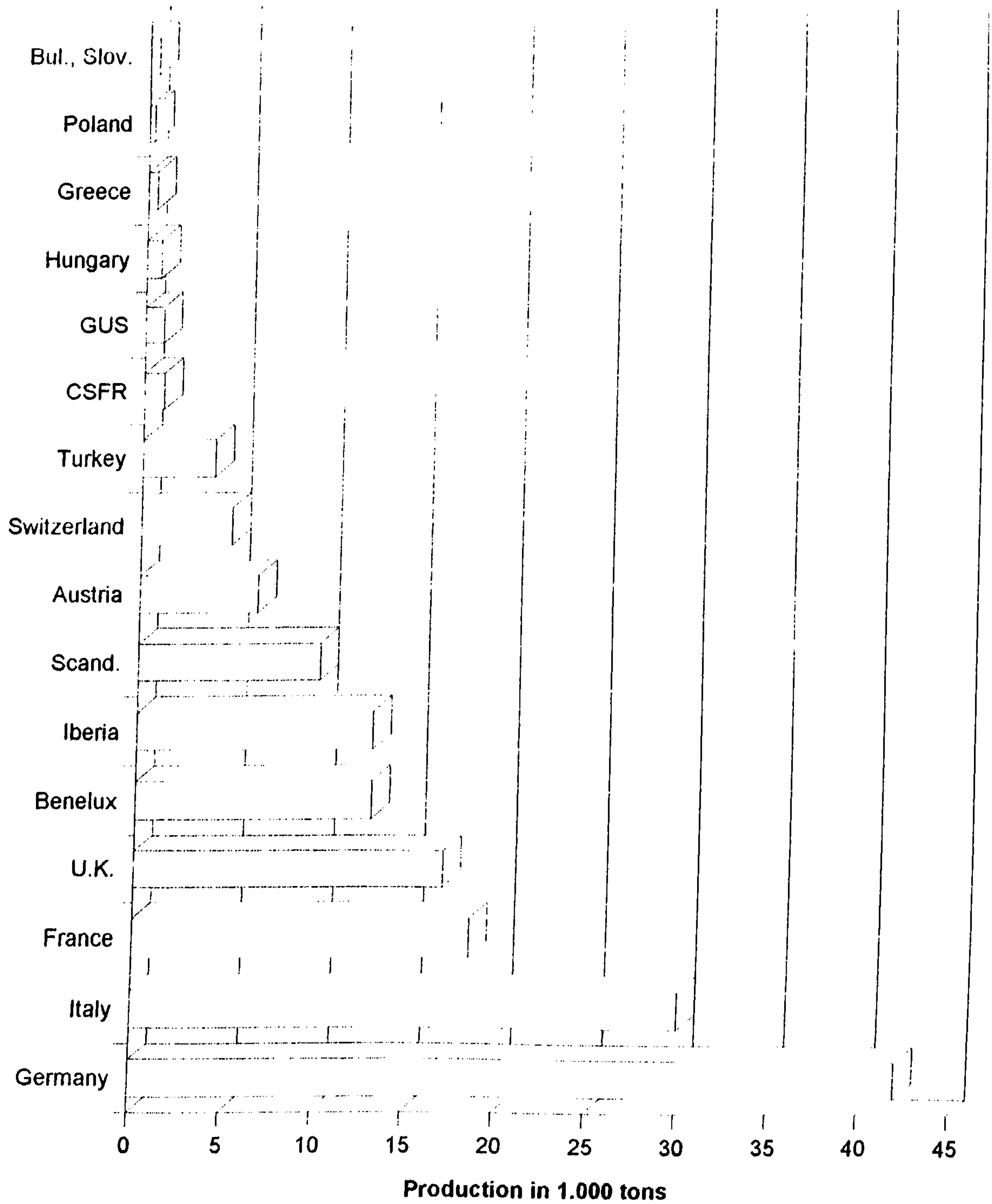
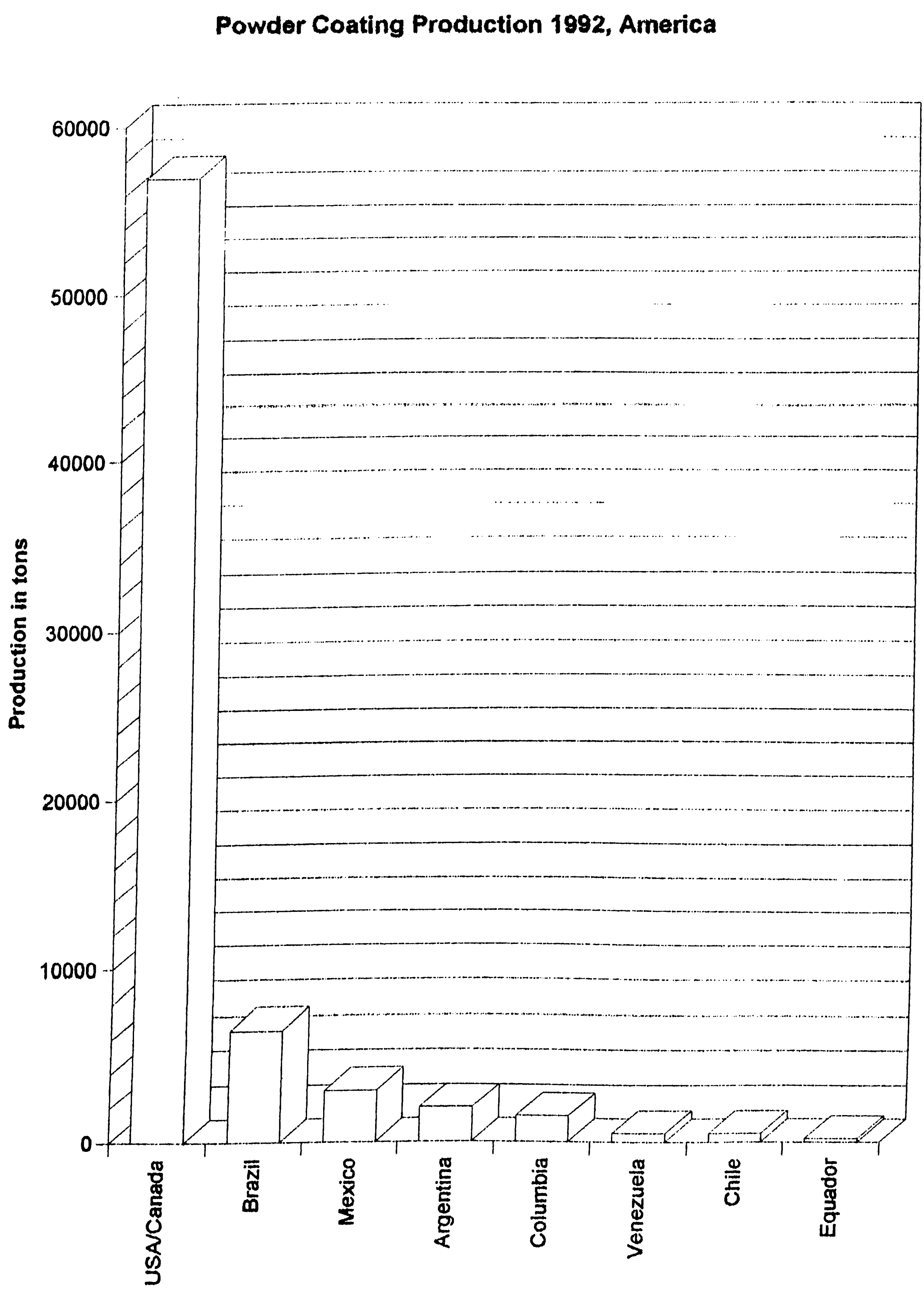


Exhibit 3



Powder Coating Production 1992, America
Production in tons
60000
50000
40000
30000
20000
10000
0
USA/Canada
Brazil
Mexico
Argentina
Columbia
Venezuela
Chile
Equador

## World Thermosetting Powder Paint Production (Tons)

| | 1988 | Increase % | 1989 | Increase % | 1990 |
|---|---|---|---|---|---|
| **Europe** | 123000 | 16.3 | 143000 | 8.4 | 155000 |
| **America** | 50000 | 10 | 55000 | 9.1 | 60000 |
| **Asia** | 33500 | 13.4 | 38000 | 23.7 | 47000 |
| **Africa** | 4000 | 12.5 | 4500 | 11.1 | 5000 |
| **Australia** | 4400 | 22.7 | 5400 | 20.4 | 6500 |
| **TOTAL** | **214900** | **14.4** | **245900** | **11.2** | **273500** |

Source: Jotun Corro-Coat

Exhibit 5

**World Production of Powder Coatings by Resin Type**

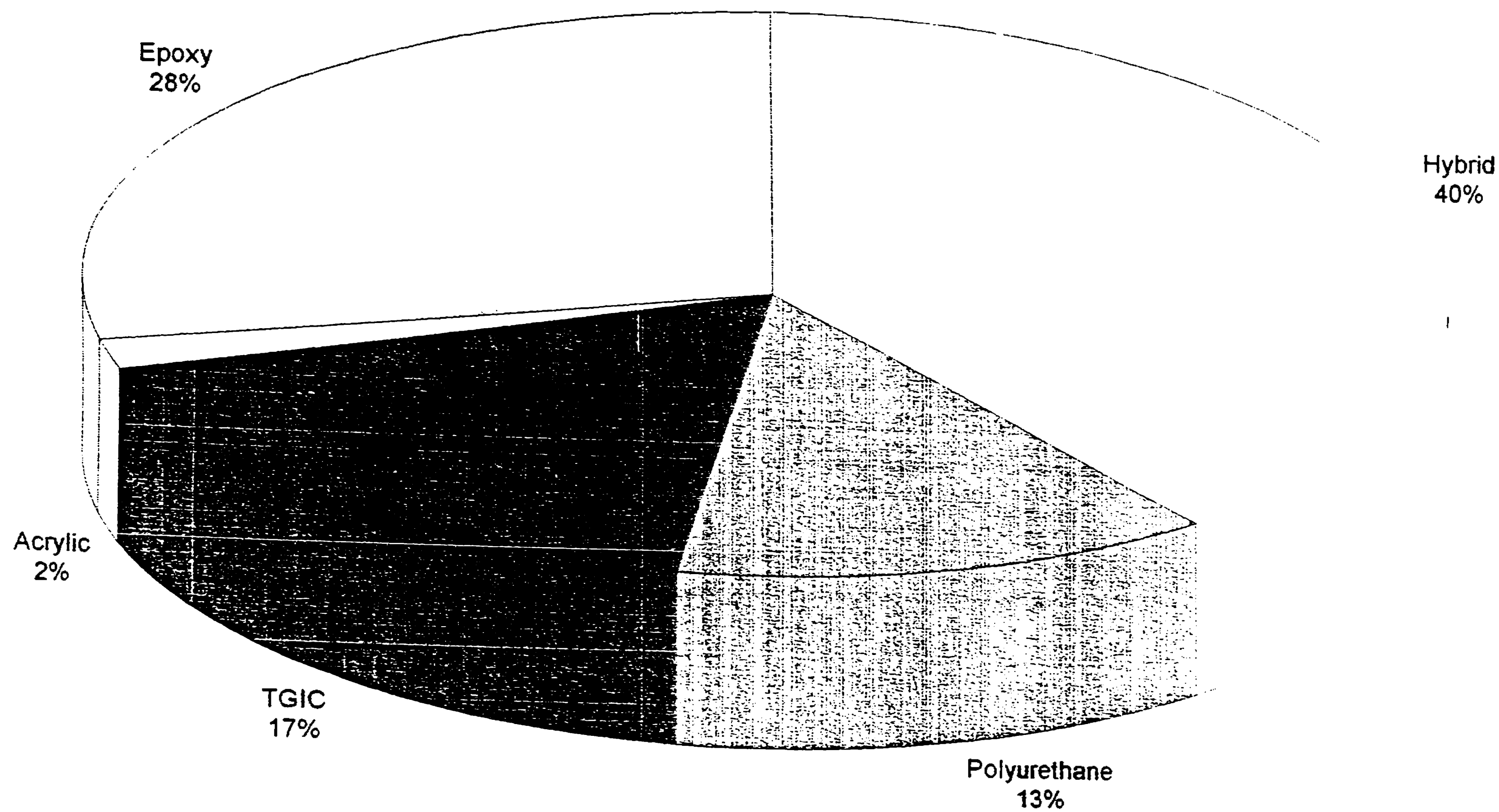


Exhibit 6

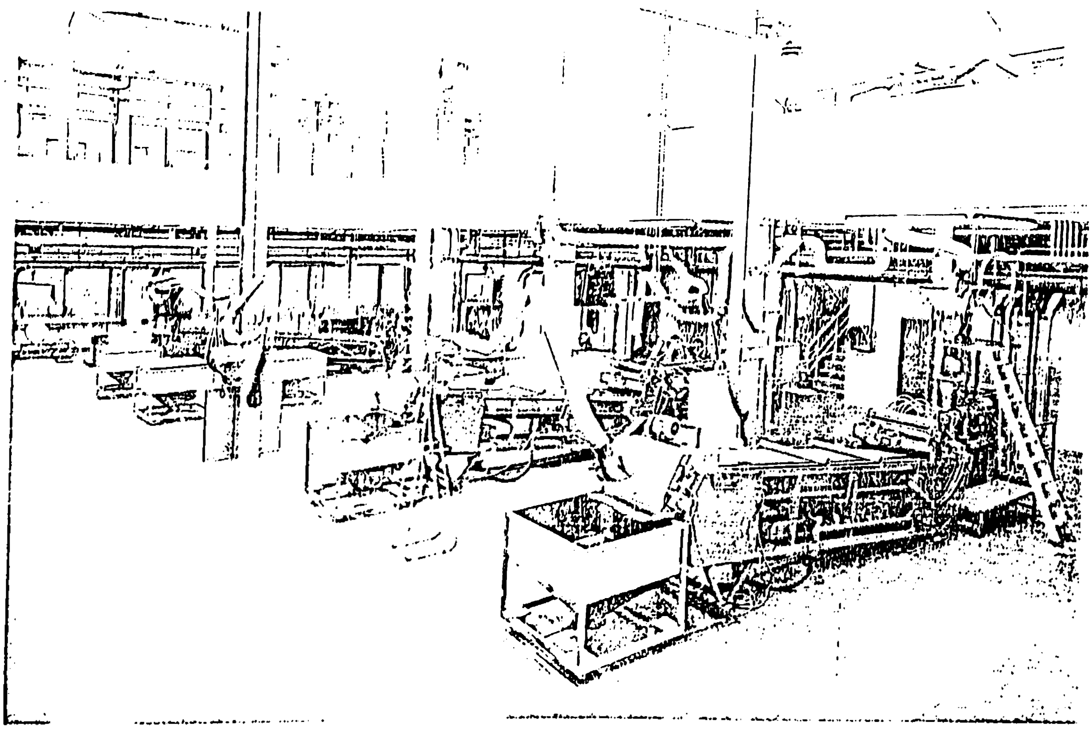
Buss Pulverlack-Technologie

# Buss Ko-Kneter-Anlage PLK 70 ESH

Buss Powder Coating Technology

# Buss Kneader Plant PLK 70 ESH

Buss Powder Coating Technology · Worldwide Number 1 ·



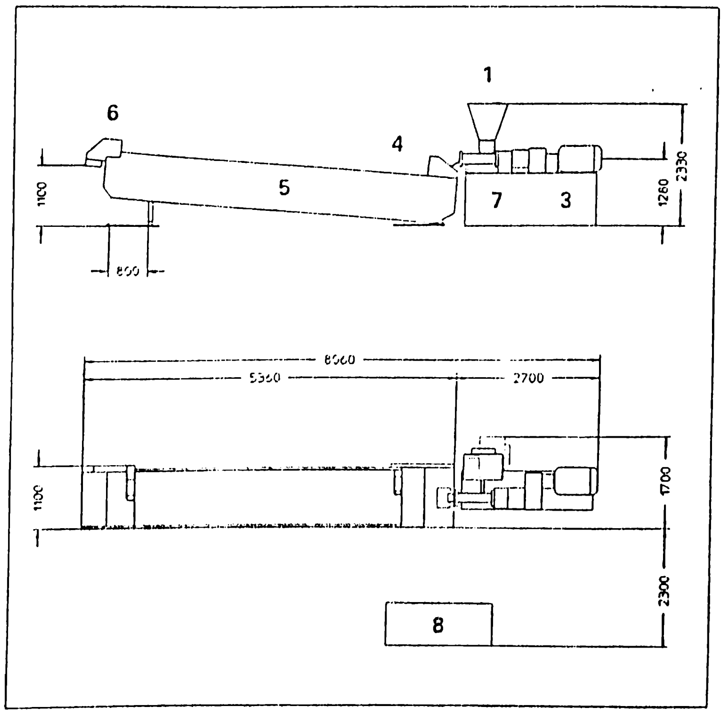
Die h tungs-Produktions-anlage m kurze Reinigungs-zeiten bei Farbton-/Produkt-Wechsel. Das neue Konzept der horizontalen Premix-Zufuhr ermöglicht die drastische Reduktion der erforderlichen Bauhöhe. Für Durchsätze bis 500 kg/h.

The high-performance production unit. Very short cleaning times at color/product changes. The new design with horizontal premix feeding drastically cuts down overall height. For production rates up to 500 kg/h.

Buss

1 Dosiergerät
3 Ko-Kneter
4 Kühlwalzen
5 Kühlband
6 Brecher
7 Heiz-/Kühlgeräte
8 Steuerschrank

1 Metering unit
3 Buss Kneader
4 Cooling rolls
5 Cooling belt
6 Crusher
7 Heating/cooling units
8 Control cabinet




## Technische Daten

| | |
|---|---|
| **Dosierung ESH** | |
| Inhalt Vorratsbehälter | 120 l |
| Antriebsleistung | 0,5 kW |
| Gesamtgewicht | 120 kg |
| **Ko-Kneter** | |
| Schneckendurchmesser | 70 mm |
| Verfahrenslänge | 7 L/D |
| Max. Schneckendrehzahl | 400 min⁻¹ |
| Antriebsleistung | 45 kW |
| Heizleistung | 2 × 6 kW |
| Gesamtgewicht | 1900 kg |
| **Kühlband mit Brecher** | |
| Kühlfläche | 2,5 m² |
| Antriebsleistung | 2,75 kW |
| Gesamtgewicht | 1700 kg |
| **Ganze Anlage** | |
| Durchsatzbereich (abhängig von Rezeptur) | ≤ 500 kg/h |
| Anlagendimension (ca.) | |
| - Länge | 9000 mm |
| - Breite | 4000 mm |
| - Höhe | 3000 mm |
| Total elektrische Anschlussleistung | 61 kW |

## Technical data

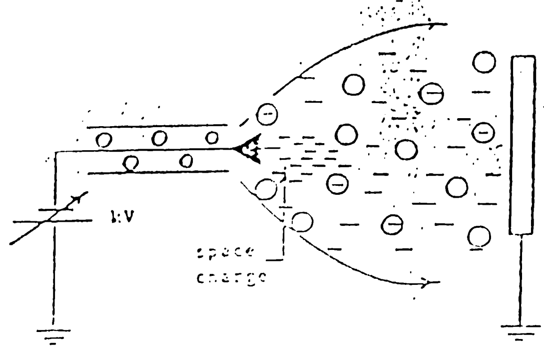
| | |
|---|---|
| **Metering unit ESH** | |
| Hopper volume | 120 l |
| Drive rating | 0.5 kW |
| Total weight | 120 kg |
| **Buss Kneader** | |
| Screw diameter | 70 mm |
| Processing length | 7 L/D |
| Top screw speed | 400 min⁻¹ |
| Drive rating | 45 kW |
| Heating capacity | 2x 6 kW |
| Total weight | 1900 kg |
| **Cooling belt with crusher** | |
| Cooling surface | 2.5 m² |
| Drive rating | 2.75 kW |
| Total weight | 1700 kg |
| **Complete plant** | |
| Output range (depending on formulation) | ≤500 kg/h |
| Plant dimensions (approx.) | |
| - length | 9000 mm |
| - width | 4000 mm |
| - height | 3000 mm |
| Total connected load | 61 kW |


Buss AG, Basel
Hohenrainstrasse 10
CH-4133 Pratteln 1
Switzerland
Phone 061/8256-677
Fax 061/8256-410
Telex 968080


Buss

Exhibit 7

JOTUN CORRO-COAT

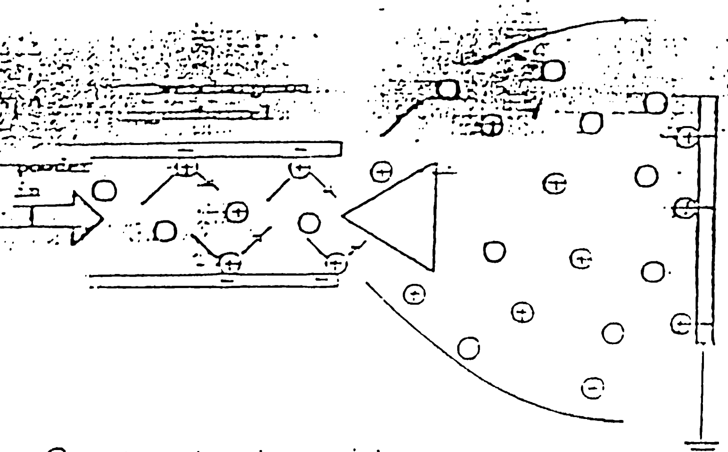



○ Uncharged powder particles

⊖ Charged powder particles

— Negative ions

Corona charging in pistol applicators.




⊕ charged powder particles

○ uncharged powder particles

Tribo-charging of insulating particles.

*Exhibit 8*

SUMMARY OF WESTERN EUROPEAN POWDER COATING DEMAND GROWTH BY MARKET APPLICATION

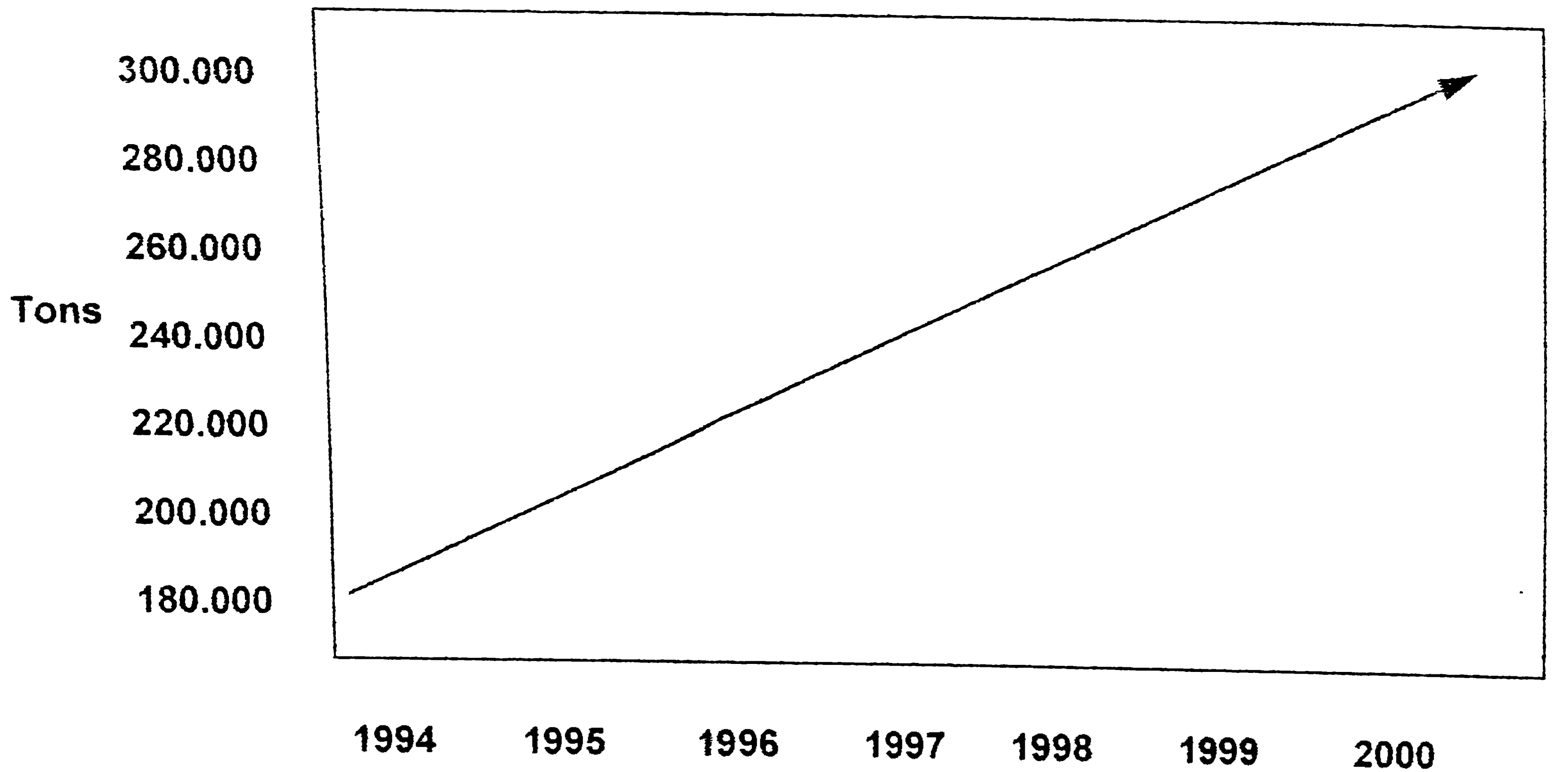
(IN TONS AND PERCENT)

| END USES | 1989 | % | 1994 | % | 1999 | % |
|---|---|---|---|---|---|---|
| Metal Furniture | 19200 | 16 | 26674 | 15 | 34150 | 15 |
| Metal Fixture | 14151 | 12 | 21194 | 12 | 28104 | 12 |
| Metal Building Outdoor | 18710 | 16 | 32419 | 19 | 47137 | 20 |
| Appliances | 11380 | 10 | 15698 | 9 | 19020 | 8 |
| Radiators/Heaters | 9251 | 8 | 12799 | 7 | 15853 | 7 |
| Automotive | 9800 | 8 | 13713 | 8 | 15878 | 7 |
| Machinary | 8011 | 7 | 12924 | 7 | 18977 | 8 |
| Pipes/Rebars | 2620 | 2 | 3940 | 2 | 5100 | 2 |
| Electrical Insulation | 2440 | 2 | 3123 | 2 | 3738 | 2 |
| Miscellaneous | 22963 | 19 | 34425 | 19 | 42470 | 19 |
| TOTALS: | 118526 | 100 | 176909 | 100 | 230427 | 100 |

| | 89-94 | | | 94-99 | | |
|---|---|---|---|---|---|---|
| | Increment | % | AGR% | Increment | % | AGR % |
| Metal Furniture | 7474 | 13 | 6.8 | 7476 | 14 | 5 |
| Metal Fixture | 7043 | 12 | 8.4 | 6910 | 13 | 5.8 |
| Metal Building Outdoor | 13709 | 23 | 11.6 | 14718 | 28 | 7.8 |
| Appliances | 4318 | 7 | 6.6 | 3322 | 6 | 3.9 |
| Radiators/Heaters | 3548 | 6 | 6.7 | 3054 | 6 | 4.4 |
| Automotive | 3913 | 7 | 7 | 2165 | 4 | 3 |
| Machinary | 4913 | 8 | 10 | 6053 | 11 | 8 |
| Pipes/Rebars | 1320 | 2 | 8.5 | 1160 | 2 | 5.3 |
| Electrical Insulation | 683 | 1 | 5.1 | 615 | 1 | 3.7 |
| Miscellaneous | 11642 | 21 | 4.1 | 8045 | 15 | 4.3 |
| TOTALS: | 58383 | 100 | 8.3 | 53518 | 100 | 5.4 |

# Exhibit 9

## Powder Coatings Demand Forecast in Western Europe until year 2000



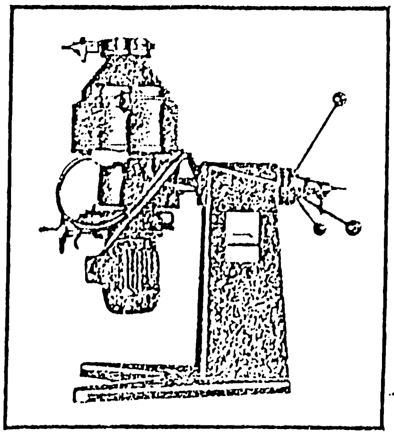

Source: Hoechst Italia

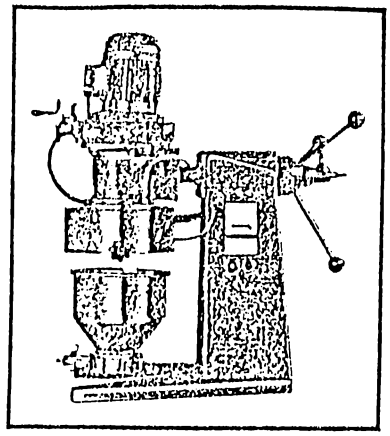
Growth (%) 1990 - 1995

| | Liquid | Powder |
|---|---|---|
| Western Europe | 0 | 11 |
| U.S.A. | 2 | 10 |
| Far East | 4 | 15 |
| Rest | 2.4 | 12 |

Source: Jotun Corro-Coat

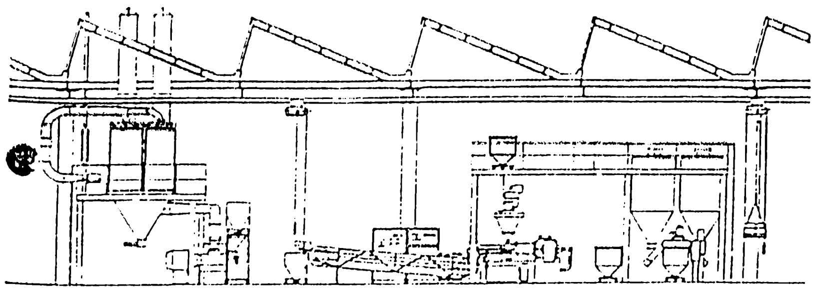
# Übertragbare Ergebnisse



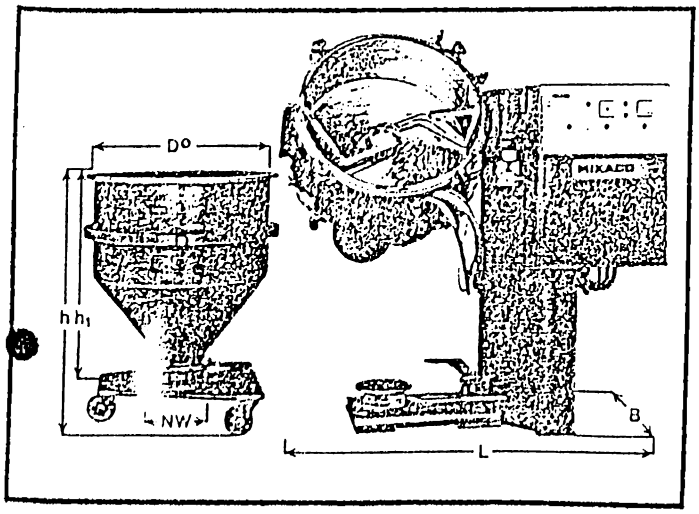


vom Labormischer Lab-CM-3-12 mit auswechselbaren Mischcontainern mit 3,6 oder 12 l Inhalt nach Wahl.

Anpassungsfähigkeit durch stufenlosen Antrieb.

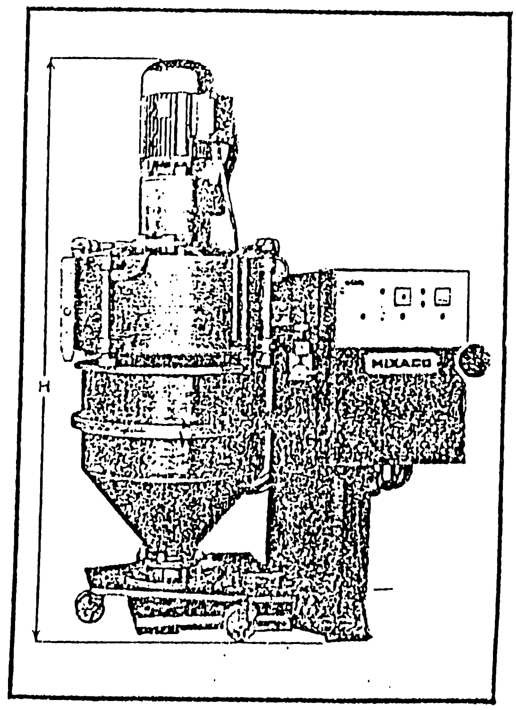


Container Mixer – schematischer Produktionsablauf in der Pulverlack-industrie. Über 60 % aller Pulver-lacke gehen über MIXACO Container Mixer.




### Technische Daten

| Container Mixer | CM | 3-12 | 150 | 300 | 600 | 1000 | 2000 |
|---|---|---|---|---|---|---|---|
| Totalinhalt/Nutzinhalt | l | 3-12/2,5-10 | 150/120 | 300/240 | 450/360 | 1000/800 | 2000/1600 |
| Motorleistung 1-tourig | kW | 1,5 | 3 | 5,5 | 11 | 18,5 | 45 |
| 2-tourig | kW | 1,5/– | 4,4/5,5 | 7,5/10 | 18,5/22 | 26/33 | 42/56 |
| Schwenkmotor | kW | – | 0,37 | 0,37 | 0,55 | 2,2 | 4 |
| Container-Hubzylinder | bar | – | 6 | 6 | 6 | 6 | 6 |
| Gewicht netto | kg | 120 | 600 | 1250 | 2500 | 3500 | 5500 |
| L | mm | 760 | 1380 | 1475 | 1760 | 2250 | 2600 |
| B | mm | 895 | 1515 | 1760 | 2175 | 2555 | 3125 |
| H | mm | 975 | 1740 | 2171 | 2425 | 2815 | 3500 |
| NW ⌀ | mm | 80 | 150 | 150 | 200 | 250 | 300 |
| D ⌀ | mm | 267 | 674 | 644 | 995 | 1376 | 1726 |
| h | mm | – | 833 | 1071 | 1235 | 1575 | 1935 |
| $h_1$ | mm | 158/202/315 | 655 | 861 | 1025 | 1365 | 1610 |




## Wandabstreifer-Mischwerkzeug

für extrem schwierige Mischaufgaben mit wandhaftenden Komponenten oder großer Schüttgewichtsdifferenz.



86

*Exhibit 12*

Mai 1990
SK1946D

# MIKRO ACM STANDARD

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ROTOR | HP | 2 - 5 | | 10 - 25 | | | | 30 - 50 | | | 60 - 150 | | | | | 200 - 300 | | 400 - 600 | | |
| MILL CHAMBER I.D. | mm | 185 | | 325 | | 410 | | 494 | | 634 | 774 | | 970 | | | 1168 | 1410 | 1550 | | |
| CLASSIFIER O.D. | mm | 112 | | 195 | | 250 | | 296 | | 380 | 470 | | 580 | | | 664 | 854 | 940 | | |
| ACM | | 2 | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 120 | 150 | 200 | 300 | 400 | 500 | 600 |
| MOTOR MILL | KW | 3 | 4 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 160 | 250 | 315 | 375 | 450 |
| CLASSIFIER | KW | .37 | .37 | 1.1 | 1.1 | 2.2 | 2.2 | 4 | 4 | 7.5 | 7.5 | 11 | 15 | 15 | 18.5 | 37 | 45 | 75 | 90 | 110 |
| SPEED MILL Std | 1/min | 10660 | | 6215 | 6215 | 4970 | 4970 | 4320 | 4320 | 3295 | 2625 | 2625 | 2100 | 2100 | 2100 | 1850 | 1650 | 1400 | | |
| CLASS. Min | 1/min | 1000 | | 700 | 700 | 700 | 700 | 600 | 600 | 600 | 600 | 600 | 800 | 800 | 800 | 600 | 600 | 400 | | |
| Max | 1/min | 5400 | | 4000 | 4000 | 3250 | 3250 | 2920 | 2920 | 3250 | 2650 | 2650 | 2400 | 2400 | 2400 | 2200 | 2000 | 1860 | | |
| AIRFLOW INTAKE | m 3/h | 324 | 450 | 900 | 1350 | 1800 | 2250 | 2700 | 3600 | 4500 | 5400 | 6750 | 9000 | 10800 | 13500 | 18000 | 27000 | 36000 | 45000 | 54000 |
| CAPACITY FACTOR | | .2 | .4 | 1 | 1.35 | 1.8 | 2.25 | 2.7 | 3.6 | 4.5 | 5.4 | 6.75 | 9 | 10.8 | 13.5 | 18 | 27 | 36 | 45 | 54 |
| 100% nom. | kg/h | 50 | 100 | 250 | 340 | 450 | 560 | 675 | 900 | 1125 | 1350 | 1700 | 2250 | 2700 | 3375 | 4500 | 6750 | 9000 | 11250 | 13500 |

## APPENDIX B

QUESTIONNAIRE USED IN THE SURVEY

**BİLKENT ÜNİVERSİTESİ**
İŞLETME FAKÜLTESİ

İşletme Bölümü

TO: 12.4.1994

ATTN:

BİLKENT ÜNİVERSİTESİ MBA PROGRAMI ÇERÇEVESİNDE YAPMAKTA OLDUGUM TEZ ÇALIŞMASINDA TOZ BOYA SANAYİ HAKKINDA BİR ARAŞTIRMA YAPMAKTAYIM. BU ARAŞTIRMAM İÇİN EKTEKİ FORMUN DOLDURULARAK 0.312.3483761 NOLU FAKSA VEYA AHMET MİTHAT EFENDİ SOKAK 18/1 ÇANKAYA/ANKARA ADRESİNE GÖNDERİLMESİNİ SAYGILARIMLA ARZ EDERİM.

N. SANAL LİMONCUOGLU
ÖGRENCİ NO: 9231234-5

DOÇ. DR. GÜLİZ GER
TEZ DANIŞMANI



06533 Bilkent, Ankara Tel: 266 41 64 Teleks: 44398 bku tr Faks: 266 43 06

Tarih :

Bilgi Toplama Formu:

Bu araştırma Türkiye'de gelişmekte olan toz boya piyasası hakkında bilgi toplamak piyasanın ihtiyaçlarının belirlenmesi için yapılmaktadır. Yardımcı olmanızı diler, sonu toplanan bilgilerin sizinde işinizde yardımcı olacağını umarız.

1. Firma adı :

2. Tesislerin bulunduğu yer :

3. Ne üretiliyor ?

4. Toz boya ile ne boyanıyor (hangi parçalar) ?

5.Kullanılan toz boya sisteminin markası nedir?

6. Kullanılan toz boya cinsi ?
   - PE (polyester)
   - EP (epoksi - polyester)
   - E (epoksi)
   - Diğer

7. Kullanılan renkler (renk adı veya ral kodu):

8. Yıllık toz boya tüketimi :
   - 1993 fiili
   - 1994 öngörülen

9. Yıl içinde genellikle alım yapılan dönemler?

10. Kullanılan toz boya ithal mi ?
   - Ithalatçı Firma ?
   - Markası (toz boyanın ticari adı) ?
   - Üretici Firma ?

11. Kullanılan toz boya yerli mi ?
Üretici Firma ?
Markası ?
Sorun Var mı (sorun olanlara işaret koyunuz)?
Kalite □ Renk□
Pazarlama□ Zamanında teslimat□
Satış sonrası hizmetler□

12. Toz boyada sürekli aynı rengi tutturma

| Çok önemli | Oldukça önemli | Önemli | Çok önemli değil | Önemsiz |
|---|---|---|---|---|
| □ | □ | □ | □ | □ |

13. Toz boyada çok renk seçeneğine sahip olmak

| Çok önemli | Oldukça önemli | Önemli | Çok önemli değil | Önemsiz |
|---|---|---|---|---|
| □ | □ | □ | □ | □ |

14. Toz boyada sürekli kaliteyi tutturmak

| Çok önemli | Oldukça önemli | Önemli | Çok önemli değil | Önemsiz |
|---|---|---|---|---|
| □ | □ | □ | □ | □ |

15. Toz boyada fiyat

| Çok önemli | Oldukça önemli | Önemli | Çok önemli değil | Önemsiz |
|---|---|---|---|---|
| □ | □ | □ | □ | □ |

16. Üreticinin satış sonrası servis ve danışma merkezi olması

| Çok önemli | Oldukça önemli | Önemli | Çok önemli değil | Önemsiz |
|---|---|---|---|---|
| □ | □ | □ | □ | □ |

17. Toz boyama öncesi fosfatlama ve temizleme işlemlerini yapıyor musunuz? Evet□ Hayır□

18. Toz boya kullanımında artış bekleniyor mu ? Evet□ Hayır□
Bekleniyorsa ne kadar (ton veya yüzde)?
Artış nedenleri :
Üretimdeki artış Evet□ Hayır□
Solvent bazlı boyadan geçiş Evet□ Hayır□
Yeni yatırımlar sayesinde Evet□ Hayır□
19. Toz boya üreticilerinden beklediklerim ...............

20. Toz boya konusunda belirtmek istedikleriniz......................
.......................................

Date:

**Survey Form:**

This survey is made in order to collect information about the growing powder coating market in Turkey. The informations gathered from this survey will be used in a thesis study at Bilkent University.

1. Company Name:

2. Location:

3. Tel: Fax:

4. Product:

5. Parts painted with powder paint:

6. System Brand Name:

7. Type of powder used

| | |
|---|---|
| Polyester | [ ] |
| Epoxy polyester | [ ] |
| Epoxy | [ ] |
| Others | [ ] |

8. Mostly used colours (indicate Ral):

9. Usage Rate: 1993 :
1994 forecast:

10. Used powder paint brands:

11. Quality of the current powder that is being used:

| Perfect | Very Good | Good | Not Good | Very Bad |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

12. Marketing policy and salesmen of the powder companies:

| Perfect | Very Good | Good | Not Good | Very Bad |
|---|---|---|---|---|
| [ ] | [ ] | [ ] | [ ] | [ ] |

13. Problems faced with powder:

Colour[ ] Timely Delivery[ ] Price[ ] After Sales Service [ ]

14. Supplying the same colour properties in every order is

Extremely important [] Very Important [] Important [] Not Very Important [] Not Important []

15. Having many colour choices is

Extremely important [] Very Important [] Important [] Not Very Important [] Not Important []

16. Having quality control is

Extremely important [] Very Important [] Important [] Not Very Important [] Not Important []

17. Price of powder paints is

Extremely important [] Very Important [] Important [] Not Very Important [] Not Important []

18. Having an After Sales Service is

Extremely important [] Very Important [] Important [] Not Very Important [] Not Important []

19. Pretreatment applied before painting

Phosphating[] Cleaning [] Cromating[]

20. Do you expect an increase in your usage of powder paints? Yes[] No[]

Reasons For Increase :

Production increase Yes[] No[]
Switching from solvent paints Yes[] No[]
New investments Yes[] No[]

21. I expect powder producers to..........................

22. The reason I prefered powder paint.................................

## APPENDIX C

RESULTS OF THE RESEARCH

Tables
Interview Notes

## Table 1 - Respondent Informations

| Company Name | Location | Product | System |
|---|---|---|---|
| Arçelik | Eskisehir | White - Good | Gema |
| Peg - Profilo | Tekirdag | White - Good | Gema |
| Ardem | Bolu | White - Good | Gema - Sames |
| Pekel | Manisa | White - Good | Gema |
| TermoTeknik | Çorlu | Heater | Gema |
| Fenis Al. | Gebze | Al. Profile | Nordson |
| Teknogon | Istanbul | Shelves | Wagner |
| Sahan Boya | Izmir | Job-shop | Gema - Nordson |
| Has Boya | Izmir | Job-shop | Wagner - Sames |
| Auer | Lüleburgaz | White - Good | Gema |
| Arçelik | Ankara | White - Good | Sames |
| Çuhadaroglu | Istanbul | Al. Profile | Gema |
| Aytemizler | Ankara | Construction | Wagner |
| Süsler | Eskisehir | Heater | Sames |
| Termikel | Ankara | White - Good | Wagner |
| Adel Al. | Ankara | Al. Profile | Gema |
| Ugur Sogutma | Aydin | Deep freezer | Sames |
| Grammer | Bursa | Furniture | Larius |
| Mebas | Istanbul | Al. Profile | Inner |
| Arslan Al. | Bilecik | Al. Profile | Gema |
| Soytas | Ankara | White - Good | Wagner |
| Mebosan | Ankara | Job-shop | BMS - Wagner |
| Akmetal | Ankara | Job-shop | Wagner |
| Nema Al. | Ankara | Job-Shop | Wagner |
| Uda | Ankara | Job-shop | Sames |
| Mercan Raf | Istanbul | Shelves | Wagner-Gema |
| Türkel Boya | Istanbul | Job-shop | Wagner |
| Pinar Emaye | Eskisehir | Heater | Wagner |
| Nitas | Ankara | Job-shop | Sames |
| Deko Dizayn | Ankara | Furniture | Wagner |
| Özgür | Istanbul | Heater | Wagner |
| Tibel | Ankara | Metal Acc. | Gema |
| Dökümis | Kayseri | Heater | Gema |
| Madosan | Bursa | Shelves | Larius |
| ICF | Eskisehir | Heater | Böllhof |
| Star Çelik | Istanbul | Factory Eq. | Wagner |

| Company Name | Location | Product | System |
|---|---|---|---|
| EMK | Ankara | Job-shop | Wagner |
| Düpaz | Ankara | Metal Acc. | Wagner-Sames |
| Klima A.s. | Ankara | Air Cond. | Wagner |
| Mekon | Ankara | Al. Profile | Gema |
| Yil-Ka | Ankara | Job-shop | Wagner |
| Kader Çelik | Ankara | Furniture | Wagner |
| Bometsan | Ankara | Job-shop | Wagner |
| Intec Al. | Gebze | Al. Profile | Wagner |
| Teknomar | Ankara | Job-shop | Wagner |
| Ulukon | Ankara | Job-shop | Gema |
| Dekor Ar | Ankara | Furniture | Wagner |
| Karadeniz Raf | Istanbul | Shelves | Gema |
| Baler Boya | Ankara | Job-shop | Wagner |
| Nurdil | Ankara | Shelves | BMS |
| Yildirim Büro | Ankara | Furniture | Wagner |
| Tablosan | Ankara | Electric Box/Pan | Wagner |
| Tempo Aks. | Istanbul | Metal Acc. | Gema |
| Isik Al. | Ankara | Job-shop | Wagner |
| Selvi Boya | Istanbul | Job-shop | BMS |
| Erol Statik | Istanbul | Job-shop | |
| Tetimak | Ankara | Job-shop | Wagner |
| Atmaca | Ankara | Job-shop | Wagner-Gema |
| Metal Form | Istanbul | Metal Acc. | Larius |
| Cer | Ankara | Oven | Sames |
| Mako | Bursa | Automotive Acc. | Gema |
| Özçanci | Eskisehir | Heater | Wagner |
| Nur Çelik | Ankara | Furniture | Wagner |
| Eras | Gebze | Metal Acc. | Gema |
| Karinca | Ankara | Oven-Heater | Gema |
| Rottest | Izmir | Water Pumps | Gema |
| Süper Boya | Istanbul | Job-shop | Gema |
| Emek Torna | Ankara | Furniture | Wagner |
| Er-Pa | Ankara | Furniture | Sames |
| Özgen Elektrik | Ankara | Electric Box/Pan | Wagner |
| Safter | Ankara | Job-shop | Wagner |
| Kes Klima | Ankara | Air Cond. | Wagner |
| Avpar | Ankara | Lighting Fixture | Gema |
| Çapar | Kayseri | Milk Mach. | Wagner |

| Company Name | Location | Product | System |
|---|---|---|---|
| Bisanlar | Izmir | Bicycle | Sames |
| Mert Elektrik | Istanbul | Electric Box/Pan | Gema |
| Cimas | Ankara | Construction | |
| Porsan | Bursa | Shelves | |
| Elimko | Ankara | Electric Box/Pan | Wagner |
| Öz-El | Ankara | Electric Box/Pan | Wagner |
| Aspino Klima | Kayseri | Air Cond. | Wagner |
| Türk Demir Dökü | Bozöyük | Heater | Gema |
| Arçelik | Çayirova | White - Good | Gema |
| Paktel | Bursa | Horns | Wagner |
| Simco | Istanbul | Switches | Wagner |
| Asya | Kayseri | White - Good | Gema |
| Persan | Istanbul | Furniture | Wagner |
| Gazal | Istanbul | Ovens/stoves | Gema |
| Erna | Istanbul | Ovens | Gema |
| Simbay | Adana | White - Good | Gema |
| Masis A.S. | Istanbul | Metal Acc. | Gema |
| Cem Madeni Esya | Istanbul | Furniture | Gema |
| Tuna Çelik | Istanbul | Furniture | Larius |
| Asca | Istanbul | Automotive Acc. | Gema |

## Table 2 - Usage By Industry

| Product Group | # Of Company | 1994 Usage |
|---|---|---|
| Air Cond. | 3 | 14 |
| Al. Profile | 7 | 251 |
| Automotive Acc. | 2 | 9.5 |
| Bicycle | 1 | 0.5 |
| Construction | 2 | 48.5 |
| Deep freezer | 1 | 35 |
| Electric Box/Pan | 5 | 5 |
| Factory Eq. | 1 | 10 |
| Furniture | 11 | 144.5 |
| Heater | 8 | 411 |
| Horns | 1 | 25 |
| Job-shop | 21 | 631 |
| Lighting Fixture | 1 | 1 |
| Metal Acc. | 6 | 34.5 |
| Milk Mach. | 1 | 0.9 |
| Oven | 1 | 2 |
| Oven-Heater | 1 | 1.5 |
| Ovens | 1 | 9 |
| Ovens/stoves | 1 | 30 |
| Shelves | 6 | 104.2 |
| Switches | 1 | 10 |
| Water Pumps | 1 | 1.5 |
| White - Good | 11 | 1850 |
| | **94** | **3629.6** |

## Table 3 - Color Problems In Turkey

| Location | Color Problem | # Of Company | 1994 Usage |
|---|---|---|---|
| Ankara | Yes | 8 | 166.5 |
| Çorlu | Yes | 1 | 120 |
| Istanbul | Yes | 2 | 20 |
| Izmir | Yes | 1 | 70 |
| | | **12** | **376.5** |

## Table 4 - Delivery Problems In Turkey

| Location | Timely Delivery Problem | # Of Company | 1994 Usage |
|---|---|---|---|
| Ankara | Yes | 9 | |
| Bursa | Yes | 1 | |
| Gebze | Yes | 1 | |
| Istanbul | Yes | 2 | |
| Izmir | Yes | 1 | |
| | | **14** | |

# Table 5 - Price Credit Problems In Turkey

| Location | Price Credit Problem | # Of Company | 1994 Usage |
|---|---|---|---|
| Ankara | Yes | 24 | 249.5 |
| Aydin | Yes | 1 | 35 |
| Bilecik | Yes | 1 | 20 |
| Bursa | Yes | 5 | 72.2 |
| Eskisehir | Yes | 3 | 64 |
| Gebze | Yes | 2 | 102 |
| Istanbul | Yes | 15 | 177 |
| Izmir | Yes | 2 | 70.5 |
| Kayseri | Yes | 3 | 16.9 |
| | | **56** | **807.1** |

## Table 6 - After Sales Problems In Turkey

| Location | After Sales Service Problem | # Of Company | 1994 Usage |
|---|---|---|---|
| Ankara | Yes | 8 | 47 |
| Çorlu | Yes | 1 | 120 |
| Eskisehir | Yes | 1 | 13 |
| Istanbul | Yes | 2 | 19 |
| Izmir | Yes | 1 | 65 |
| Lüleburgaz | Yes | 1 | 60 |
| | | **14** | **324** |

## Table 7 - Respondent Usage By Location

| Location | # Of Company | 1993 Usage (In Tons | 1994 Usage |
|---|---|---|---|
| Adana | 1 | 65 | 80 |
| Ankara | 41 | 247.17 | 403.1 |
| Aydin | 1 | 30 | 35 |
| Bilecik | 1 | 20 | 20 |
| Bolu | 1 | 240 | 300 |
| Bozöyük | 1 | 150 | 200 |
| Bursa | 5 | 54.7 | 72.2 |
| Çayirova | 1 | 40 | 45 |
| Çorlu | 1 | 100 | 120 |
| Eskisehir | 5 | 451.7 | 566 |
| Gebze | 3 | 65.5 | 107 |
| Istanbul | 22 | 617.75 | 722.4 |
| Izmir | 4 | 101 | 137 |
| Kayseri | 4 | 39.7 | 41.9 |
| Lüleburgaz | 1 | 50 | 60 |
| Manisa | 1 | 100 | 120 |
| Tekirdag | 1 | 450 | 600 |
| | **94** | **2822.52** | **3629.6** |

## Table 8 - Ankara Potential

| Product | 1994 Usage(In Tons) | 1993 Usage | # Of Company |
|---|---|---|---|
| Air Cond. | 8 | 3.2 | 2 |
| Al. Profile | 41 | 30 | 2 |
| Construction | 48.5 | 48.5 | 2 |
| Electric Box/Pan | 4.6 | 2.592 | 4 |
| Furniture | 34.5 | 21 | 7 |
| Job-shop | 122 | 71.5 | 15 |
| Lighting Fixture | 1 | 0.6 | 1 |
| Metal Acc. | 16 | 15 | 2 |
| Oven | 2 | 0.2 | 1 |
| Oven-Heater | 1.5 | 1.078 | 1 |
| Shelves | 4 | 3.5 | 1 |
| White - Good | 120 | 50 | 3 |
| | **403.1** | **247.17** | **41** |

Table 9 - Usage By Type Of Powder

| Type Of Powder | Frequency (# of companies using the type) |
|---|---|
| Polyester | 45 |
| Epoxy/Polyester | 70 |
| Epoxy | 13 |
| PE-F | 7 |

Note: Frequencies are given for 94 respondents; multiple answers were allowed

## Table 10 - Opinions About Quality, Marketing Policy & Salesman

| Question | 5 | 4 | 3 | 2 | 1 | n | Mean |
|---|---|---|---|---|---|---|---|
| | Perfect | | Good | | Very Bad | | |
| Quality Of Powder | 13 | 38 | 39 | 4 | 0 | 94 | 3.64 |
| Marketing Policy & Salesmen | 7 | 18 | 37 | 31 | 1 | 94 | 2.98 |

Note: 94 respondents answered the ranking questions. The numbers shows how the ranking is distributed among the respondents. The means are calculated according to the numbers given from 1 to 5 where 1 means very bad and 5 means perfect.

## Table 11 - Frequency Of Importance Ratings

| Question | 5 | 4 | 3 | 2 | 1 | n | Mean |
|---|---|---|---|---|---|---|---|
| | Extremely Important | | Important | | Not Important | | |
| Same Colour Property | 45 | 21 | 18 | 9 | 1 | 94 | 4.06 |
| Having Many Colours | 21 | 20 | 19 | 24 | 10 | 94 | 3.19 |
| Having Quality Control | 54 | 24 | 13 | 2 | 1 | 94 | 4.36 |
| Price Of Powder | 48 | 18 | 21 | 7 | 0 | 94 | 4.14 |
| After Sales Service | 33 | 20 | 30 | 10 | 1 | 94 | 3.79 |

Note: 94 respondents answered the questions about attributes. The numbers show how the ranking is distributed among the respondents. The means are calculated according to the numbers given from 1 to 5. where 1 stands for not important and 5 for extremely important.

## Table 12 - Quality Perceptions About Current Producers

Question 1: Define the quality of the powder that you are using

Question 2: Define the marketing policy and salesmen of the current companies

| | Mean For Question 1 | Mean For Question 2 |
|---|---|---|
| Ankara | 3.46 | 2.8 |
| Istanbul | 3.77 | 3.32 |
| Kayseri | 3.5 | 2.75 |
| Eskisehir | 4.2 | 4 |
| Izmir | 3.25 | 3.5 |

* The numbers used stands for: 5: Perfect, 4: Very Good, 3:Good, 2:Not Good, 1:Very Bad
* Sample Mean for Question 1 = 3.64
* Sample Mean for Question 2 = 2.98

## Table 13 - Attribute Importance Ratings by Locations

| |
|---|
| Question 1: The importance of quality |
| Question 2: The importance of having many color choices |
| Question 3: The importance of price |

| Location | Mean for Question1 | Mean for Question 2 | Mean For Question 3 |
|---|---|---|---|
| Ankara | 4.295 | 3.045 | 3.886 |
| Istanbul | 4.545 | 4.636 | 4.273 |
| Kayseri | 4.25 | 2.25 | 4.25 |
| Eskisehir | 4.4 | 3.2 | 3.6 |
| Izmir | 4 | 2.75 | 3.75 |

* The numbers used stands for: 5: Extremely Important
4: Very Important
3: Important
2: Not Very Important
1: Not Important

* Sample mean for Question 1 = 4.36
* Sample Mean for Question 2 = 3.19
* Sample Mean for Question 3 = 4.14

## Table 14 - Perceptions About Current Producers by Industry

Question 1: Define the quality of the powder that you are using

Question 2: Define the marketing policy and salesmen of the current companies

| | Mean For Question 1 | Mean For Question 2 |
|---|---|---|
| Furniture | 3.36 | 3.55 |
| Job-shop | 3.38 | 2.62 |
| Shelves | 3.14 | 2.85 |
| White-Good | 2.875 | 3.4 |
| Al. Profile | 3.83 | 3.6 |
| Heater | 4 | 3.75 |

* The numbers used stands for: 5: Perfect, 4: Very Good, 3:Good, 2:Not Good, 1:\
* Sample Mean for Question 1 = 3.64
* Sample Mean for Question 2 = 2.98

## Table 15 - Usage Rates of The Respondents

| Company Name | Location | 1993 Usage in tons | 1994 Usage |
|---|---|---|---|
| Bisanlar | Izmir | 0 | 0.5 |
| Öz-El | Ankara | 0 | 0.5 |
| Selvi Boya | Istanbul | 0 | 5 |
| Yil-Ka | Ankara | 0 | 6 |
| Tuna Çelik | Istanbul | 0 | 10 |
| Nitas | Ankara | 0 | 10 |
| Nema Al. | Ankara | 0 | 15 |
| Arçelik | Ankara | 0 | 60 |
| Elimko | Ankara | 0.1 | 0.1 |
| Porsan | Bursa | 0.2 | 0.2 |
| Cer | Ankara | 0.2 | 2 |
| Mert Elektrik | Istanbul | 0.4 | 0.4 |
| Cimas | Ankara | 0.5 | 0.5 |
| Salter | Ankara | 0.5 | 1.5 |
| Avpar | Ankara | 0.6 | 1 |
| Kes Klima | Ankara | 0.7 | 1 |
| Çapar | Kayseri | 0.8 | 0.9 |
| Özgen Elektrik | Ankara | 0.992 | 1 |
| Er-Pa | Ankara | 1 | 1 |
| Rottest | Izmir | 1 | 1.5 |
| Emek Torna | Ankara | 1 | 1.5 |
| Karinca | Ankara | 1.078 | 1.5 |
| Süper Boya | Istanbul | 1.5 | 1 |
| Özçanci | Eskisehir | 1.5 | 2 |
| Eras | Gebze | 1.5 | 2 |
| Nur Çelik | Ankara | 1.5 | 2 |
| Tablosan | Ankara | 1.5 | 3 |
| Metal Form | Istanbul | 1.85 | 2.5 |
| Atmaca | Ankara | 2.5 | 2 |
| Mako | Bursa | 2.5 | 2 |
| Tetirnak | Ankara | 2.5 | 2.5 |
| Klima A.s. | Ankara | 2.5 | 7 |
| Dekor Ar | Ankara | 3 | 4 |
| Tempo Aks. | Istanbul | 3 | 4 |
| Isik Al. | Ankara | 3 | 4 |
| Yildirim Büro | Ankara | 3 | 5 |

| Company Name | Location | 1993 Usage in tons | 1994 Usage |
|---|---|---|---|
| Karadeniz Raf | Istanbul | 3 | 5 |
| Nurdil | Ankara | 3.5 | 4 |
| Aspino Klima | Kayseri | 3.9 | 6 |
| Ulukon | Ankara | 4 | 5 |
| Baler Boya | Ankara | 4 | 5 |
| Intec Al. | Gebze | 4 | 5 |
| Teknomar | Ankara | 4 | 5 |
| Kader Çelik | Ankara | 4 | 6 |
| Mekon | Ankara | 5 | 6 |
| Star Çelik | Istanbul | 5 | 10 |
| Bometsan | Ankara | 6 | 8 |
| Madosan | Bursa | 6 | 10 |
| Tibel | Ankara | 7 | 10 |
| Deko Dizayn | Ankara | 7.5 | 15 |
| Düpaz | Ankara | 8 | 6 |
| EMK | Ankara | 8 | 8 |
| Ema | Istanbul | 8 | 9 |
| Masis A.S. | Istanbul | 8 | 10 |
| Mercan Raf | Istanbul | 8 | 15 |
| ICF | Eskisehir | 9.2 | 6 |
| Persan | Istanbul | 10 | 10 |
| Dökümis | Kayseri | 10 | 10 |
| Akmetal | Ankara | 10 | 15 |
| Pinar Emaye | Eskisehir | 11 | 13 |
| Özgür | Istanbul | 12 | 15 |
| Uda | Ankara | 12 | 15 |
| Türkel Boya | Istanbul | 13 | 18 |
| Simco | Istanbul | 15 | 10 |
| Soytas | Ankara | 15 | 20 |
| Mebosan | Ankara | 15 | 20 |
| Asea | Istanbul | 20 | 7.5 |
| Arslan Al. | Bilecik | 20 | 20 |
| Paktel | Bursa | 20 | 25 |
| Asya | Kayseri | 25 | 25 |
| Adel Al. | Ankara | 25 | 35 |
| Grammer | Bursa | 26 | 35 |
| Mebas | Istanbul | 29 | 30 |
| Gazal | Istanbul | 30 | 30 |

| Company Name | Location | 1993 Usage in tons | 1994 Usage |
|---|---|---|---|
| Ugur Sogutma | Aydin | 30 | 35 |
| Süsler | Eskisehir | 30 | 45 |
| Termikel | Ankara | 35 | 40 |
| Arçelik | Çayirova | 40 | 45 |
| Has Boya | Izmir | 45 | 65 |
| Aytemizler | Ankara | 48 | 48 |
| Cem Madeni Esya | Istanbul | 50 | 55 |
| Çuhadaroglu | Istanbul | 50 | 55 |
| Auer | Lüleburgaz | 50 | 60 |
| Teknogon | Istanbul | 50 | 70 |
| Sahan Boya | Izmir | 55 | 70 |
| Fenis Al. | Gebze | 60 | 100 |
| Simbay | Adana | 65 | 80 |
| TermoTeknik | Çorlu | 100 | 120 |
| Pekel | Manisa | 100 | 120 |
| Türk Demir Dökü | Bozöyük | 150 | 200 |
| Ardem | Bolu | 240 | 300 |
| Erol Statik | Istanbul | 300 | 350 |
| Arçelik | Eskisehir | 400 | 500 |
| Peg - Profilo | Tekirdag | 450 | 600 |
| | | **2822.52** | **3629.6** |

## Exhibit 13

**Summary of the Interviews and Answers to Expectation Questions Given By The Users**

* what we need is technical service and same quality in every order (PEG A.S.)

* we want laboratory tests to be done covering the pretreatment (Termoteknik)

* we want to receive the quality control reports of every batch to be send directly to us (Termoteknik).

* we expect them to have ISO 9000 and QualiCoat Standards (Fenis)

* A stable price policy with meaningful prices (Fenis)

* what we want the most is good quality at suitable price (Sahan)

* they should educate more people on powder coatings to help the customers and to improve the market standards (Auer)

* we prefer to have technical documents and periodical to be published as there is not much literature in Turkey about powder coatings (Arçelik/Ankara)

* timely delivery and quick response time for urgent orders (Çuhadaroglu)

* production of powders should be done 100% in Turkey covering the raw materials (Grammer)

* we want to have the same prices at least for a predecided period (Mebas)

* they do not take bad quality products back (Pinar)

* they can not produce special colors enough (Tuna)

* we want to have technical seminars on powder coatings (Tuna)

* they do not always supply the colors like in the RAL catalogue (Star)

* we want new companies to enter the market in order to increase competition (Ulukon)

* we prefer a producer located in Ankara (Atmaca, Mebosan, Nitas)

* they should keep more colors in stocks (Teknogon)

* they can not solve the problems we have about the powders (Aytemizler)

* we can not control their quality as we do not have the necessary equipments but we can understand only when the problem is big (Akmetal)

* they do not give credits to us and this creates problem (Nema, Uda)

* we want them to be more flexible about the prices and credit terms (Tibel)

* Arsonsisi has better quality than others but you can not always find it (Tuna, Uda)

* Pulver's colors do not always fit to RAL catalogue (EMK)

* we want new companies to give an end to this Cartel (Düpaz)

* after this instability, we even search for a way to produce powders (Teknomar)

* as the prices are so high switching to powder paints is delayed till now (Ulukon)

* they should decrease these unrealistic prices (Dekor Ar)

* we will prefer any other company other than Lale Boya as soon as they enter the market strongly (Yildirim)

* the most important thing for us is timely delivery as we do business with the government (Atmaca)

* both Pulver and Corro Coat are working with Europe (Ulukon)

# APPENDIX D

WORKSHEET

Sales Objectives: Micro Method

# WORKSHEET

## Sales Objectives: Micro Method

### Projection from Top: Sales Forecast for Manufacturing, Service, or Retail Category*

| | Company Sales Volume | | | |
|---|---|---|---|---|
| | $ ( ) | Percent Change Previous Year | Units ( ) | Percent Change Previous Year |
| Previous 5 Years | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| Next 3 Years Projections | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |

Note: Complete a worksheet for your company's total sales and a worksheet for each individual product or department.

*Based on your type of business, include in your sales projections dollars and units/transactions/persons served, and take into consideration *new* products, distribution channels, stores or services, and price changes. Use net dollar sales to trade/intermediate markets.

### Projections from Bottom: Sales Forecast by Distribution Channel for Manufacturers*

| | Existing | | | New | | |
|---|---|---|---|---|---|---|
| | Number | Dollars (MM) | Units | Number | Dollars (MM) | Units |
| Direct accounts | | $ | | | $ | |
| Wholesalers/ Brokers | | | | | | |
| Other | | | | | | |
| Total | | | | | | |

Note: Develop projections for each year for a three-year period.

*In your sales projections, take into consideration *new* products, changes in distribution outlets, and price changes. Use net dollar sales to trade/intermediate markets.