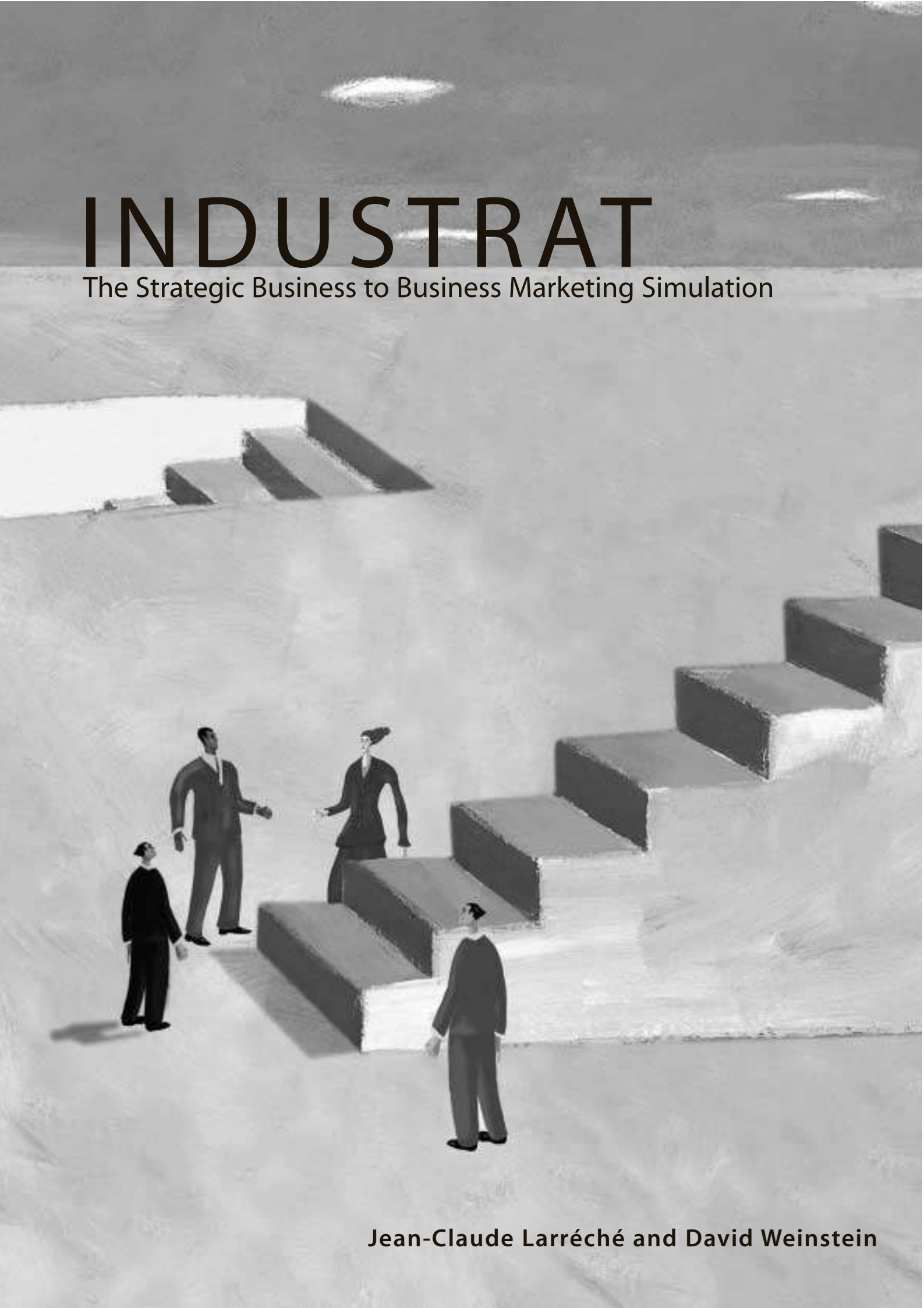
# INDUSTRAT

## The Strategic Business to Business Marketing Simulation



**Jean-Claude Larréché and David Weinstein**

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INSEAD
Fontainebleau

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# Preface

Development of this simulation was motivated by our desire to improve the traditional approach to industrial marketing education. Training and educational efforts in this important area have traditionally relied on lectures and case discussions supplemented by assigned readings and exercises. These tools represent the best that pedagogical technology has been able to offer. However, the modern competitive industrial environment requires a new pedagogical approach.

Consider pilots, fire fighters, and cardiologists, three professions requiring skillful decision-making under pressure. The heavy cost of erring in such occupations makes training through first hand experience crucial. The competitiveness of the industrial environment has intensified to a point where the costliness of faulty marketing decisions justified such analogies. Companies that could afford certain mistakes in the past would not recover from the adverse effects of those very errors today.

The success of many industrial firms may initially be attributed to their products and technological advantages. Once competitors develop similar products the technological edge tends to diminish. The market then fragments and the concept of competitive advantage and the vision guiding it must change.

Numerous publications and speeches have noted the importance of strategic market orientation in today's environment. They all conclude that one can no longer afford to make mistakes. Market orientation implies allocating resources to research and development which will yield products with a sustainable advantage, while current products and technologies, based on past strategies, compete and survive. This requires careful identification and definition of markets coupled with anticipation of competitors' behavior. It also implies an understanding of customers' behavior and their responses to the different marketing tools available in the short run.

Training in strategic marketing, which allows an easy transition from the classroom to the field, has become invaluable. Computerized simulations of actual operating environments have proven effective in the many areas which require the building of skills before actual application is called for. In industrial marketing this method should place managers in the midst of a competitive scenario and provide them with instant feedback to their decisions. The pedagogical objectives of such an exercise are to:

1. provide direct experience with the concepts and processes of strategic marketing,
2. integrate, in an operational way, concepts learned through other educational vehicles, and
3. experiment with new competitive scenarios.

The INDUSTRAT simulation provides a live experience in management where teams must bear the consequences of their own decisions. The pressure of this setting brings out enthusiasm and a competitive spirit, which create an enjoyable learning experience.

This simulation follows MARKSTRAT[1], the design that marked the beginning of a generation of realistic and strategy-oriented simulations. MARKSTRAT offers the following features:

1. Simulated periods of one year each, making long range planning possible and allowing evaluation of strategies in retrospect.
2. Emphasis on segmentation as a basis for marketing strategy.
3. Emphasis on positioning issues in the formulation of marketing strategies. Participants formulate and execute marketing strategies using recently developed positioning analysis techniques and graphics.
4. Possibilities to manage a product line through modification of existing products and the introduction of new ones. Thus, marketing resources are allocated across a portfolio of products/markets.
5. Interaction between marketing and R&D to develop products with specific physical characteristics.
6. Clear distinction, supported by marketing research data, between the physical characteristics of products and their perception by customers.
7. Extensive set of market research studies, representing modern methodological and conceptual developments in industrial marketing thought.
8. Dynamic environment containing competitive moves, emerging product categories, productivity gains through experience effects, and a changing economic environment.
9. Realistic environment where each firm has its own inherent strengths and weaknesses in brand awareness, technology, distribution, and profitability.
10. Simulated marketing phenomena which are sufficiently intricate and diverse for participants to adopt a *learning* rather than a *gaming* behavior.

MARKSTRAT is based on a durable consumer goods scenario. It goes a long way to effectively train managers for strategic marketing. The record of adoption by universities and corporations and the feedback from numerous seminars designed around this tool are testimony to the impact of this simulation on marketing education. However, for a deeper and more advanced treatment of industrial marketing strategy, the particular context of the simulated markets becomes more important.

The difference between consumer and industrial marketing environments implies obvious differences in the respective marketing mixes with respect to pricing methods, communication tools, distribution channels, and product management. Moreover, the complexity of the industrial market environment entails differences in market analysis. That is why we embarked on the development of INDUSTRAT.

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[1] Jean-Claude Larréché and Hubert Gatignon, *MARKSTRAT*, A Marketing Strategy Game, (Palo Alto, CA. The Scientific Press, 1977).

The INDUSTRAT simulation is designed to train marketers in strategy making skills while working in a simulated, yet realistic, industrial environment. More specifically, while containing the features described previously, this simulation incrementally offers:

1. Industrial target accounts containing several decision makers, each with his or her own favorite suppliers' concerns, biases, and relative influence at different instances.
2. Separation of market segmentation into macrosegmentation and microsegmentation issues. The former is based on characteristics of accounts and the latter on characteristics of decision-makers within the accounts.
3. Customer accounts with decision makers who, as industrial customers, are concerned with multi-sourcing issues.
4. Evolution of the status of suppliers from *testing* through *supplementary source* to *primary source*.
5. Separation of corporate positioning of the supplying establishment from the positing of the physical product it sells.
6. Separation of the R&D function into basic technological research and product development activities.
7. Possibility for collaboration between competing companies through licensing agreements.
8. Detailed management of the sales force and technical support organizations via employment, hiring, firing, alternative organizations, guiding, and training.
9. Detailed treatment of other industrial marketing mix decisions including list prices, price discounts, sales commission, sales force, promotion, product advertising, and corporate advertising.
10. Provision of a comprehensive set of customer based market research studies specifically designed for industrial products.

INDUSTRAT was designed as an integrating vehicle to be used in conjunction with other pedagogical tools. The simulation should ordinarily be supplemented by case discussions and lectures, introducing strategic notions and techniques, and illustrating actual application areas. The target audience for INDUSTRAT is composed of participants in advanced industrial marketing strategy courses.

A lot of people have contributed to the success of INDUSTRAT. At first the simulation ran on mainframe computers and today it is at the cutting edge of computing technology. We would like to thank those who worked with us in bringing INDUSTRAT software to where it is today. We started with Elspeth Fleming, Edward Heath and Vivian Tetard. Nick Whittaker and Roger Hall followed. They were succeeded by Chaitanya Kalipatnapu and Krishna Devadas-Murali who have taken INDUSTRAT to the Internet era, allowing instructors to run their own competitive scenarios. Another group of people to thank is our colleagues, professor in leading business schools in North America, Europe, Asia and Latin America, who have been using the simulation in their classes and providing us with invaluable feedback. Finally, we are deeply indebted to the thousands of participants in courses, seminar, workshops and corporate strategy workshops where

INDUSTRAT was used as a "backbone". We are gratified by the comments we are receiving and trying to respond to any criticism and constructive feedback. We also would like to give special thanks to Nathalie Angibaud who has been handling, tirelessly and with a smile, all the administrative issues related to INDUSTRAT. We acknowledge the financial support that the development of INDUSTRAT has been receiving from INSEAD.

Families of those who are involved in such projects as INDUSTRAT are familiar with how difficult it could get. Ours have been providing us with powerful encouragement and, naturally, this work is dedicated to them.

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# Chapter 1

# Introduction

Three skills are necessary for strategic marketing decisions: analysis, recognition of concepts, and decision-making under uncertainty. The first two skills are critical since many variables operate simultaneously in a competitive market. A simulation of an industrial market will help managers to reinforce their business judgment, sharpen their analysis and improve their sensitivity to market signals. Since uncertainties are always inherent in markets and many of the variables are beyond the marketer's control, the total removal of risk is impossible – even following exhaustive analysis. However, simulating a market teaches managers how to determine whether certain events are likely to occur and make the best possible decision, despite the presence of uncertainty. This chapter discusses strategy formulation and execution in an industrial marketing context – the area (see Figure 1-1) where these skills are so necessary and for which INDUSTRAT was designed – and then describes the simulation itself and the learning experience it will provide.

## THE INDUSTRIAL MARKETING CONTEXT

In all marketing situations one finds, on the one hand, consumers with certain needs and, on the other, suppliers competing to satisfy these needs at a profit. It is generally agreed that in spite of differences between sectors, strategic concepts like market segmentation and positioning are universally applicable. Yet, in general, industrial marketers tend to lag behind their counterparts in the consumer goods sector in the use of strategic concepts.

The reason for the lag lies mainly in the circumstances that make industrial marketing unique. Industrial purchasing is usually performed by a group of individuals on behalf of an organization. The needs of industrial purchasers differ greatly from those of consumer goods purchasers, as do the processes they follow in making a purchase and the settings in which they operate. Let us briefly discuss these general differences in order to set the scene for the INDUSTRAT simulation.

**REVIEW OF STRATEGIC CONCEPTS**

- **MARKET SEGMENTATION**
- **POSITIONING / REPOSITIONING**
- **PORTFOLIO APPROACH**
- **THE MARKETING PLAN**

**APPLICATION IN AN INDUSTRIAL MARKETING CONTEXT**

- **ORGANIZATION AS TARGETS**
- **MACROSEGMENTS AND MICROSEGMENTS**
- **CUSTOMER – SUPPLIER RELATIONSHIPS**
- **THE INDUSTRIAL MARKETING MIX**

**FOCUS ON PRIME INDUSTRIAL MARKETING ISSUES**

- **CUSTOMER PRODUCT/ NON PRODUCT NEEDS**
- **CUSTOMER DECISION MAKING PROCESS**
- **SALES AND TECHNICAL ORGANIZATIONS**
- **DISTINCTION BETWEEN RESEARCH AND DEVELOPMENT**
- **COMPETITION AND COLLABORATION**

**Figure 1-1** Objectives of INDUSTRAT

The demand of an industrial product or service is derived from the demand for yet another product or service. The buying organization involves several individuals in the purchasing process, who act and interact according to their individual responsibilities, their firm's needs, the distribution of power, and group dynamics. Some of the considerations these persons take into account are professional and rational; other considerations may not directly relate to their task but may be more personal in nature. Each participant in the purchasing process may perceive the value of a competitive supplier's products, services, and relationship differently.

An industrial product, once supplied, enters a production process which is often costly and risky to change. This gives the current industrial supplier a certain stability that other competitors must overcome. For example, a manufacturer of automobiles, whose product has been competing successfully, would hesitate to replace a proven supplier of sensitive components with an untried one. Similarly, an organization may elect to retain a second-best computer system for fear of conversion costs.

The exchange between an industrial supplier and a customer involves more than just the physical product. A supplier may offer a superior product, yet may not have success with a customer because of other factors, such as service and support. Examples of such situations abound in technology-based industries. Often, technically superior products fail because suppliers fail to provide the technical support customers require.

Transactions in industrial markets usually involve large financial commitments and organizational risks for the customer. Both customers and suppliers tend to have risk-reducing mechanisms – some formally designed and others developed through personal relationships – which lead to a diversification in purchasing and sales. Such processes strengthen the bonds between the two parties, which has an impact on the speed with which a relationship may realistically be expected to change.

Another significant feature of industrial marketing is the concentration of the market. It is not unusual to find a competitive arena with few suppliers and few customer companies. This concentration has an impact on personal relationships and competitive practices in the market.

The complexity of products and buyer-supplier relationships in an industrial market means that management of the human element is crucial in industrial marketing. People communicate with customers and transmit their feedback to the firm; people also perform technical support activities. As a result, personnel management – including hiring, organizing, motivating and firing of people – is of unique importance to industrial marketing.

Parts of the industrial sector rely heavily on research and development. Since R&D is usually costly and time consuming, and since customers prefer more than one source of supply, it is not unusual to see competitors collaborate in licensing agreements and joint ventures.

All of these distinctive features of industrial marketing are found in INDUSTRAT, as they have an impact both on the strategy formulation and execution stages of the management process. Industrial marketers should feel quite at home with the INDUSTRAT environment. The simulation is a result of observing various industrial marketing scenarios. It is fairly complex, yet well structured to provide an effective learning environment.

## INDUSTRIAL MARKETING STRATEGY

Marketing strategy is the set of choices made by a firm in allocating its scarce resources as it competes with other firms to satisfy customers' needs. Typically, resources are allocated with respect to products, geographical territories, or other strategic business units. The manner in which resources are allocated depends on the answers to the following five questions:

1. How should the market be broken down into segments?
2. Which segments constitute targets?
3. What proportion of the available resources should be allocated to each segment?
4. Which customers' needs should be satisfied?
5. How can competitive advantage be sustained or built, over time?

Making these decisions in an industrial marketing environment is a complex task. By integrating major features of industrial markets into the making of strategy, the INDUSTRAT simulation provides managers with a realistic exercise in decision-making.

## THE INDUSTRIAL MARKETING MIX

The formulation of an industrial marketing strategy is followed by a program of execution, sometimes called the *marketing program* or *marketing mix*. The marketing program specifies the various activities involved in executing the strategy including communication, pricing, sales force, and product management. Although production, R&D, and, in many cases, the sales force are not usually within the jurisdiction of the marketing department, their activities must be carried out in harmony with the marketing plan.

The formulation of the industrial marketing mix requires an understanding of the client company's purchasing behavior, the individuals involved, and their interactions. Once a marketing plan is formulated, the various activities in the plan are translated into a budget, which is evaluated in light of the income it will generate for the company. Once this evaluation is made, there may be a need to make changes in the marketing mix. Further changes may be required even at the strategic levels, as obstacles may arise during the execution of the plan.

## THE INDUSTRAT COMPETITIVE SCENARIO: AN OVERVIEW

INDUSTRAT is a simulation of six to ten years of competition among five firms which currently produce, promote, and sell a product called *Korex*. Korex is used in the manufacture of products for industrial, as well as consumer use. The five firms have been selling Korex for some time. Industry observers feel that some of the firms might be able to develop another product, *Lomex*, using new technology. Lomex would also be used in the manufacture of both industrial and consumer products. If Lomex does appear on the market, it will not compete with Korex because their applications are unrelated. However, within the firms the two products may compete for resources, which could indirectly affect their respective markets.

Each firm starts the simulation with inherent strengths and weaknesses, all relative to its competitors. Each tries to compete effectively over the duration of the simulation and to leave a strong and healthy operation at the end. INDUSTRAT is not manipulated by the simulation administrators. Instead, developments result from the actions of the five firms, and the competitive scenario in the simulation may evolve in many directions. This encourages rigorous analysis as well as creativity on the part of the five management teams.

Every firm in INDUSTRAT faces a vast array of strategic choices. Different teams may try to execute similar strategic choices in different ways. The resulting number of competitive scenarios in this simulation is thus infinite. This flexibility, made possible by the technology of strategic marketing simulations, is invaluable to the learning which takes place throughout an INDUSTRAT simulation.

Figure 1-2 illustrates the simulation process for each *period* (representing a year in the history of the industry). Each firm receives a computer-generated report. The report is analyzed and decisions are made and submitted to the INDUSTRAT administrator. The administrator enters all the decisions into the computer and produces a report for the next *period.*

## LEARNING AND INDUSTRAT

Before the simulation starts, participants should familiarize themselves with the world of INDUSTRAT, including the products, the customers, the competition, the resources under their firm's control, the administration of their company, and the paper work involved in the simulation. As each competing team will probably have just been formed, group dynamics will not have yet evolved into a steady pattern. Since each participant will be eager and the setting competitive, the pressures will be greater than in ordinary case discussions or educational activities. Once participants have adjusted to the environment, however, conceptual learning will advance.

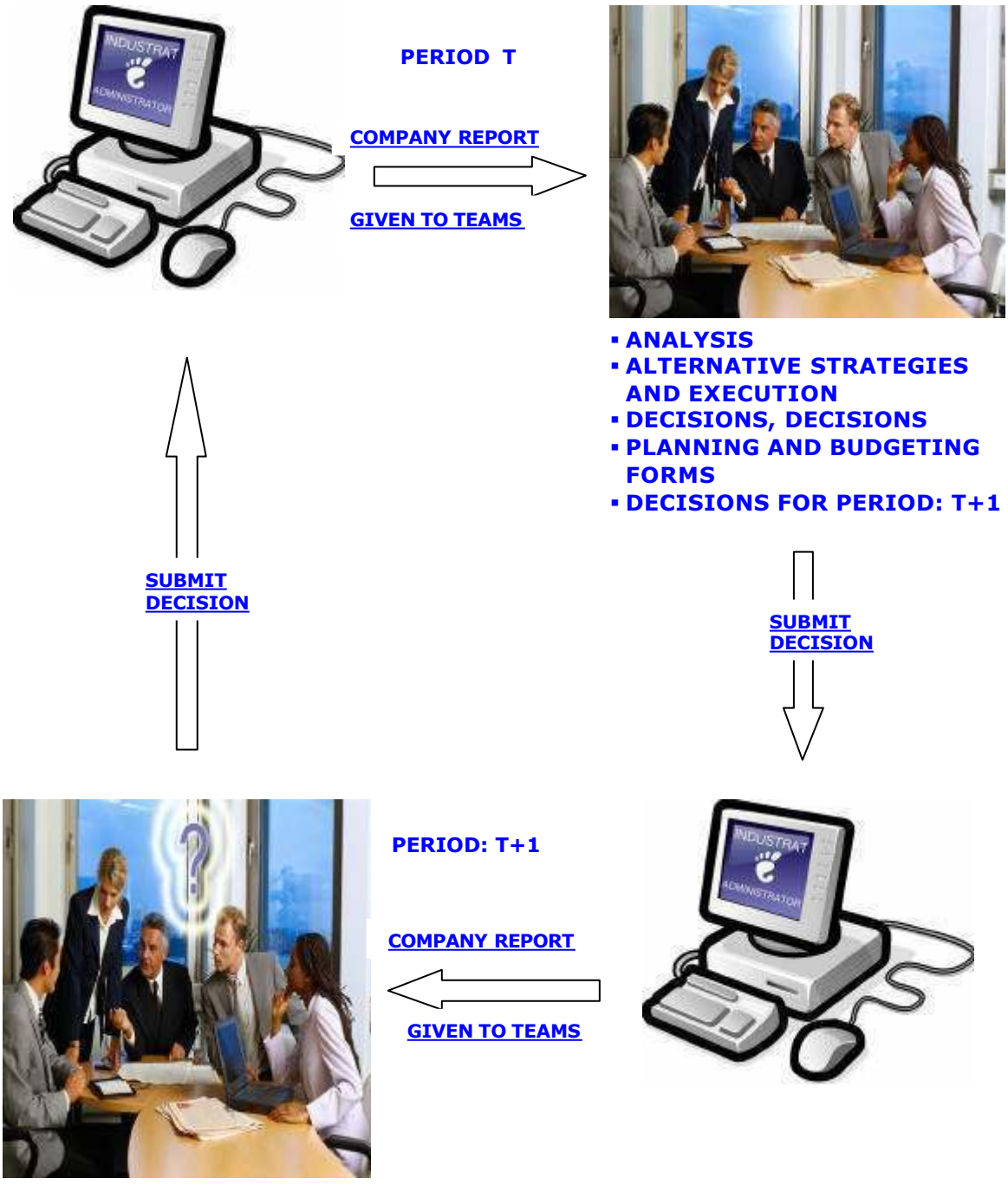



**Figure 1-2** The simulation process

Although INDUSTRAT confronts the participant with a lot of information, the environment is free of much of the noise and distraction a manager usually encounters. The educational philosophy of the simulation is that once a person has used a concept or developed a skill in a controlled environment, he or she will be in a better position to apply it under more complex circumstances.

INDUSTRAT participants should be made aware of this philosophy because the actual transfer of the skills acquired in INDUSTRAT to other environments is not automatic, but must be made by the individual. Some concepts may be immediately applicable to a particular individual's situation while others prove to be less pertinent. We believe, however, that the simulation encompasses a large variety of industries and that every participant will recognize useful and practical analogies.

**THIS MANUAL**

This manual is designed to serve as a handbook for reference throughout the simulation. It contains administrative as well as conceptual information. Participants are not expected to memorize all the details nor comprehend all the concepts at the outset. Part experience has shown that familiarity with the INDUSTRAT environment will develop naturally as the exercise unfolds.

In preparation for the simulation participants should concentrate on those parts of the manual relating directly to the first decision. More specifically, the outgoing management of each competing firm has not left behind any market research information. Consequently, in the initial decision session, competing teams will not analyze such studies.

Similarly, participants won't make decisions about research and development nor on issues of licensing and collaboration with competitors during the first period. Participants should read the parts of this manual devoted to the aforementioned subjects only to develop an initial familiarity with the topics. Individuals will grasp certain details and concepts early on and acquire others by trading information with their teammates.

# Chapter 2

# The INDUSTRAT Competitive Setting

Five major firms compete for Korex sales in the INDUSTRAT world. Other competitors have either left the market or are not regarded as significant enough to be of structural consequence. The events taking place in the market during the simulation will be the result of interaction among the five competitors. This chapter introduces the participant to the general economic environment and to the Korex industry and its market.

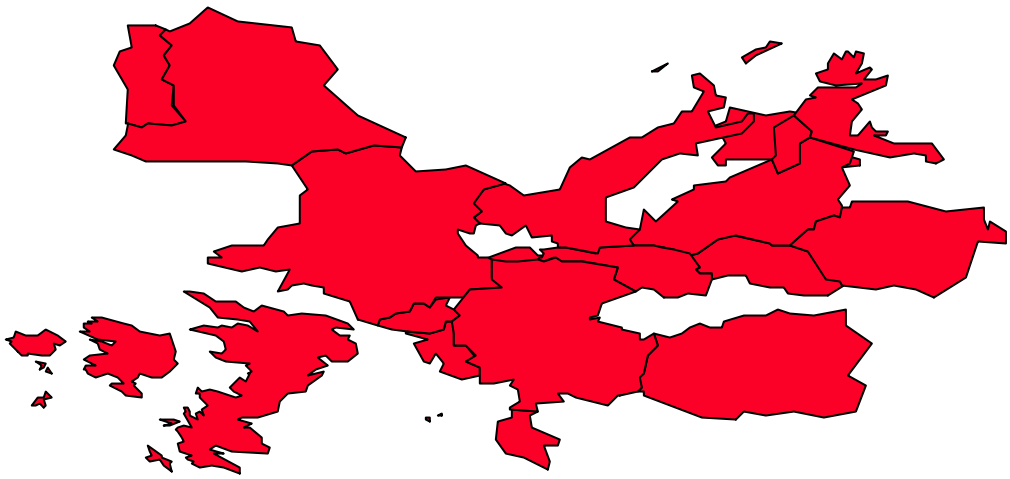
## THE ECONOMIC ENVIRONMENT

The INDUSRAT competition takes place in a major, highly developed, industrialized country (see Figure 2-1). The monetary unit in the country is the *IM* (INDUSTRAT Money, pronounced eem), which is represented by the symbol $. The population in this nation has reached the 250 million mark, having followed a stable annual growth rate of 1 percent per annum for the last ten years. Major economic trends in this country have been similar to those of other industrialized countries in Europe, North America, and the Far East. The country is slowly emerging from a recession which lasted over five years, and economists predict a slow but solid economic recovery. The business sector has reacted favorably to the change of economic climate and the stock markets have been bullishly boasting rising price indices.

The last three years have posted an annual real GNP growth rate of 3 percent. Inflation, which reached the 15 percent level five years ago, has been brought down slowly and is now 10 percent per annum.

The government of the country has even supported free enterprise, regardless of the political party in power. It generally refrains from direct economic intervention and is severely criticized by opposition parties when it resorts to tools beyond the traditional fiscal and monetary means. However, there is one area in which no administration has hesitated to intervene – the protection of economic competition. Elaborate government agencies follow the evolution of industry and intervene forcefully when any collusion or monopoly threat is suspected. A series of laws protect free enterprise and the sanctions for proven restriction of competition are severe. A famous recent case of collusion between competitors on prices and markets ended with senior executives serving time in prison.



INDUSTRAT
Population: 250 million
**Figure 2-1***: The Economic environment*

The government has even intervened in some cases to keep firms from disappearing from the market in order to maintain a minimum level of competition. Recently the chairman of the board of a major firm negotiated a government guarantee for a large loan used to modernize factories and introduce a new line of products. The performance of this firm, following controversial act, has been very promising and the value of its shares on the stock market has regained its traditionally strong level.

## THE INDUSTRY

INDUSTRAT firms compete in the manufacture and marketing of industrial products based on radiochemical processes. These products serve as input for a variety of applications and industries. None of the five competing firms is forward-integrated in production, which eliminates the consideration of any internal selling. At the opening of the simulation, each firm supplies four products to its customers. Subsequently, they may introduce new products and offer a wider product line. However, each firm is limited to a maximum offering of ten products on the market at any given time.

The strategic positions of the firms differ depending on their past history. Previously, each firm followed a separate path in research and development reflecting the different assessments of the future directions of the market. The firms also differed in the way they formed and executed strategies, which influenced their effectiveness, thus leading to the relative strengths and weaknesses inherent in each firm.

The following is a description of the products marketed by the firms, the accounts, (customer organizations), the individuals involved in the accounts' purchasing decisions, and the purchasing processes themselves.

**The Products**

Currently the five firms compete only in the Korex market, a multipurpose, radiochemistry-based product. Although it has been on the market for almost fifteen years, use of this product was initially restricted, due to the complexity and the cost of the production process. Three years after its introduction, commercial applications started to spread as the manufacturing technology simplified. Subsequent growth rates climbed up to 40 percent six years ago. However, in the last three years the Korex market has not grown as fast. Still, since the versatility of the product has not been exhausted, overall market growth is expected to continue even thought smaller manufacturers have either left the market or were absorbed by the industry leaders.

Korex comes in various physical forms according to the desired application. It may be delivered as a liquid, powder, paste, fiber, or in various solid forms. Industry experts have been quoted as saying, "Not a day passes without a new Korex application being discovered." Analysts have grouped the various areas of application into three major categories: instrumentation, communication, and consumer products. Through these categories Korex finds it way into construction, agriculture, medicine, shipbuilding, packaging, textiles, and electronics.

Each Korex product is defined by its performance characteristics. The characteristics and their respective measurement standards are

| | Characteristic | Measurement |
|---|---|---|
| 1. | Resistance | Ohm ( ? ) |
| 2. | Suspension | Micro-second (ms) |
| 3. | Frequency | Kilo-Hertz (kHz) |
| 4. | Density | Micro-gram per cubic millimeter ($mg/mm^3$) |

Although each physical characteristic may theoretically be specified for production, there are technological barriers to surmount before a firm may actually manufacture combinations of certain specifications. These barriers are usually overcome by research and development. Until that time, products developed by R&D only, may be manufactured.

Each INDUSTRAT firm currently produces four Korex products. The names and the actual specifications of these products are displayed in Exhibit 2-1. The first column in this exhibit shows the products currently on the market. It is easy to recognize the firm selling the product in the INDUSTRAT name convention, as illustrated in Figure 2-2. The first letter, K represents Korex product category. The second letter, A, E, I. O, or U represents the competing firm, 1, 2, 3, 4, or 5, respectively. The last two letters are freely selected by each team to designate its own products.

The next four columns display the maximum and minimum that each of the performance characteristics may take, as well as the actual values for the products present on the market at the start of the simulation. The last column in Exhibit 2-1 is the base

production cost of the product as per the first 100,000 units produced, given its presentation production method. The firms do not have identical products on the market and, in fact, there is already some degree of specialization. As competition evolves, other Korex products will appear on the market, and some of the present ones will be modified or discontinued as firms adapt the physical characteristics of their products to the needs of the market place.

It is important to note that the perception of products may not exactly coincide with their physical specifications. Customers may, for example, perceive products as very similar within a certain range of a performance characteristic, while their actual physical measurements are significantly different. On the other hand, products which are similar physically may be perceived as significantly different by customers. In fact, for reasons of past performance or corporate image, two physically identical products may be perceived as different.

| | *Resistance (Ω)* | *Suspension (μg)* | *Frequency (kHz)* | *Density (μ/mm³)* | *Base Costs ($)* |
|---|---|---|---|---|---|
| **Minimum** | 500 | 10 | 30 | 500 | 100 |
| **Maximum** | 12000 | 105 | 200 | 800 | 500 |
| | | | | | |
| **KALA** | 10000 | 50 | 100 | 750 | 150 |
| **KAST** | 1500 | 20 | 90 | 600 | 300 |
| **KAMI** | 6500 | 40 | 110 | 700 | 175 |
| **KAPE** | 1500 | 45 | 85 | 650 | 280 |
| **KENT** | 2000 | 50 | 90 | 700 | 250 |
| **KEPI** | 4000 | 50 | 95 | 600 | 300 |
| **KEEP** | 3000 | 40 | 130 | 700 | 300 |
| **KELY** | 1300 | 50 | 120 | 650 | 230 |
| **KILT** | 2800 | 100 | 90 | 600 | 100 |
| **KISS** | 3000 | 40 | 100 | 550 | 190 |
| **KIDU** | 6000 | 55 | 120 | 750 | 160 |
| **KINE** | 2800 | 80 | 110 | 700 | 150 |
| **KOPA** | 3500 | 20 | 115 | 550 | 250 |
| **KOLD** | 3000 | 50 | 130 | 650 | 300 |
| **KOPS** | 3000 | 45 | 120 | 600 | 300 |
| **KOOK** | 2000 | 30 | 120 | 750 | 280 |
| **KUST** | 4000 | 30 | 115 | 750 | 320 |
| **KUZZ** | 3500 | 40 | 115 | 550 | 300 |
| **KUTE** | 3000 | 75 | 80 | 600 | 250 |
| **KURE** | 3000 | 50 | 80 | 650 | 310 |

**EXHIBIT 2 -1** Physical Characteristics and Base Costs of Korex Models Currently Offered on the Market

The new product category Lomex, which may appear on the market, is based on bioengineering technology (see Figure 2-3). This product represents a basic research breakthrough by the laboratories at Stratland University, which made its research available to the industrial community. However, additional substantial investment is required for further research and development in order to manufacture the Lomex products. The industry is well positioned to develop, manufacture, and market Lomex products, which would not be competing with Korex for customers as the applications of the two are not related.

The main physical characteristics of Lomex and their respective measurements are:

| | | |
|---|---|---|
| 1. | Convexity | degree ( °) |
| 2. | Conductivity | micro-second (ms) |
| 3. | Purity | percentage (%) |
| 4. | Maximum Energy | micro-watt (mW) |

The physical minima and maxima which each of these characteristics may take are displayed in Exhibit 2-2. As Lomex represents a new technology, the market reaction to the introduction of such products is unknown. The Lomex market may or may not develop in the way of the Korex market, depending on the rate at which new applications are developed and diffused. The naming of Lomex products will follow a similar pattern to that of Korex. The first letter, L represents Lomex and the second letter, A, E, I, O, or U identifies the firm. The remaining two will be determined by the firm's management.

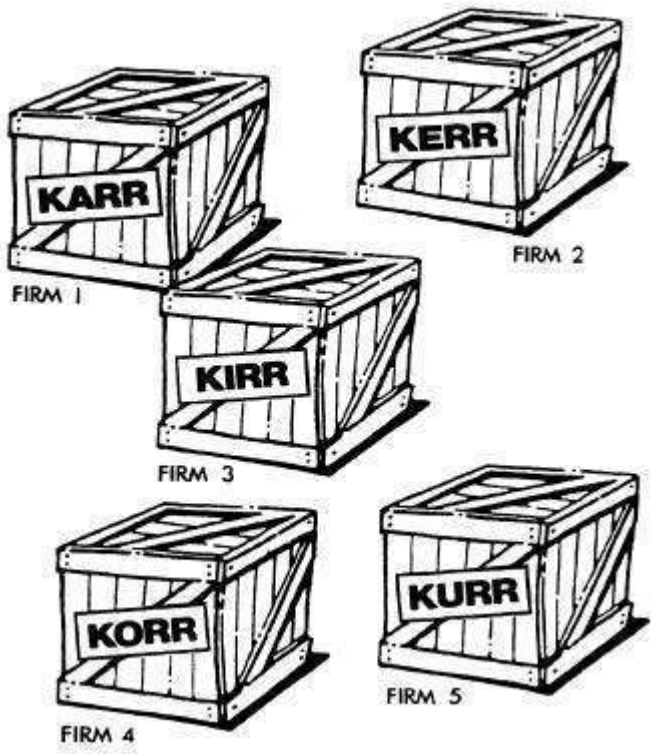



**FIGURE 2.2** The competitors

**Customer Companies and Macrosegments**

Because the firms in INDUSTRAT offer multipurpose versatile products, the account[2] base is extremely heterogeneous. Current and prospective accounts may differ greatly in their application of Korex, and will eventually with Lomex. In fact, they, in turn, sell their own products to a large variety of customers. This diversity poses the question of how much one should adapt products and services to satisfy the needs of individual accounts. The greater the adaptation to an individual client's needs, the more satisfied the client is likely to be. On the other hand, standardization would result in financial benefits for production economies.

To maximize the clients' satisfaction while maintaining adequate scale economies, marketers group similar customers into separate market segments. The segmentation of industrial markets may follow two levels, *macrosegments* and *microsegments*. Macrosegmentation may follow the general characteristics of the account. Microsegmentation considers the individual decision makers in the buying organizations who participate in the purchasing process; in other words, persons who occupy similar organizational positions in different customer companies.

Like many other industries, INDUSUTRAT firms have developed various segmentation schemes in the face of changing market conditions. Currently, the industry uses *geographical regions, potential account size,* and *end product category* to classify client companies. The country has been divided into three territories, *eastern, central*, and *western.* Potential account sizes are grouped into *large, medium*, and *small*. The end product categories currently used are *instrumentation, communication*, and *consumer products*. Each account may be classified into one of the categories in each of these schemes.

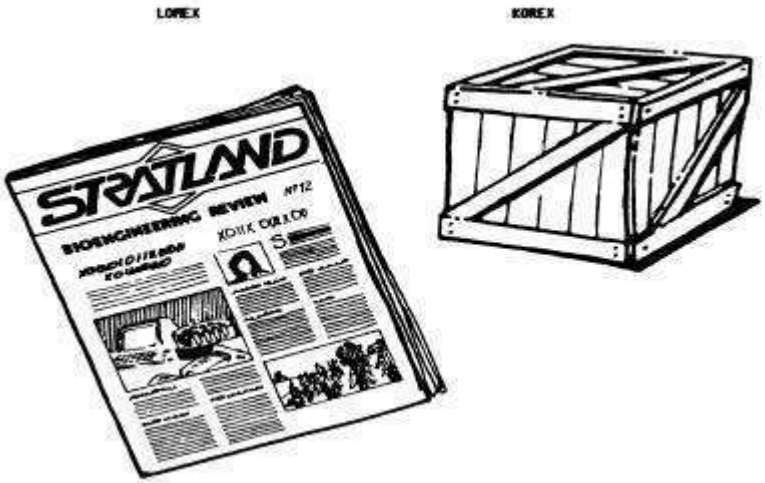



**Figure 2-3** The Products

[2] For the purpose of this simulation the terms *account, client company*, and *customer company* are equivalent.

The communication industry is currently the largest end-use segment in terms of Korex sales. This industry includes end products in telephone, satellite, and computerized networks. The instrumentation industry also employs varied applications of Korex for fine precision measuring instruments. Consumer products represent the remaining applications of the Korex market. This category is regarded as the least explored to date.

While the consumption of Korex has enjoyed an average annual growth of 10 percent over the last three years, industry analysts predict slower overall sales in the future. Indeed, it is only in the country's central region that sales continue to grow, while declining elsewhere. In terms of end uses, sales in the instrumentation field are expected to stabilize, while in the consumer products' category, performance has traditionally been sluggish. However, optimism has been expressed about this segment for several years. The major obstacle has been the cost of applying Korex products in comparison with their substitutes. Analysts agree that as the cost of product is eventually reduced, the demand for Korex will increase dramatically. As the market develops, the required investment for the usage of Korex is expected to decrease. This development may draw new client companies into the market.

| *Characteristics* | *Minimum* | *Maximum* |
|---|---|---|
| 1. **Convexity** (°) | 5 | 30 |
| 2. **Conductivity** ($\mu$s) | 50 | 150 |
| 3. **Purity** (%) | 15 | 80 |
| 4. **Maximum Energy** ($\mu$W) | 200 | 700 |

Note: Expected manufacturing cost per unit at the start of the simulation = $40-100

**EXHIBIT 2-2** Maxima and Minima of Physical Characteristics of Lomex Products

### Participants in the Purchasing Decision and Microsegments

Industrial customers typically follow a complex purchasing process and this industry's clients are no exception. The main reason for this complexity is the existence of the organization (tasks, responsibilities, and procedures) for purchasing. Parts of the organizational structures are formally designed and others evolve informally. The group of individuals in the purchasing process makes up the *decision making unit* (DMU). Each member of the DMU contributes to the purchasing process, using his or her expertise, professional responsibilities and authority. The DMU may also include organizational procedures through which the members exchange information and resolve conflict. DMUs usually contain informal members and informal interactions which the participants use to supplement the formal process.

Two issues must be taken into account. First, the identification of the major participants of the buying center, their individual concerns, and the pattern of their interaction is crucial. Second, since the dynamics of the purchasing process vary by company, the heterogeneity of the market amplifies the variety of DMU structures with which the firms must deal.

A multi-client study sponsored by INDUSTRAT firms revealed that in spite of the diversity, customer companies do have similar profiles of the participants involved in their purchasing processes. A typical DMU is composed of four individuals, which in this industry are called production managers, engineering managers, purchasing managers, and general managers. Although formal titles vary from company to company, these terms fit the major decision makers and their counterparts in other companies who share common needs and responsibilities (see Figure 2-4).

*Production managers* are responsible for the manufacturing processes for Korex, and eventually for Lomex. These persons typically have one or several manufacturing plants under their control, each including several facets of production. *Engineering managers* are responsible for the technical specifications of the product. They evaluate materials, components, and production processes to fulfill the specifications required by their customers, or to achieve cost reductions. *Purchasing managers* procure alternative sources and continuity of supply, and minimize the purchasing costs. At the top, *general managers* have the overall responsibility for the performance of their companies, and their preoccupations span marketing, production, finance, R&D, personnel, and other managerial functions.

**The Purchasing Process**

The existence of the various accounts and persons involved in each purchasing decision implies a diversity of purchasing processes. The interaction between persons and the variety of group dynamics and management styles make every account's purchasing process unique. This diversity poses a managerial choice as to the extent to which the structure of an account is considered in the execution of strategies. At one extreme, managers may try to become intimately aware of each individual account, each relationship, and the behavior of the people in question. On the other extreme, management may disregard its accounts' various purchasing processes and rely instead of sales personnel and others who are in touch with the individual customers to handle the relationship.

The actual choice is general made through market segmentation, which assumes typical profiles of accounts representing each segment. An understanding of the typical account purchasing process has evolved over the years, resulting in a systematic framework which is generally applicable to accounts in this industry. It does not represent any single company in complete detail, yet captures enough of what actually takes place in many cases. This framework is managerially meaningful to the firms competing in INDUSTRAT. It divides the purchasing decision into the chronological stages of the adoption process that a product must undergo to become a primary source of supply.

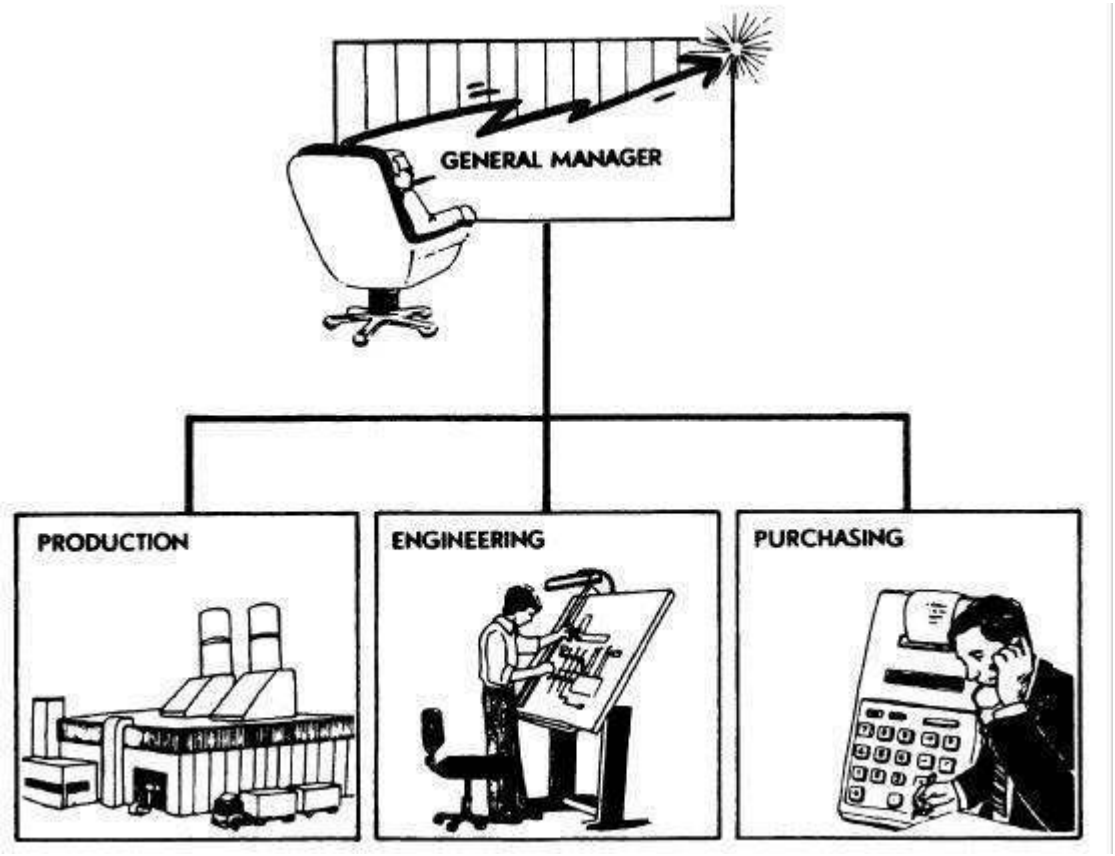



**Figure 2-4** The decision making unit

Four stages have been identified: awareness, testing, supplementary source of supply, and primary source of supply (see Figure 2-5). *Awareness*, in the industrial marketing sense, implies adequate familiarity with the product. At this stage the client receives information about the existence of the product and its specifications via advertising, trade shows, discussions with other professionals, and salespersons' calls. Samples are shown, documentation is provided, and presentations are made. The industrial client typically carries out an independent search for information about the performance of the product. This stage ends when the client has enough information to decide whether the product should be tested on a pilot basis.

In the next stage, *testing*, limited production runs are performed at the client's plant to evaluate the performance, possible technical problems, and the impact on the cost structure of the client's end product. Following the technical discussions, negotiations start on delivery capabilities and price ranges. Having tested the product thoroughly, the client decides whether the technical and commercial benefits justify purchasing the product for manufacture.

If the decision is positive, the product moves on to the *supplementary source of supply* stage. At this point, it may compete with the present major suppliers and, perhaps with other supplementary sources of supply. The passage to the next stage, *primary source of supply*, will depend on the performance record of the product and the technical and commercial support of the supplier. Suppliers acting as primary sources are in a privileged position since customers rely heavily on them. Although these stages are consecutive, there may be cases when products leapfrog the supplementary stage if there is a gap for which there are not substitutes on the market.


**Figure 2-5** The purchasing process

The DMU structure is typically related to the decision process and the decision makers involved. Each participant may interve ne at any stage, given his or her task and concern. For example, one decision maker may be interested in technical matters while another may be involved in commercial considerations.

The differences of concerns and organizational power among decision makers from one stage of adoption to the next may be represented by a matrix form. Exhibit 2-3 displays a fictional example of how this framework may be used in this industry to describe a possible profile of a complete buying process. The stages of the purchasing process are seen horizontally, and each column shows the distribution of involvement of the participants. The example shows how the involvement of the production manager in this particular account is greatly reduced when a product is to be elevated to the primary supplier status. On the other hand, the role of the purchasing manager greatly increases as the firm progresses in the adoption process. The structure of decision making may vary across market segments, implying different approaches in communicating with DMUs at different points in time.

Competition in the Korex market is keen. Supplementary sources sometimes replace primary ones which, in turn, may be disqualified altogether. Therefore, a single supplier may simultaneously have different relationships in the market. It may serve as a primary source of some groups of clients, supplementary to others, or still be in the testing or awareness formation stages or unknown to the rest.

*<----------Stage of the Adoption Process----------→*

| *Decision Maker* | *Awareness (%)* | *Testing (%)* | *Supplementary Supplier (%)* | *Primary Supplier (%)* |
|---|---|---|---|---|
| **Production Manager** | 10 | 45 | 45 | 25 |
| **Engineering Manager** | 50 | 25 | 10 | 10 |
| **Purchasing Manager** | 30 | 15 | 25 | 35 |
| **General Manager** | 10 | 15 | 20 | 30 |
| | 100 | 100 | 100 | 100 |

*This is an example only and these figures are of no use for actual INDUSTRAT decisions

**EXHIBIT 2-3** Framework for Analysis of a Purchasing Process*

**Distribution**

Sales by INDUSTRAT firms to customers are done directly, with no middlemen. Purchase orders are given either to salespersons or to their regional offices, which are then responsible for the logistics of delivery and technical support. Although there are some local distributors who carry Korex products, their combined share of the market is insignificant, as they handle either very small customers or intermittent marginal orders.

# Chapter 3

# Administrative Structure of the INDUSTRAT Firm

The organization of a firm represents decisions made on the allocation of tasks and responsibilities in view of the competitive environment. The administrative structure of an INDUSTRAT firm represents the stage of organizational evolution reached in the Korex industry. All five competing firms are organized along similar lines and represent a strong market orientation. In other words, analysis and decisions made by marketing determine the employment of resources in research and development, production, sales, technical support, and other functions.

In order to translate market orientation into profits, each firm's marketing department constitutes a profit center. Decisions made by marketing are aimed at maximizing the firm's profit. This chapter described the administrative structure governing marketing and its relationship with other departments.

## MARKETING AS A PROFIT CENTER

In a competitive market, the posture the firm chooses to take is decisive. Production, finance, and R&D are concerned with the internal workings of the organization. Marketing is the function responsible for the relation of the firm to the external environment. The understanding that the marketing function has of the market and the choices it makes will lead the firm to adopt one posture or another. More specifically, in INDUSTRAT, marketing is responsible for

1. Monitoring market and competitive evolution
2. Periodically assessing the firm's own strengths and weaknesses.
3. Determining which product should be offered in the long run and what should be the annual R&D effort to develop them, if any.
4. Determining which products, at what prices, should be offered in the short run.
5. Establishing an annual sales forecast.
6. Negotiating with competitors about licensing or other collaborative agreements.
7. Determining the allocation of promotional and support efforts in the field and influencing the orientation of the sales and technical forces.

The annual company report (see Appendix A) reports on the last year's results and the authorized annual expenditure budget by corporate management for the next year. This budget covers R&D projects, promotion, technical support, advertising, sales and technical forces, corporate communication, and marketing research. Although it is not involved in other activities (finance, purchasing, etc.), marketing is responsible for any inefficiencies it may cause due to bad decisions. In such cases, as described text, the losses caused by such inefficiencies are charged against the income contribution that marketing generates.

## DETERMINATION OF THE MARKETING BUDGET

Figure 3-1 provides a visual flow of the budgetary structure of marketing. The authorized expenditure budget is spent on payments to other departments within the firm, as well as to outside parties. These expenses are used to generate sales and the resulting net marketing contribution.

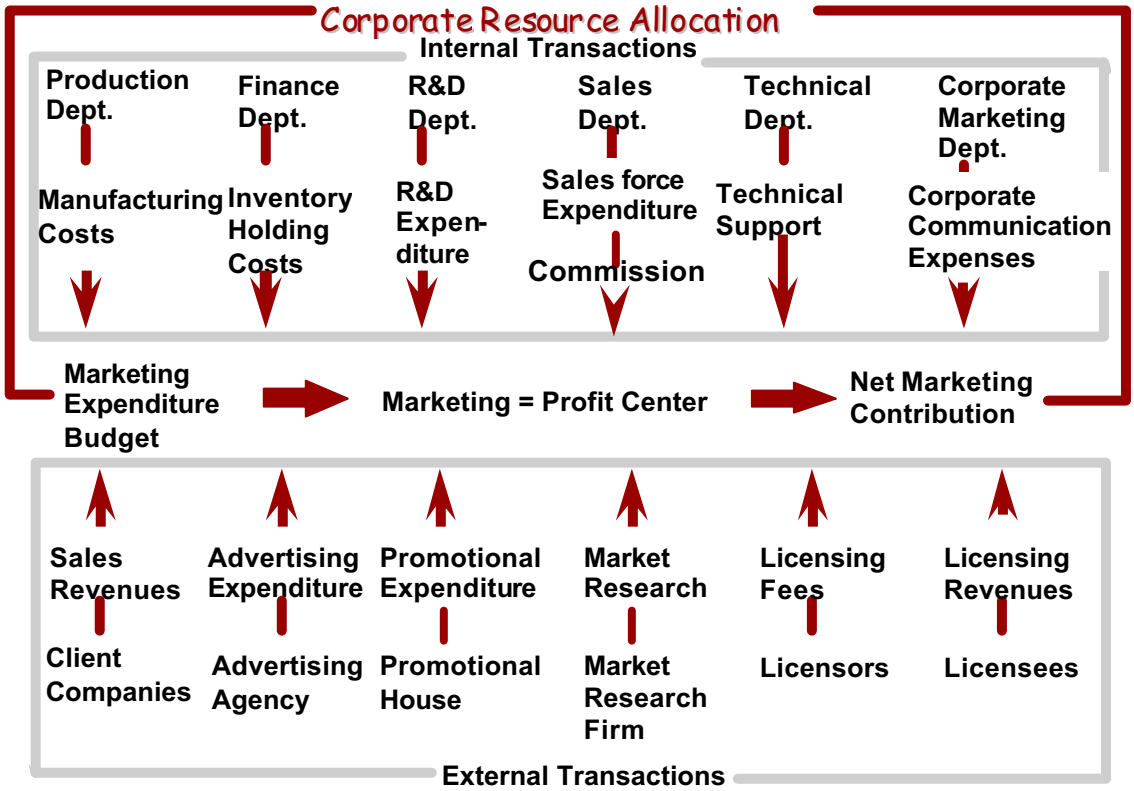



**Figure 3-1** The marketing department as a profit center

Corporate management uses the annual net marketing contribution as the source of funds for dividends, debt repayments, investments, and departmental expenditure budgets in the following year. The formula for authorized marketing expenditures takes into account, among other considerations, the contribution marketing generated during the last year. It may be expected that, in case of insufficient contribution, a minimum expenditure budget will be provided for marketing at all times. Beyond this minimum, as contribution rises, the authorized expenditure for the following period will also be increased. However, the growth in authorized marketing expenditures will not grow at the same rate or the growth in contribution. At high levels of contribution, where the absolute level of authorized expenditure is already high, additional authorization would be proportionally lower, while at a low level of contribution they would be higher. As the contribution becomes greater, the proportion allotted to marketing expenditure is thus reduced in order to prevent unnecessary overspending.

The marketing budget may be modified following negotiations between the firm and the INDUSTRAT administrator, who represents either the corporation or other external parties. The administrator evaluates plans presented by the teams and may readjust the budget upward, grant loans, or authorize other arrangements, if convinced of the necessity or desirability of the change. The repayment of loans is deducted from either marketing's contribution to income or from a future expenditure budget at an agreed upon time.

## INTERACTION WITH OTHER DEPARTMENTS

Although the R&D and production departments are profit centers, they may sell their products and services only to marketing. Marketing obtains these products and services via transfer prices and lump sums. Marketing forecasts its next period's sale level for any given product. These forecasts are used by production to plan their level of activity during the year.

Marketing pays the production department for these products only upon sale in the market. Excess inventory is not transferred to the marketing department until it is actually sold to clients. In the meantime an inventory holding cost is charged against the contribution marketing generates. This cost is computed on the basis of a last-in first-out (LIFO) manufacturing cost of the inventory and on the prevailing rate for inventory holding costs. When products are modified or removed from the market, the obsolete inventory write-off is charged to the relevant year's contribution at the current transfer cost.

The working relationship between R&D and marketing is such that marketing specifies projects for R&D to perform. Each project is defined by technical specifications and an annual allocation of funds from the marketing expenditure budget. Other major production and R&D investments are funded directly by corporate management, and marketing has no control over how these funds are spent. However, corporate outlays normally try to sustain the strategies pursued by marketing.

# Chapter 4

# Information for Industrial Marketing Strategies

INDUSTRAT was designed to enable the formulation and execution of strategy over several years in a competitive environment. The competing firms must deal with the long and short term, and make the necessary trade-offs when the two are in conflict. Since the simulation is strategically oriented, some short term tactical issues, such as the negotiation process with individual customers, have been delegated to lower echelons in the organization.

There are two levels of management decisions in INDUSTRAT:

1. Resource allocation by major strategic programs (products, market segments, and technologies) and
2. Marketing mix decisions.

The first level represents the firm's commitments, that is, investments and risks for at least one complete year. The second level represents a shorter run execution question. At both levels, choices made by the marketing department involve activities in the other departments implementing these choices.

The nature of the INDUSTRAT marketplace is dynamic; customers' needs may change as may their preferences. INDUSTRAT firms constantly evaluate the market and plan strategic and tactical steps. At the same time, the pattern of interaction between customers' behavior and competitive actions is also influenced by the economic and regulatory environments.

Strategy formulation and execution require continuous information-gathering about the INDUSTRAT environment and its structure. Some of the information is covered in this manual. However, observing customers' and competitors' behavior is a crucial task performed independently by each firm's management team. To this end, formal information is available about the market via a free industry newsletter and through commercial market research studies designed to monitor the evolution of the market. A list of the studies available is as follows:

**Suppliers**
1. Supplier Survey
2. Perceptions of Suppliers

**Korex**
3. Awareness Intentions
4. Demand Analysis
5. Market Shares
6. Org. Buying Process
7. Semantic Scales
8. Perceptual Map

9. Market Forecast

**Lomex**
10. Awareness Intentions
11. Demand Analysis
12. Market Shares
13. Org. Buying Process
14. Semantic Scales
15. Market Forecast

**Competitive Information**
16. Competitive Information

The purchase price of each market research study is announced before the beginning of each year. This cost is automatically charged to the firm's marketing expenditure budget and is included in the annual company report. The remainder of this chapter will discuss how market research information in INDUSTRAT may be used for the analysis of segmentation, positioning, and the market's dynamics. These specimen studies are presented in Appendix B.

## MARKET SEGMENTATION AND CUSTOMER NEEDS

The essence of market segmentation is that members of a segment have similar needs which are, on the average, significantly different from others of other segments. By aiming the marketing program on a market segment, the firm expects the segment to perceive that its offering fits it needs more than other competitive offerings. On the other hand, by trying to attract several segments simultaneously with only one marketing program this differentiation is compromised.

The dimension used to classify buyers into segments is a *segmentation scheme*. The scheme may follow two different directions. It may:

1. identify groups that manifest different purchasing behaviors, find the characteristics of the group that relate to these preferences, and define a segmentation scheme accordingly, or
2. identify groups with different characteristics and search for purchasing behavior differences relating to these characteristics.

Companies generally follow a mixture of both approaches over time, resulting in a segmentation scheme with which management feels comfortable. If the segmentation scheme parallels the different purchasing behaviors of the segments, the scheme will be strategically meaningful. Decisions may then be taken as to how to adapt to each of the segments. On the other hand, a segmentation scheme reflecting similar behavior across the segments may cause duplication of effort. A common approach to such segments would be more economical.

The evolution of customer needs and competitive activity may call for the use of different segmentation schemes. For example, while customers may be sensitive to product quality today, they may be more sensitive to service tomorrow. Need priority may evolve differently in different segments; the needs may either converge or grow apart over time. Such changes may render a segmentation scheme obsolete and require the adoption of another for future strategy. INDUSTRAT firms may use three macrosegmentation schemes: *geography, size of the account*, and the *end product*.

As seen in Appendix B, market research information in INDUSTRAT may be presented according to only one of the macrosegmentation schemes (see Figure 4-1). It is management's choice as to which would be most useful. The firm may ask the suppliers of market research to investigate which macrosegmentation scheme would reveal significant differences between the behaviors of the segments.

The market researchers then analyze the similarity among the measurements within and between the segments for each segmentation scheme. The scheme regarded as optimal is the one in which there is a maximum of similarity within the segments, and a maximum of dissimilarity between the segments' averages. The scheme yielding the most such intergroup differences is presented by the market research supplier as optimal. This is merely a statistical optimum, and the firm may prefer to disregard it and to use other segmentation schemes.

When ordering a market research study, the firm must specify one macrosegmentation scheme by which it would like to have the data displayed.

The firm's choice here will have an impact on the market research costs. This cost is based on the methodology used and the sample size necessary for meaningful results. Segmentation implies a separate independent study of each segment, thus increasing the necessary sample size. An optimal segmentation study requires a special analysis, which makes the study more expensive. More specifically, the basic cost of a study, based on aggregate statistics, is multiplied by a factor of 1.5 for a macrosegmentation scheme and by a factor of 2.0 for an optimal macrosegmentation scheme.

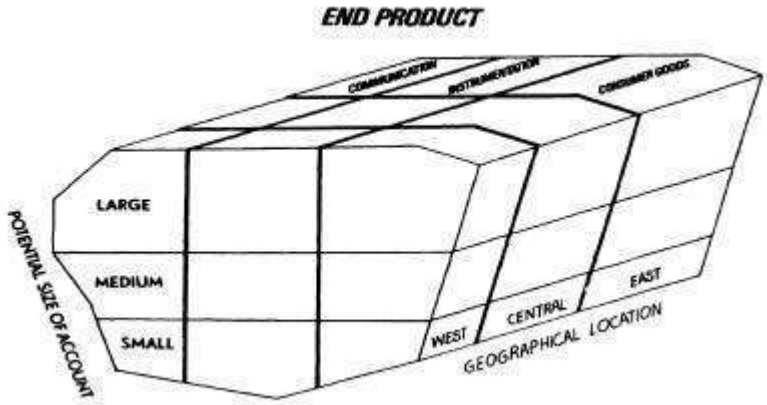



**Figure 4-1** Market macrosegmentation

## POSITIONING OF COMPETING SUPPLIERS

Physical specifications of products are the basis for satisfying needs in the marketplace. Yet a firm's success may result only partly from its products' quality. The purchasing of industrial products is, in many cases, part of a relationship that goes beyond the product, although in the longer run a fit at the product level is a prerequisite for a good relationship.

The choice of product commits the customer for at least the short run. Switching costs are high in many cases, since a typical customer will adapt the production system to a particular set of specifications. Similarly, his or her customers may have to adapt their production process to the changes. A purchasing decision is thus a commitment to a relationship and the decision to enter into it or to discontinue it is made cautiously by customers. Market Research Study 1. *Supplier Survey*, provides information about awareness of clients and preferences for the five suppliers present on the market.[3] The individuals questioned are samples of decision makers in client organizations.

Each customer is concerned with, in addition to the quality of the product and its price, the continuity of supply, the technical support, the reputation of the supplier, strategic information provided the quality of the suppliers' sales force, and other ancillary services. Market research experience in this industry has grouped these various concerns into three general dimensions and labeled them:

1. Technical aspects (TEC)
2. Commercial aspects (COM)
3. General reputation of the corporation (REP)

The relative importance of these dimensions may vary by decision makers, applications, and current competitive conditions. A customer would first try to satisfy high priority needs before considering low priority ones. Study 2, *Perceptions of Suppliers*, provides information on the positioning of competing suppliers in INDUSTRAT as perceived by decision makers in the market. The relative importance of the three dimensions (TEC, COM, and REP) is given by percentage. Each respondent in this study is asked to represent his or her requirements by rating, on a scale of 1 to 7 for each dimension, his or her *ideal supplier*.[4] The respondent then rates each one of the competing suppliers by the same scale.

When combined with the ideal points, the supplier ratings yield the positioning of the competing suppliers in a perceptual space reflecting customer needs, requirements, and

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[3] *Awareness*, in this study measures spontaneous, unaided recall. Thus, respondents may not mention all the suppliers, although they are familiar with them. *Preference* is based on considering all competitors. Interviewers remind their respondents of the availability of the competing suppliers before the question on choice is posed.

[4] The term *ideal* represents, in the jargon of market researchers, the profile of the most suitable supplier. Questioning techniques assure that the respondent, when thinking of such a supplier, takes realistic tradeoffs into account. In other words, the posture of an ideal supplier represents the maximum satisfaction which the client expects while not trading away the supplier's economic survival.

preferences. Other things being equal, the respondent would prefer to do business with the supplier closest to the ideal point. The figures provided in the study are averages of the responses for the decision makers in each macrosegment.

## PRODUCT FAMILIARITY AND PREFERENCES

Study 3. *Product Awareness and Preference Survey: Korex Market*, provides information about decision makers' familiarity with and relative interest in the products offered on the market. The first table shows the percentage of the respondents who showed awareness of the products in each market segment. The next table displays the preferences that respondents have shown for the products offered on the market.

## MARKET STRUCTURE

Because customers are cautious about their choices of supply, an important objective to a supplier may be to achieve the status of a major source of supply, which represents a relatively strong client relationship. Study 4, *Demand Analysis: Korex Market*, monitors the status of primary sourcing behavior by clients. It first displays the size of the market by the number of prospective clients, their global purchasing for the period in value and unit volume, and the average value per client. This information is displayed for the overall market and for market segments. The study then gives the percentages of purchases originating from suppliers designated as *primary suppliers*, with the balance of purchases bought from supplementary suppliers. Finally, the last figure represents the average number of suppliers per customer in the market.

## MARKET SHARES

Market research allows the monitoring of the performance of different products along the three chronological stages of the adoption process, testing, supplementary, and primary sources. Each product is in one of the three stages with each client. It may be useful to see how the product is performing, if customers are each of the stages are examined separately. Study 5, *Market Shares Survey: Korex Market*, estimates the proportion of accounts that were testing each product and the accounts that used them as supplementary and as primary sources of supply. For example, the same product may have a low share of clients who are testing a variety of products, a high share of clients in the supplementary stage, and a low share of clients at the primary stage.

## ORGANIZATIONAL BUYING PROCESSES

Client organizations of INDUSTRAT firms usually involve four major decision makers who participate in the purchasing process. The formulation and execution of strategy may be improved when the relative influences of these participants are taken into account. Study 6, *Survey of Organizational Buying Processes: Korex Market*, estimates the relative weights of the different decision makers in the buying decision. These weights may differ across market segments.

The information in this study pertains to all stages of the product adoption process. However, industry experience indicates that there are differences in the relative influence of certain decision makers across the stages of the process. The reason lies in the different tasks and responsibilities which engineers, production, purchasing, and general managers have at those stages. The problems with which a client organization is concerned at the testing and investigation stage are naturally different from those at later stages. For example, a large part of the initial concerns may be product specific while later problems may revolve around the wider scope of a client-supplier relationship.

Unfortunately, market research methodology in this industry has not yet been able to provide a reliable distinction between the relative roles of decision makers at the different stages of adoption. Nevertheless, the fact that market research has not yet captured these differences should not reduce the plausibility of this phenomenon.

## PERCEPTUAL PRODUCT POSITIONING

Each product in INDUSTRAT may be specified according to numerous physical performance characteristics. According to industry experience, customers consider five characteristics of each product category to be the most significant; four are physical and the fifth financial. For Korex products, the physical ones are resistance, suspension, frequency, and density. For Lomex, they are convexity, conductivity, purity, and maximum energy. The fifth characteristic for both products is the cost associated with their applications. Research experience indicates that three of the five factors are rated by clients as being of crucial priority for both Korex and Lomex. Respondents usually require satisfaction from these three dimensions first, before comparing competing products on either of the other two characteristics.

The first part of Study 7, *Semantic Scales on Product Perception: Korex Market,* displays the identity and relative importance of each of these three attributes. While the other two physical characteristics remain significant, the importance of the three displayed in this study seems to justify the elimination of all others from current studies, according to market researchers. Industry experts expect, however, that the other physical characteristics may become more important to customers in the future. When that happens, market research will detect this phenomenon, and display another set of three physical characteristics.

The study provides product perception information on the three attributes. It displays the ideal points, which represent the performance needs of customers considering their applications, and the ratings each competing product received from respondents. The closer a product's rating is perceived to be to the ideal point of a market segment, the more it should satisfy the product needs of the decision makers who were interviewed in this study. This alone does not assure better sales performance, because other factors influence the purchasing process.

Study 8, *Perceptual Map of Products: Korex Market*, is a study using an alternative method for measuring perceptual positioning of products. In the previous study the respondent rated separately each of the products along specific individual physical characteristics. Another way to question the respondent is to avoid specific dimensions and ask about the overall similarity and dissimilarity of the products. This method, called *Multidimensional Scaling,*[5] leaves the choice of the specific dimensions of the product and their relative importance to the respondent's discretion. It yields an overall similarity measure between products, resulting in a graphical presentation of a perceptual map. This map displays the products offered on the market, and the ideal points of market segments. As in Study 7, the shorter the distance to the ideal point the higher the respondent's satisfaction should be with the product.

The study presents two-dimensional maps that satisfy certain statistical testing procedures. Since the data is based on the measurement of overall similarity perceptions, rather than on separate comparisons of specific characteristics, the meaning of each axis on the map is usually interpreted by the market researcher's familiarity with the market, expert judgment, and statistical analysis. In INDUSTRAT, the interpretation of the two coordinates yielded this methodology resulted from analysis of the similarity between positions on the two axes in this map and dimensions that emerged as most important in Study 7.

The numbers on the map represent ideal points for the four decision makers usually involved. The letters represent the perceived positioning of the twenty best selling products in descending order of sale volume. *A* represents the largest selling product, *B* the next best seller, and so on. The map does not include less popular products for which there are too few responses.

Positioning information allows the evaluation of various strategic alternatives. Products may be repositioned, withdrawn, introduced, or retained at the same position in view of past, present, and anticipated competitive developments. Repositioning a product may be done by changing product characteristics considered important by customers, such as price and other physical characteristics. This may require completion of R&D projects to make the changed physical product and its production process available.

The semantic scales and map are only perceptual measurements, and careful analysis should relate perceptual positioning to the actual physical characteristics of the products. Sometimes customers' perceptions may distort the positioning that a supplier designs a product to have in the marketplace. This implies that perceptual positioning is the result of the combined efforts of R&D and other, communication oriented, functions.

Repositioning a product through changes in its physical characteristics is only one alternative for taking advantage of a market opportunity. The marketing department may decide to launch a new product altogether, while retaining or eliminating a present

[5] For a presentation of non-metric multidimensional techniques see Thomas C. Kinnear and James R. Taylor, *Marketing Research: An Applied Approach*, 2nd edition, New York, NY: McGraw-Hill Book Company, 1983.

offering. A modified product will reap the benefits of the users' familiarity with it. On the other hand, a drastic repositioning of a product may be difficult after a long history of entrenchment in a certain perceived market position.

Perceptual positioning of products is one of many factors contributing to market performance. For example, two competing products may not be selling in amounts proportional to their respective distances from the ideal points. This may be due to problems of market awareness of the product offered, or to difficulties in other elements of the relationship of suppliers with current and prospective customers.

## FUTURE KOREX MARKET SIZE AND COMPETITION

Study 9, *Market Forecast: Korex Market*, provides a forecast of the future size of the market and its segments, based on econometric statistical methods. As with many other methodologies, these techniques may be at fault. Over time each INDUSTRAT team will become more familiar with the market, enabling it to better evaluate econometrically-based forecasts in view of anticipated developments.

## STUDIES ON THE LOMEX MARKET

The Lomex market is a separate and independent market from Korex, based on a different technology and different needs. Although the applications of Korex and Lomex are not related, Korex customers may be prospects for using Lomex for other applications in their businesses, and vice versa. Although the two product categories would not compete with each other in these accounts customer satisfaction with the supplier's performance in one product category might naturally have an impact on the other. There is no interaction between the two markets at the buying level. In other words, Lomex purchase decisions would not affect Korex nor vice versa. However, both products, if offered by a competing INDUSTRAT firm, use common resources. Therefore, action on the Korex market may have an impact on the Lomex market and vice versa through the firm's strategic choices and the scarcity of their resources.

Because the Lomex market is currently nonexistent, there is obviously no experience in its market analysis. Nonetheless, the industry expects to retain the three macrosegmentation schemes used in the Korex market, as they are generally applicable to such industrial marketing situations. However, since there are no Lomex products on the market, there are no records of applications in end products, rate of adoption, or market potential. Although end use is expected to be a viable segmentation scheme, the actual uses are still unknown.

The market research studies pertaining to the Lomex market follow the format and methodology of those studies on the Korex market. They are:

Study 10. *Product Awareness and Preference Survey: Lomex Market*
Study 11. *Demand Analysis: Lomex Market*
Study 12. *Market Shares Survey: Lomex Market*
Study 13. *Survey of Organizational Buying Processes: Lomex Market*

Study 14. *Semantic Scales on Product Perception: Lomex Market*
Study 15. *Market Forecast: Lomex Market*

No perceptual maps are available for this market, as it is expected that the number of Lomex products on the market will not be sufficient in the course of the simulation to conduct a multidimensional scaling study. As long as there are no Lomex products on the market, studies 10, 11, and 12 are irrelevant. Study 12 is also irrelevant when there is only one Lomex product on the market. So, it would be a waste of funds to order these studies when they are of no analytical value.

## COMPETITIVE ACTIVITY

Monitoring and anticipating competitive action is indispensable for strategy formulation and execution. Some information on competing activities is public knowledge. For example, the launch of a new product, the change of physical specifications of a current product, and price changes are all visible actions. Special marketing activities of a competitor in support of a product line are more difficult to observe. In this industry, as in many others, specialized sources are available which monitor competitive behavior. Study 16, *Competitive Information*, provides information compiled from trade journals, publicly available industry studies, and other sources.

The study begins by displaying information on competitors' decisions with respect to each of their products. For each product on the market the table displays the corresponding decisions on maximum price discounts, promotional budgets, sales force commission, technical support, and advertising. This information is a result of research and estimation and it may necessarily include some error. A way for the analyst to ascertain this is to compare his or her own product management decisions with the corresponding estimates.

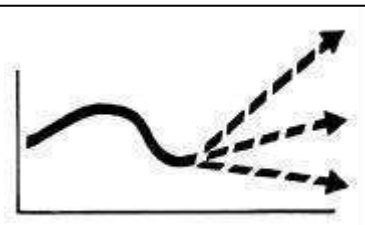
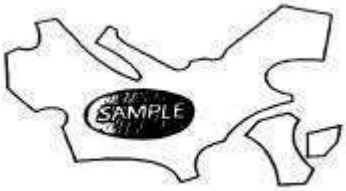
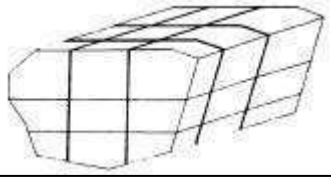
| | |
|---|---|
| **OBJECTIVES:**<br><br>**UNDERSTANDING MARKETS**<br>**MONITORING**<br>**IDENTIFYING THREATS & OPPORTUNITIES**<br>**FORECASTING** |  |
| **METHODOLOGY:**<br><br>**ANALYSIS OF SURVEY DATA** |  |
| **MARKET SEGMENTATION:**<br><br>**NONE, SPECIFIED OR STATISTICAL** |  |

**Figure 4-2** Market Research

The rest of the study provides competitors' corporate information where the application to specific products is difficult to determine. For every firm, the study shows an estimate of the size of the sales and technical forces, their respective training budgets, and the estimated corporate marketing outlay. The study concludes with the estimated allocations of competitors' sales and technical support efforts over the three macrosegmentation and one microsegmentation schemes.

It must be emphasized that problems of reliability and validity, which are usually present in survey research, may also be present in the studies sold to INDUSTRAT firms in the course of the simulation. Market research in the INDUSTRAT world is also based on samples of individuals responding to questionnaires and interviewers. However, in order to improve the firm's capability to understand the market, monitor and forecast developments, and identify threats and opportunities, the benefits of market research studies must be accepted together with their weaknesses. As the firm gains familiarity with the market it will develop an appreciation for the value of certain studies and their reliability. Naturally, as market research suppliers gain experience in providing information about a market, the information stands to be more reliable (see Figure 4-2). For example, one should expect that market research on Korex should be more reliable at this stage than for Lomex, since not much information is available yet.

# Chapter 5

# Execution of Industrial Marketing Strategies

Following strategic choices, programs must be designed to market the products that the firm plans to offer on the market. For every product offered, the production department must be given a sales forecast to which it will be prepared to respond. All products require a marketing program covering all the elements of the marketing mix. Other programs of action must be specified for the sales and technical forces, corporate marketing, and R&D. The choices made at the strategic level may also involve negotiation for licensing or other collaborative arrangements with competitors.

## PRODUCT DECISIONS

Manufacturing methods in this industry have evolved over the years in an effort to adapt to sales fluctuations. Two important characteristics of the current approach allow considerable flexibility. The first is the use of subcontracting. By having unrestricted access to subcontractors on an annual basis, the competing firms in INDUSTRAT are not bound to long term commitments for capacity levels.

The second characteristic is the flexibility in current manufacturing systems, allowing a relatively easy change between Korex and Lomex products and their various technologies. However, production may manufacture only products for which R&D has been successful in providing the technology and manufacturing specifications. With this prerequisite satisfied, production will be able to provide the annual volume requested by marketing, and to operate at this requested level for one year.

Although production is flexible from year to year, the annual volume requested for a product represents a commitment for the year. On the other hand this request is based on a sales forecast which may be erroneous. In view of this possibility a marginal flexibility has been developed. If sales are within a 20 percent deviation from marketing's forecast, production will automatically adjust the requested annual production level to that point during the year with no additional costs.

Under such conditions no excess inventory will remain at the year's end. If sales are more than 20 percent below the requested production, excess inventory will be shown. Its size will be the differences between 80 percent of the original request and the actual sales for this product. If demand is more than 20 percent over the forecast, a maximum upward production adjustment of 20 percent will take place. Any sales that the firm could have made for this product beyond this augmented volume will thus be lost.

According to the IINDUSTRAT firm's administrative process, it is only when products are actually sold to the customers that marketing pays production for them at transfer cost. Under these conditions, marketing is not charged for the manufacturing cost of excess inventory, should there by any. However, the holding costs of this inventory such

as interest, space, and insurance, will be charged against marketing's annual contribution because it will be held responsible for the forecasting error and the resulting inefficiency. The actual cost of the inventory is carried, until sold, on the books of the production at current cost (LIFO) value. If marketing decides to discontinue a brand or to modify it by using a new set of R&D specifications, the costs of any existing obsolete inventory will automatically be charged to marketing as an annual exceptional cost.

The costs of manufacturing a product depend on how it is manufactured and the experience with that production process. Production methods are determined by the development department through development projects that are requested and financed by the marketing department. These projects provide the development department with a set of specific physical characteristics for the product and a desired corresponding cost base. The cost base will be reached if the results of this development project are implemented by the production department and production has an experience of approximately 100,000 in cumulative production.

The manufacturing costs per unit are expected to be higher than base cost, if cumulative production has not reached the 100,000 mark. However, as the production department follows development's specifications, cost per unit will be lower than base cost once cumulative production is beyond 1000,000 units. If the expected cost reduction resulting from cumulative experience is not viewed as strategically sufficient, marketing may call on the development department to launch a cost reduction project for lowering the base cost, for the same set of physical specifications, to the desired level. The new manufacturing method will be operational only when the project is adopted by production.

As the production department transfers its manufacturing experience from one product to another, the calculation of cumulative production takes into account all manufacturing with the same technology. Thus, when a new development project is employed, it already enjoys all the production experience accumulated in the firm across the use of the same technology (1, 2, 3, or 4 for Korex and 5 for Lomex). This would give each product within the given technology a similar cumulative production for calculating the relevant experience. However, the base cost for the experience curve is determined uniquely by the development project that was employed. On the other hand, if a development project uses a technology new to the firm, the cumulative production figure will include only the manufacturing that used the new technology (see Figure 5-1).

In some cases, for various given specifications, the firm may already be producing a product at its minimum based cost, that is, by the most efficient production method. In such instances further cost reduction would only occur due to cumulative production experience. Production reports regularly to R&D on the product's costs. This information helps in the design of production methods for future products with similar specifications.

The reduction of base cost via a development project is regarded in this industry as a product modification. Although the four physical specifications, which are considered

most important from the market's point of view, remain unchanged, others must be altered by the development department. Customers do detect such minor alterations and insist on having the most recent version of the product. This makes any inventory, which was manufactured prior to implementation of the successful cost reduction project, obsolete and unsaleable in this market. The administrative system of the firm will automatically charge the manufacturing costs of this inventory to marketing's operational contribution, and transfer the funds to production, the department that had invested in building this inventory on behalf of marketing.

In order to not discourage cost reduction projects or any other modification of existing products, INDUSTRAT simulation administrators may authorize an exceptional transaction with a firm's production department. For example, the administrator may pay production for part or the entire obsolete inventory and export it out of the INDUSTRAT market.

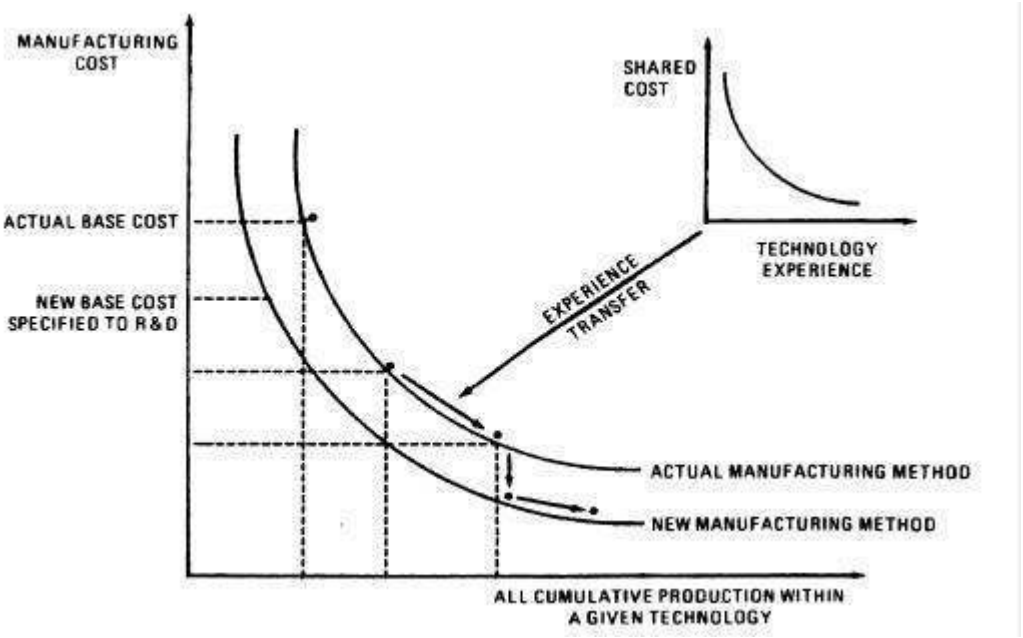



**Figure 5-1** Production costs

## PRODUCT MARKETING PROGRAMS

Along with the production request, the marketing department must make decisions concerning the marketing mix for each product. The elements of the marketing mix in the INDUSTRAT simulation are list price, maximum price discount, promotion, sales commission, product advertising, and allocation of technical support.

### List Price

This is the official price per unit quoted to all customers. Once a price list is determined, drastic annual changes are not acceptable since they damage the supplier's credibility. However, a yearly variation of up to approximately 30 percent has proven to be a feasible price change in this market.

### Maximum Price Discount

The product list price represents marketing's overall competitive considerations. However, salespersons in the field may find that competition in certain territories is more intense than expected. To support them in such situations, marketing may authorize an autonomous decision by the salesperson on a percentage discount off list price. The more skillful and trained a salesperson is, the smaller the discounts he or she is expected to yield. Nevertheless, in order to retain its competitive position, marketing will not authorize discounts beyond 10 percent. So far, the average discount has amounted to around 5 percent of the list price.

### Sales Force Commission

Salespersons in this industry are paid partly by salary and partly by sales commission. The commission is a constant percentage of the net sales revenues generated and is regarded as an incentive. When management feels that the role of the sales force is relatively important, it may increase this product's sales commission. But, in cases where the sales force's role is minor, management may wish to spend the earned contribution margin in another way. Industry experience of sale force commission shows an average of 5 percent with a maximum of 20 percent.

### Promotion

While the sale force deals directly with individual customers, marketing may undertake promotional activities to support the sale effort. These include participation in trade shows, distribution of free product samples, and particular sales campaigns. The decision on what promotional tools will actually be employed is delegated to lower management. However, the marketing department must decide what the total promotional budget for the year will be for each product.

### Product Advertising

Marketing may allocate an advertising budget to each individual product. INDUSTRAT firms work with specialized advertising agencies that operate within a budget in the most effective way. There are not advertising restrictions, but the industry has traditionally avoided consumer oriented mass media. Advertising has concentrated on brochures, trade publications, business supplements, and other industrial vehicles. While advertising budgets are relatively low, it is recognized that advertising does play an important role at certain stages in a product's life cycle. The actual execution of advertising in terms of message content and media mix is delegated to lower management, who, in their analysis, automatically employ the ideal points of the target segments chosen by the firm.

## SALES FORCE DECISIONS

The role of the salesperson is to prospect for new accounts, follow the purchasing process within them, negotiate prices, and coordinate the technical and commercial relationship with the client after the sale is made. Each salesperson in INDUSTRAT sells the full range of products offered by his or her firm. It is not possible for marketing to dictate the allocation of individual salesperson's time or efforts. In fact, the sales force is a separate organization, independent of marketing, within the firm. Beyond varied sales commissions, the marketing department can influence the sales force only by determining its organizational structure and by providing training budgets and guidelines on salespersons' time allocation.

For instance, the marketing department may wish the sales force to spend certain proportions of contact time across each of the segmentation schemes. Marketing may want the sale force to focus on the east and to devote less attention, though not neglect, the other two regions. Simultaneously, the department may want to concentrate on the larger accounts, but maintain a significant proportion of contacts with the smaller accounts. At the same time, marketing sees all three end product segments as equally important. Finally, marketing may want the sale force to divide its time between the purchasing and general managers and virtually ignore the other decision makers during the year.

Marketing directs the sale department on how to allocate its resources across each of the segmentation schemes. It must, however, choose a single macrosegmentation scheme by which the sales force will be organized. This guarantees on allocation of resources across the one scheme in accordance with the marketing's wishes. The codes representing the schemes by which the sale force may be organized are 1 for geography, 2 for account size, and 3 for end product.

Once a macrosegmentation scheme is adopted as an organizational structure, the sales force will strictly follow the proportions along this scheme. For example, consider a firm that decides to employ 50 salespersons and adopts a geographical organization. If marketing desired 30 percent of the sale force resources to be dedicated to the eastern

region, 15 salespersons would be assigned to his segment. Within this organization, each salesperson will try to follow the proportion specified by marketing for the other macrosegmentation and microsegmentation schemes. For instance, in a geographically organized sale force, marketing may request 50 percent of sale force resources on large accounts. The individual salesperson, already assigned to a geographical segment, would try to implement this request.

It is impossible to control the way a salesperson manages his or her time and relationships with individual accounts. An organizational form assures a certain desired allocation scheme and the rest is managed by guidelines only. However, a more highly trained sale force would be capable of understanding the strategic marketing issues and the ensuing guidelines. It is likely then that higher sales force training budgets will improve the sale force's adherence to the proportions of time allocation, which marketing cannot assure via an organizational scheme.

The sales force expenditure budget must cover the total number of salespersons as well as their hiring, firing, and training costs. A first-year salesperson will incur both hiring costs, which include routine sale and technical training, and salary. A departing salesperson will only incur firing costs. Such costs are similar for all five firms and will be announced each year in the industry's newsletter. The training budget is a marketing decision, as changing competitive situations may require new product or segment-oriented training programs.

The relationships of salespersons with their clients take time to evolve and every reorganization entails relocation and the need to establish new relationships. Reorganization and reassignment of the sales force may cause a temporary loss of sales force effectiveness. It is up to the management of each firm to consider the prospective benefits in the light of the temporary loss of rapport with customers in the marketplace.

## TECHNICAL SUPPORT

In the process of adopting new products or changing production methods, customers may encounter technical problems that their personnel cannot resolve. The role of technical support is to render assistance in such cases mainly through visits by qualified technicians. The size of the technical force, its training budget, and allocation across products and market segments are marketing's decisions. Technicians are trained to support all the products that the company offers.

The allocation guidelines are firstly product oriented, indicating what percentage of the technical support budget should go to each of the products. Simultaneously, marketing may have other strategic inputs into this allocation decision, relating to the segmentation of the market. For example, while devoting 50 percent of the technical support resources to a certain product, marketing may also want to emphasize the importance of large accounts across the whole line.

The allocation of the technical force to market segments does not necessarily have to resemble that of the sale force. However, in the interest of coordination, the organizational structure of technical support will automatically follow the one chosen for the sales force. This implies that after the product criterion, the macrosegmentation chosen as an organizational scheme will be of highest priority for the allocation of technical support resources.

The expenses involved in hiring and firing technicians are similar for all five firms and will be announced in the industry newsletter. The training budget should be related to the technical support expected in the field during the year, and should improve the implementation of marketing's guidelines.

## CORPORATE MARKETING

Corporate marketing bolsters the credibility of the firm as a supplier in the marketplace. It is difficult to relate this activity to specific products or segments. In the past, annual corporate communications budgets, consisting mostly of public relations campaigns, have been significantly lower than the total advertising budgets spent specifically on individual products. The actual execution of a corporate communication program is delegated to lower management, who automatically consider the ideals points of the segments used by the firm.

## RESEARCH AND DEVELOPMENT

The marketing department of an INDUSTRAT firm may request the R&D department to take on specific projects in order to improve existing products or to introduce new ones. Various combinations of characteristics are made possible by different technologies. If the desired combination of physical characteristics is within a range of a technology to which the firm has access, a development project may be launched. Marketing specifies a project name, an annual budget, physical characteristics sought, and the target base cost for that configuration. It must be sure that the firm possesses the basic technology to develop the new product. If the firm does not possess this prerequisite, it will have to first invest in research for the technology to become available.

### Research

Both Korex and Lomex product categories are the result of basic scientific research. The development of commercially viable products represents a process which goes well beyond science into specific industrial applications. The process culminates in a successful *development project*, where the R&D department transfers to production the necessary know how to manufacture the product. Simultaneously, R&D prepares the technical support department for certain difficulties that clients may have in adopting the product.

However, both Korex and Lomex must first pass the technology research stage. The reason for this intermediate stage is that, although science has prepared a theoretical base

for developing products, the industrial and commercial implementation of certain specifications is difficult. Combining some physical properties requires a certain technology before the consideration of production methods.

Korex products may be based on four different technologies. Each of these is applicable to a combination of certain ranges of product specifications. Each technology only serves as a basis for product development within a defined specification range. However, since technologies may overlap, more than one may constitute the base for the development of a product with similar performance characteristics.

Exhibit 5-1 displays the possible product specifications which are covered by each of the four Korex technologies. As far as the Lomex product category is concerned, there is not yet enough experience in R&D to differentiate between specification ranges. However, since Lomex is only a scientific development at this time, industrial technology must be available before a commercial product is developed. At this time, it is believed that this technology will cover the whole range of Lomex physical specifications.

| *Technology Lower and Upper limits* | *Resistance (Ω)* | *Suspension (μs)* | *Frequency (kHz)* | *Density (μg/mm $^3$)* |
|---|---|---|---|---|
| 1: Minimum | 500 | 15 | 30 | 500 |
| Maximum | 4500 | 55 | 200 | 800 |
| 2: Minimum | 2000 | 10 | 30 | 500 |
| Maximum | 12000 | 60 | 200 | 800 |
| 3: Minimum | 1000 | 45 | 30 | 500 |
| Maximum | 4000 | 105 | 200 | 800 |
| 4: Minimum | 2500 | 40 | 30 | 500 |
| Maximum | 10000 | 100 | 200 | 800 |

***EXHIBIT 5-1*** *Korex Technologies*

Research for technology is a time- and resource-consuming process. A team of researchers, who will contribute their experience to the effort must be gathered and built. This group of highly paid scientists and engineers must be provided with the proper infrastructure, good quality research facilities, and staff. The need for a critical mass is expressed by the minimum requirements for funds and elapsed time before a technology is available to a firm. Industry experts can usually estimate the minimum annual investments necessary for successful technology research. Similarly, these experts are in a position to determine the number of years that the search for a given technology should last before it is likely to be successful.

Exhibit 5-2 shows these minimum requirements for each of the Lomex and four Korex technologies. Each year the research department communicates to marketing the minimum annual, minimum total, and the proposed investments necessary for the successful development of each technology. Spending below the minimum annual investment would not be a total waste of funds. Although it would have no effect on the

number of years necessary for research, it would reduce the future total investment required to gain access to the technology.

Research aimed at developing new technologies represents a heavy commitment of financial resources and scientific expertise. As in many science based industries, a critical mass is essential for the accumulation of research experience. In order to enable researchers to have the necessary focus INDUSTRAT firms only engage in the pursuit of a single technology in any given year.

| *Technology* | *Minimum Years of research* | *Minimum Annual Budget* ($)* | *Minimum Total Budget* ($)* | *Minimum Budget* for a development Project ($)* |
|---|---|---|---|---|
| 1 | 1 | 1000 | 3200 | 150 |
| 2 | 2 | 1600 | 5400 | 250 |
| 3 | 2 | 1600 | 5400 | 250 |
| 4 | 2 | 2200 | 8700 | 550 |
| 5 | 2 | 2200 | 11000 | 550 |

*The financial amounts are expressed at the current values of the opening period.

***EXHIBIT 5-2*** *Requirements for Technological Research*

**Development**

Successful technological research would enable the firm to proceed with the development of products within new ranges of specifications. This activity would be in the form of development projects following product specifications set by the marketing department, which would determine the specifications according to strategic consideration.

Marketing must decide what to allocate from its expenditure budget for investment in development projects. In addition to the target specifications of the project sought, marketing must specify the technology on which to base the project. R&D will proceed to evaluate the project's technical feasibility, determine the necessary budgets and develop a prototype run of the product specifying the raw materials and production methods.

A development project is designated by an internal project code or name, consisting of five letters. The first letter is P, for project; the second letter represents the category of product to be developed, K for Korex and L for Lomex. The third letter identifies the firm carrying out the project. A, E, I, O, and U for firms one through five. The last two letters in the project name are selected by the firm as an internal code for project identification. For example, PKAXX and PLAZZ are names for Korex and Lomex development projects, respectively, belonging to firm one.

The twenty products currently on the market are the result of twenty development projects. The project names are the present product names preceded by the letter P. For example, firm three's product KISS was launched according to the specifications of project PKISS. All INDUSTRAT firms used a similar name convention in the past.

This implies that each team in the simulation has four successfully completed development projects at its disposal. These represent specifications of physical characteristics and a corresponding production method for a base cost. Each project may be used for the modification of a product which is currently on the market or for a new product introduction.

The lower the target base cost, the more difficult it will be for R&D to develop a product. Once a development project is complete, this cost corresponds to the transfer cost between production and marketing at the $100{,}000^{th}$ unit produced. Above this mark the transfer cost will decrease with production experience, and below it, it will be considerably higher.

A maximum of four development projects is allowed each year. Once they are launched, R&D will annually report to marketing on the status of each project and the funds necessary to complete them, if unfinished (see Figure 5-2). If there has been over budgeting on a project, R&D will use the balance within its internal activities and will not report the difference. An unfinished development project may be completed at a later date and at a spending rate chosen by the marketing department.

A Project in progress must always keep its original name and physical characteristics, as a changed name implies a new project. A change in any physical characteristics will be ignored as long as the project carries the same name. The base cost may be adjusted at any time in order to release cost constraints and increase the likelihood of a project's success. The development group would update the base cost automatically in case of inflation (see Figure 5-3).

Marketing may discontinue development projects and resume them whenever necessary while retaining the results of work done up to that point. Experience gained from one development project is transferred to future development projects. Such a transfer will increase the firm's capabilities to complete projects with similar physical characteristics on lower budgets and lower base costs. However, this experience transfer will only take place after the successful completion of the proceeding project.

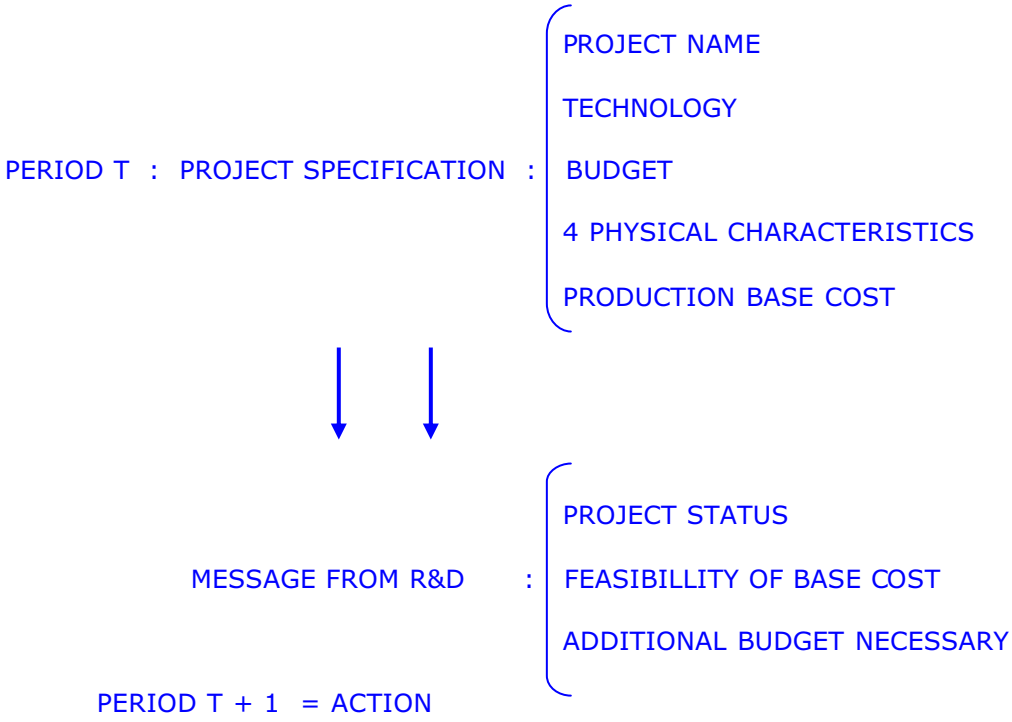



**Figure 5-2** Product Development

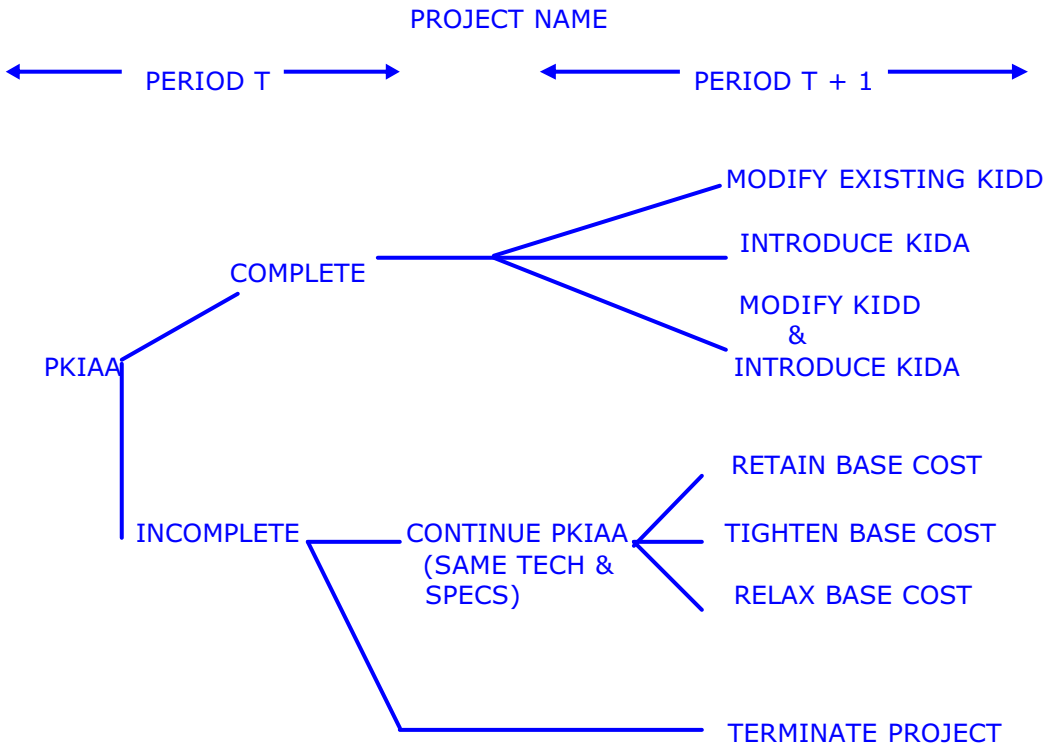



**Figure 5-3** Development—Project Name

Since the successful completion of a development project is influenced by the cumulative expenditure, marketing may time the investments in a project according to its available resources and strategic needs. Both the base cost and the amount requested by R&D to complete projects are given in current monetary values.

Development projects may be used to reduce the base cost for on-going products. This may happen when production experience effects on costs are insufficient. As more products are developed with the same technology there may be cross-experience effects allowing further cost reduction.

There is only one situation when R&D unilaterally determines product specification in a development project. This happens after a successful quest for a new technology. Under these circumstances, the specifications of the first development project within the new technology will be R&D's responsibility. This success means that R&D will report on the availability of the technology, as well as on the completion of the first development project with its corresponding specifications. The project's name is also determined by R&D.

It is important to note that at least one year must elapse between the launch of a development project and its completion. This raises the need for an effective interface between marketing and R&D departments, allowing the former to recognize the latter's abilities and constraints. The lack of such awareness may lead to two types of problems.

1. Inability to launch or modify products on a timely basis.
2. Overspending on development projects because of time pressure.

Marketing should always be aware of what technologies are available for product development and keep a careful record of the successfully completed development projects. This will allow the use of such technical capabilities if a product must be launched at short notice. The investment necessary for a development project depends on its technological basis and the physical performance characteristics sought. The closer the specifications of a project are to a firm's successful development experience, the fewer funds that will be required. R&D will report on each active development project's status and required funds (see Figure 5-4). Exhibit 5-2 displays the minimum funds necessary for any development project for each of the technologies at the opening period. A useful strategy for development may be to allocate a small budget to a project so that R&D may do a feasibility study on it; that is, evaluate it both technically and economically and report back to marketing on the funds necessary for completion.

- R & D MESSAGES
- "FEASIBILITY" STUDY
- PAST EXPERIENCE
- COMPLETED PROJECTS
- TECHNOLOGY
- VARIOUS CHARACTERISTICS * DIFFERENT PROBLEMS
- UNCERTAINTY
- MINIMUM ACCORDING TO INDUSTRY EXPERTS

**Figure 5-4** Product development- Budget specification

**Message from R&D on Development Projects**

If a development project is not successful, one or more of the following self explanatory messages will be sent from R&D:

1. XXX specified to modify product.
2. XXX no available. Product modification not implemented.
3. XXX specified to manufacture new product.
4. XXX not available. Product could not be introduced.
5. Obsolete inventory of product.
6. XXX charged at transfer cost.
7. Unfavorable market response to drastic price change on product.
8. Price adjusted to XXX
9. The government could not accept your price increase on product. Price adjusted to XXX.
10. Technology XXX was already available. Research program cancelled.
11. Project code XXX has already been used. Code of current project was changed to YYY
12. Licensed out project XXX is not available. Licensing operation cancelled.
13. Licensed in project XXX is not available. Licensing operation cancelled.
14. Allocated marketing budget for the current period was exceeded by $XXX.
15. Expenditures were cut on: YYYY
16. Budget remains exceeded despite cuts in expenditures. See game administrator for adjustments of future budgets.
17. Following project licensed in but not used. Minimal annual fee charged at exceptional cost.
18. Two products with same name on market in same period. Only first one was kept
19. Reintroduction of old brand cancelled because of adverse market reactions.

20. Licensing details do not match. Licensing operation cancelled.

## INTERFIRM COOPERATION

Although competition between INDUSTRAT firms is encouraged, cooperation in the form of licensing and joint venture arrangements is allowed as it helps to diffuse innovations and increase research efficiency. This section covers such activities, which are subject to the approval of the INDUSUTRAT administration.

A licensing agreement may be negotiated between a firm which has completed a development project and another which has yet to complete such work but would like, nevertheless, to launch a product with such specifications. The licensee's justification in paying the fee is to take advantage of market opportunities. The licensor's motivation might be twofold: (1) to exploit an innovation beyond the market currently covered, and (2) to provide his own clients with an alternative source of supply. The second reason may help to increase the clients' commitment to a new product or technology.

An automatic fee of 3 percent of the sales revenues at list price will be made by the licensee to the licensor annually, and will be added to the licensor's contribution. The licensee and the licensor must base their negotiations on the development project and agree to a minimum annual payment. This fee is to compensate the licensor if sales do not reach the expected level, or if the licensee decides to discontinue the arrangement at a later date. Any other transfer of funds between firms will be handled by the game administrator. INDUSTRAT firms may use the licensing and fund transfer mechanism to enable further collaboration: if a competitor possesses a certain technology, another firm may ask that this competitor develop a particular product for eventual licensing (see Figure 5-5).

While development projects are transferable between firms, technologies are not. If one firm wishes to allow another to have access to a new technology, the arrangement must be implemented only through the licensing mechanism of the INDUSTRAT simulation. If two firms agree to pool their resources and carry out technology research, the research will be performed in the facilities of one of the partners. This research will yield an automatic first development project and all subsequent development and cost reduction projects which are subject to this agreement must be carried out only on the premises of the firm that performed the research. Proper care should be taken in the agreement to anticipate that an eventual demand for development capacity for both will be satisfied by the technological capacities possessed only by one side.



- **NEGOTIATIONS** — ONLY WITHIN APPROVED PERIODS
- **OUTCOME** — LICENSING AND/OR JOINT RESEARCH
- **TERMS** — NEGOTIATED FUND TRANSFERS DURING R&D<br>NEGOTIATED MINIMUM FEE AFTER LAUNCH<br>AUTOMATIC ROYALTIES (%)
- **PROCESS** — APPLICATION TO GAME ADMINISTRATOR
- **IMPLEMENTATION** — COMMON PROJECT NAMES AND PAYMENT TERMS<br>FUND TRANSFERS VIA ADMINISTRATOR
- **RISK** — GOVERNMENT INVALIDATES CONTRACT IN VIEW OF COMPETITIVE CONDITIONS

**Figure 5-5** Collaboration

Although this form of cooperation may be economically beneficial, such agreements may hamper competition in INDUSTRAT. Any licensing or fund transfer arrangement will require the approval of the government, represented by the simulation's administrator. Moreover, the government may unilaterally discontinue licensing arrangements that seriously restrict competition. The INDUSTRAT administration will announce when licensing negotiations are allowed and at what time period. All negotiations outside this specified time are illegal. INDUSTRAT teams may solicit the administrator for an announcement of the license negotiations period. Any licensing of development projects must be submitted by both parties to the game administrator. A failure to comply by either party will result in the inability to implement the agreement and a loss of funds involved.

# Chapter 6

# INDUSTRAT Procedures

In the INDUSTRAT simulation each team of participants represents one of five competing firms and makes annual operational decisions on its behalf. The directives given by the team are carried out through the year and the outcome will be known only after the year is over (see Figure 6-1). The execution of the annual plans is delegated to lower management, which operates autonomously during the year. In the case of an error by top management, lower management is accordingly restricted in the size of its adjustments.

Top management decisions are represented by the annual *decision data* submitted by each team. These decisions are examined for adherence to the simulation's rules and automatically adjusted if teams did not comply with the rules. For example, the total expenses a team incurs must not exceed the authorized expenditure budget. The adjustments consist of arbitrary cuts in the amounts that the teams had planned to spend on the year's operations. Any such decisions that are technically wrong will be detected and automatically replaced technically correct decisions.

The set of market research studies monitoring the annual developments in the market place is available at any period. Each firm must order the studies it needs in advance of the year in question to be able to evaluate the year's developments. The annual decisions and market research orders are submitted through the decision software at the end of each decision session. If a firm needs market research information, but failed to order it in advance, the INDUSTRAT administration may impose higher prices on studies not ordered in advance.

At the beginning of the game, each team receives the company report for the opening period, Period 0, giving the initial situation (the inheritance from the previous management). This makes up the groups' information for the first session, with which they complete their decisions for the first year of managing the firms. The company report for this year, or period, will be handed out at the beginning of the next decision session. Then the team will evaluate the results of their first year and prepare the directives to be executed the year after.

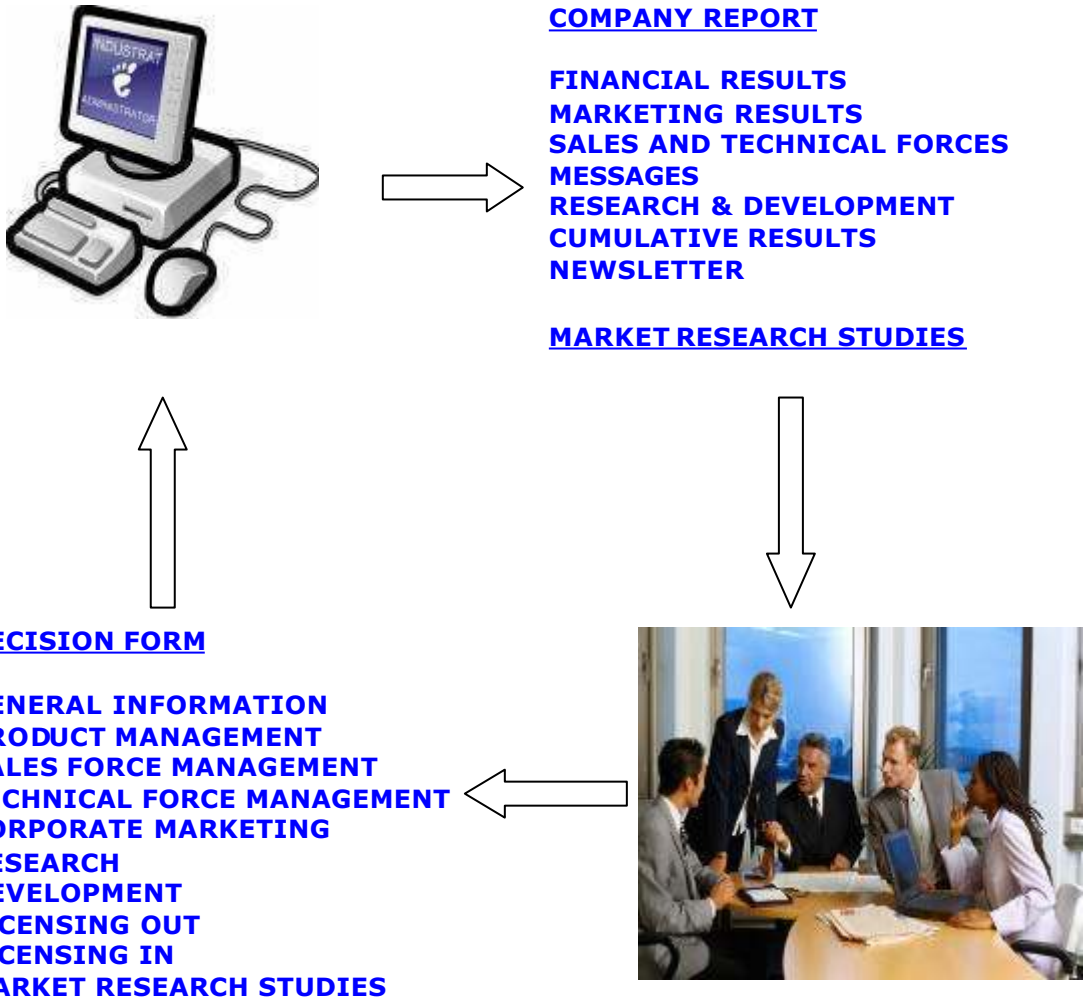



**Figure 6-1** External documents

## THE COMPANY REPORT

The company report is divided into the following parts:

1. Financial results
2. Marketing results
3. Sales and technical forces
4. Messages
5. Research and development
6. Cumulative results
7. Newsletter
8. Product Specifications
9. Info on Korex Market

Appendix A presents a specimen company report. Since the competitive dynamics of each run of INDUSTRAT are different, this report is only to be used as an example. We refer to this report to familiarize the reader with the information received during the course of the simulation.

### Financial Results

In Section 1, a detailed account is given of each product's performance, ending with the product's gross marketing contribution. Expense items, which were not allocated to individual products, are then subtracted from the total gross marketing contribution, yielding the net marketing contribution for the period.

The first group of figures in each column represents the annual volume of *production*, the volume of *units sold* and excess *inventory* left at the year's end. The volume of production is a function of what has been requested by marketing, automatically adjustable upward or downward by a maximum of 20 percent in view of the actual demand. If the products shows excess inventory at the end of the year, an over-optimistic sales forecast is suggested. Excess inventory also suggests that the maximum downward adjustment of 20 percent was made, but did not suffice to leave the firm without any inventory. On the other hand, when there is no excess inventory, comparison with the production request for the period may tell us the extent of the adjustment. If the full adjustment of 20 percent upward was employed, market research information must be used to estimate the level of actual market demand and lost sales due to the stock-out.

Marketing does not pay the production department for the manufacture of excess inventory, but it will do so upon sale, or if it is written off as obsolete. The costs of manufacture of the discarded inventory will automatically appear negatively in the entry *Exceptional Cost or Profit* unless sold to a third party, represented by the simulation administrator (see Figure 6-2).

The next two lines represent pricing information for each product. *List price* represents the pricing policy adopted by the firm for the year. The *average price* represents the actual prices obtained by the sales force in the field. The difference between list and average price is the aggregate discount given by the sales force to their customers. The maximum of any discount has been determined by marketing in the decision form.

The next group of figures represents the cost structure per unit, which is composed of the manufacturing, licensing, and commission costs per unit. *Unit manufacturing costs* are the result of three factors, manufacturing methods, experience effects, and inflationary effects. Manufacturing methods in INDUSTRAT are represented by the base cost, the average cost for the first 100,000 units produced. Experience effects result from efforts to reduce costs. These would usually decrease with experience. The effects of inflation vary according to the annual inflation rate. As long as the production department employs the same production method (the same base cost), marketing may utilize the past behavior of production costs and forecasted inflation to estimate the next and subsequent year's unit manufacturing costs.

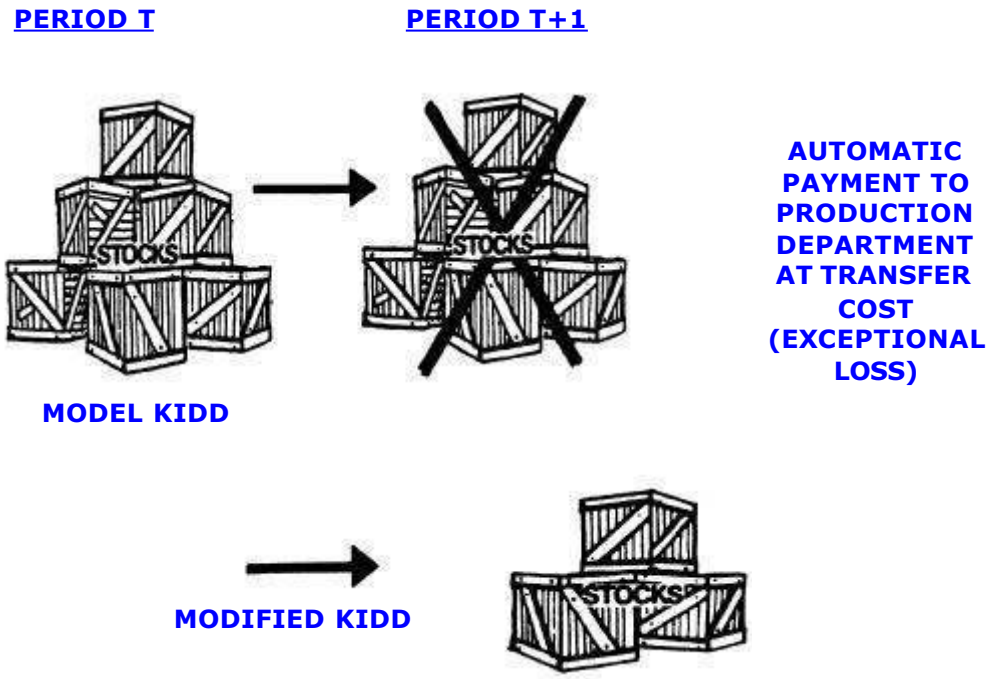



**Figure 6-2** Brand Modification

*Unit licensing cost* represents the automatic licensing payment of 3 percent of list price paid to the licensor of the product. This cost item appears as soon as a licensing agreement enters into effect and disappears automatically if the product is either

eliminated from the line or modified through an internal development project. *Unit commission* represents the incentive received by the sales force for each unit sold. It corresponds to the percentage commission authorized by marketing and applies to the average price obtained for this product in the field.

The next group of figures represents *sales revenue* and the costs to be subtracted from it. The number of units sold is multiplied by the average price to provide the sales revenue. Unit costs for licensing and sales commissions are also multiplied by units sold to provide their corresponding totals. Next comes the product's expenditures for its own promotion, advertising and technical support. These figures also correspond to the decisions made prior to the year's start. The final cost item in the *inventory holding costs* for the product. It is calculated by applying the official inventory holding cost rate to the value of the excess inventory. The rate is published annually in the newsletter. The final figure in each column is the resulting *gross marketing contribution* for the product.

**Global Results**

The previous results, aggregated across the individual products, yield the *total gross marketing contribution.* At this point, one may subtract the expenditure items, not allocated to products. These items are the sales force's fixed costs (hiring, firing, and employment), their training, corporate communication, research for new technology, product development, and market research. The balance is the year's *operational marketing contribution.*

This figure is then adjusted by adding the revenues from licensing development projects to other companies and including any exceptional profits or losses. Losses are the consequence of insufficient minimum annual royalty payments, payments for obsolete inventory to production, or other adjustments by the simulation administrator. The results yield the firm's *net marketing contribution*.

The final figure in the financial results is the *marketing expenditure budget* authorized for the next year of operations. The size of this budget is a fraction of the net marketing contribution achieved and will be devoted to marketing. The balance will be used for capital investments and dividends elsewhere. As the contribution rises, the size of the marketing expenditure budget should normally increase. However, it should not be expected to grow at the same rate as the net marketing contribution. The reason is that beyond a certain threshold the marginal effectiveness of marketing expenditure diminishes, and so the fraction for next year's budget will diminish as well. In fact, beyond a certain size of net marketing contribution the absolute size of next year's marketing expenditure budget will stay at the same level. On the other hand, a minimum budget for marketing expenditure will be unilaterally provided when the net marketing contribution is too low.

**Marketing Results**

Section 2 reports on each product's performance. The market is divided into three submarkets, testing, supplementary, and major sources of supply, each representing a stage of product adoption by accounts. The product's performance is first expressed by its share in each submarket.

The sales in clients' tests are very small and insignificant with respect to unit volume and monetary value. Comparison of value and unit volume shares for the supplementary and major source submarkets is provided. The shares in the two submarkets, supplementary and primary, are presented first in terms of unit volume and subsequently in terms of monetary values.

There may be instances when the marketing report displays a product as a supplementary source with a market share larger than 100 percent. This happens because some clients in the market maintain policies of multiple sourcing. When there is insufficient supply, a client will return to his supplier for another transaction. These separate transactions may satisfy the clients' policies for the remainder of the year but will result in computations of shares larger than 100 percent. This demonstrates the existence of opportunities for more suppliers.

**Sales and Technical Forces**

Section 3 shows the sizes and organizational structures of the sales and technical support forces deployed by the company in the field. The first part of this section provides the organizational structure. This structure follows one of the three macrosegmentation criteria, geography, account size, or end product.

The proportion displayed in the row of the macrosegmentation scheme chosen as organizational structure represents the allocation of salespersons assigned to each of these macrosegments. The proportions in the other rows represent the way individual salespersons spent their time between the segments, according to each scheme. Although the decision on the allocation of assignments is up to the sales and technical support departments, they try to conform to marketing's decisions. The resulting allocation of salespersons' and technicians' time is displayed for each segmentation scheme.

**Messages**

Section 4 points out technical or administrative errors detected and automatically corrected during the simulation. For example, such an incident may occur when the teams' decisions require an expenditure budget greater than the one authorized. An INDUSTRAT policy determining budgetary items to be cut, in cases of erroneously excessive budgets, is built into the simulation. The unauthorized budgetary excess will be eliminated by sequentially subtracting the unauthorized excesses from certain budget elements. The sequence of these elements is arbitrary. If, following one subtraction,

there still remains an excess, all or part of another budgetary item will be subtracted. This process will continue until the expenditure budget conforms to the original allocation. The sequence of budgetary items to be cut in such cases remains the same throughout the simulation. When such cuts are performed, the message will identify the budget items that were affected. As the assumption is that such errors are not malicious, the cuts will avoid items of strategic long run consequence, unless the total excess is not covered otherwise.

Competing teams are encouraged to verify their arithmetic before submitting the decisions. Normally the administrator will not have the time to contact a team if an error is detected. On the other hand, teams may try to renegotiate their expenditure budgets with the administrator. To do so, they must present a coherent and defensible plan. In any case, they may not be in a position to do so until well into the simulation.

**Research and Development**

Each year the company report provides a status report on all projects, completed and in progress, in the R&D department. Successful research allows the firm to launch product development projects based on the newly acquired technology. This in turns permits the launching of products with new specifications, modification of present ones, and cost reduction via changed production methods. If projects have not been completed, the R&D department will monitor funds already spent, and provide information on the resources necessary for completion.

**Research**. Each column in Section 5A is a status report of a single technology. The first four columns refer to Korex technologies 1, 2, 3, and 4, respectively. The last column relates to technology 5, Lomex products. The first row shows the investment accumulated during the simulation for each of these technologies.

Each technology requires an annual minimum of dedicated resources, giving it the critical mass for the necessary progress. The minimum number of years necessary for the completion of the research was listed, for each technology, in Exhibit 5-2. The second row of the report on research monitors the number of years for which research investment was allocated in this fashion. If for a given technology there has been investment, but never at an annual amount above the necessary critical mass, the first row will show the cumulative investment and the second row will show 0, implying that although research has been done, the minimum number of years listed in Exhibit 5-2 must still be spent.

The third row reports the status of access to the technology. If a NO appears, no development of products may be undertaken as yet within this technology. If, for a given column, the entry in this row is OK, the firm may proceed with development projects using this technology for eventual product modification and introduction. In fact, in the year the research for a given technology is complete, the first development project will be successfully concluded and reported in the development section given next. The specifications of this project are within the range of the newly available technology and were determined by technical considerations in the research team.

The investment allocation necessary during the research period is shown in the last three rows of this table. *Minimum total investment* represents the resources without which concluding the research would be impossible. The entry updates the information in Exhibit 5-2, which applies to the starting point of the simulation. *Proposed total investment* is the research department's estimation of the amount at which attaining the technology is practically guaranteed. The difference between the two amounts represents the uncertainties involved in the quest for the technology. Naturally, the decision whether to spend an amount close to the minimum, the proposed, or somewhere in between rests with the marketing department. It reflects the marketing department's sense of urgency, available resources, and willingness to undertake risk.

Finally, the *minimum annual investment*, representing a critical mass allowing one year's progress, is updated in the last row. While Exhibit 5-2 shows what this amount is at the opening stage of the simulation, there is a need to consider inflation and other factors that make this threshold change from year to year. An annual investment, smaller than this minimum, would reduce the additional investment required, but it would not shorten the duration of the search for the technology. Careful consideration of the annual minima should prevent a firm from making an investment without having attained access to the technology.

**Development**. Section 5B provides a cumulative update on all product development projects and their status. Each column represents a project that was assigned to a development group in R&D. The identity of each project has been coded by the initiators using the INDUSTRAT name convention. The report first shows the technology base, the cumulative investment to date, and whether the project has been completed. An OK in the row representing project status allows the firm to exploit this development in the coming year as a new or modified product. A NO implies that investment in this development project must continue before it can be completed. The rest of the chart repeats the specifications of the product under development, with four rows representing physical characteristics of the product sought. The last row represents the base production costs specified by marketing and is continually updated for inflation.

The remainder of the development report indicates what is required to complete unfinished projects. For each incomplete project, a message will appear specifying the remaining investment necessary for completion. No minimum time prerequisite is necessary here. Sufficient funds may accelerate a development project.

Any continued development project must respect the information and messages already displayed in the development report. These messages cover problems of technological availability, project name changes, unrealistic base costs, budgetary corrections for inflation, and other incidents requiring attention. Lack of attention to such details causes delays in product development that might eventually handicap the firm. Teams are encouraged to request the assistance of the INDUSTRAT administrator in case of doubt.

**Cumulative Results**

This section presents the cumulative results achieved by the firm since the start of the simulation. The first and second rows represent the periods in which each product was introduced and last modified, respectively. When the entries in these two rows are equal for a given product, the implication is that it has not been modified since its introduction. The remainder of this section of the company reports provides a cumulative view structured similarly to the annual financial results.

**Newsletter**

The newsletter (Section 7 of the sample report) is a source of information, generally well known to the industry by the end of the year. It first lists several environmental factors, such as GNP growth and inflation rates of this year and those expected for next year. It then displays a series of cost factors that every firm needs to consider in the preparation of the expense budget for the next period: the salaries, hiring, and firing costs of sales persons and technicians. Note that a new salesperson incurs both hiring costs and a salary in the first year of employment.

The cost of each of the market research studies is announced in the newsletter and is updated annually. The final published factor is the cost of holding inventory. This will determine, for a given value of excess inventory, the holding costs for the next period.

The third part of the newsletter is devoted to specific messages and newsflashes which may be sent to the firm from the administration of the INDUSTRAT simulation. These messages, unlike the ones in the messages section above, are entered manually by the administrators. The message may be a broadcast to all teams, in which case it appears as a *Newsflash*, or it may be a private message to the firm. The latter appears under *Specific message to…*and will appear only on the given team's report. The messages may also originate from other teams, in which case the administrator only relays the message according to the wishes of the firm broadcasting it.

The fourth part of the newsletter provides information about the launching and modification of products on the market by all firms. For each product launched or modified, the physical characteristics to date and the base cost are displayed together with the first year's list price. The final part of the newsletter provides sales, list prices, and market share information for every product currently available on the market.

**Product Specifications**

Product Specifications (Section 8 of Company report) gives a detailed tabular list of the specifications of the currently sold products. The table includes the product name, year modified, Technology, Code, Physical Characteristics and Base Cost.

### Information on Korex Market

This section lists the sales and market share information of the Korex products. The list includes the Product na me, units sold, Market share in units, actual price, $ sales and market share percent in $.

## THE DECISION SOFTWARE

The Decision Software is used by each INDUSTRAT team to communicate its annual decisions. The team must indicate the number of products it will offer, development projects to be continued or initiated, and the number of licensing relationship to be started.

If several INDUSTRAT simulations are run in parallel, each is an independent industry containing five competitors. The decision software provides the following details of the various marketing decisions to be entered:

1. Product management
2. Sales force management
3. Technical force management
4. Corporate marketing
5. Research and development
6. Licensing operations
7. Market research studies
8. Administrative adjustments

### Product Management

The number of rows completed in this section must correspond to the number of products offered. The first column contains the name of the product, conforming to the INDUSTRAT conventions: the first letter either K for Korex or L for Lomex. The second letter is A, E, I, O, or U according to the firm's identity (1, 2, 3, 4, or 5, respectively). The last two letters are uniquely determined by the firm. Product names may be retained while changing specifications via the use of development projects, which constitute a product modification. A firm may not carry more than one product with the same name, although products with different names may be identical in the four physical specifications, and may even be derived from one common development project (note that we deal only with the four most important physical specifications; other characteristics may indeed by different according to decisions made at lower levels of management). However, once a product name is removed, it may never be introduced again in the course of the simulation, since the market will have perceived it as a failure. The erroneous introduction of such an obsolete product name would be signaled with a message. There would be no other negative effects on the firm's image in the market

place, as the removal of a product from the line entails an automatic loss of awareness for the product.

A series of specific decisions is entered following the name of the product in each row. If the name of the product is followed by a blank in the column titled Development Project, there is no change is any of the four physical characteristics of the product. Production would continue according to last year's specifications. On the other hand, a change in specifications is implemented by entering the name of a development project that has been successfully completed by the development department. Note that the development department must first report the successful completion of the project before the results may be used for product modification, which necessarily introduces a delay of at least one year. This procedure is applicable to cost reduction projects as well as to the introduction of new products.

The firm is free to use any development project for product introduction and modification, provided that the project has been successfully completed by the development department. A successful Korex development project may be used immediately or in any later year to modify or reduce base cost, or to introduce a Korex product. The same project may be reused if specifications have been replaced. Furthermore, the same project name may be used simultaneously with more than one Korex product. The procedure is identical for Lomex products. Finally, Korex and Lomex may not be mixed on the same row. Any expenses dedicated to such a project would be lost.

Next in this section, the marketing department specifies the requested production level, the official list price, maximum percentage price discount that salespersons are authorized to give, the commission rate received by salespersons, and the promotional and advertising expenses for this product. The last column represents the percentage of the technical support package allocated to the product in the given row. (The technical support budget as a whole is discussed shortly under Technical Force Management). These percentages must total to 100 percent across all the products offered.

| | Product Name | Specification Code (F11 or double click) | Production '000 | List Price ($) | Maximum Price Discount (%) | Sales Comm. (%) | Promotion ($000) | Product Advert. ($000) | Allocated Technical Support (%) |
|---|---|---|---|---|---|---|---|---|---|
| 1 | KALA | PKALA | 30 | 370 | 2,0 | 5,0 | 60 | 12 | 10,0 |
| 2 | KAST | PKAST | 20 | 750 | 4,0 | 5,0 | 70 | 15 | 20,0 |
| 3 | KAMI | PKAMI | 45 | 430 | 9,0 | 8,0 | 300 | 50 | 40,0 |
| 4 | KAPE | PKAPE | 25 | 700 | 5,0 | 7,0 | 350 | 40 | 30,0 |
| 5 | | | | | | | | | |
| 6 | | | | | | | | | |
| 7 | | | | | | | | | |
| 8 | | | | | | | | | |
| 9 | | | | | | | | | |
| 10 | | | | | | | | | |
| | | | | | | | | Total | 100,0 |

**Figure : 6-1** Product Management Screen

**Sales Force Management**

All salespersons in INDUSTRAT may sell any product offered by their firms. Salespersons are allocated to the different accounts by market segments, which in this simulation may be defined by geographical regions, different potential account sizes, or by the types of product involved. Since an allocation of salespersons according to more than one segmentation criterion at a time is not practical, the marketing department must specify one priority criterion as a basis for sales force organization. Marketing may only suggest the proportion of overall sales force contact time to be devoted to market segments defined according to other criteria.

The sales department allocates salespersons to segments according to marketing's segmentation criteria for sales force organization. The allocation of sales effort defined by the other segmentation criteria will guide individual salespersons within their segments. The macrosegmentation criteria: geography, account size, and end product can be selected through a drop-down box. After selecting one of these in the organizational structure, the department will use the corresponding criterion for salesperson segment assignments.

The second and third fields in the top row relate to the total number of salespersons and the sales force training budget, respectively. The former figure will be used, together with the fixed cost per salesperson as published in the newsletter, to compute the sales force payroll. If the total number of salespersons is larger than the one in the previous period, the difference is multiplied by the cost of hiring a new salesperson. If the number of salesperson is smaller than in the last period, the difference is multiplied by the cost of firing a salesperson. Both the hiring and firing costs are also published in the newsletter annually and their totals are added to the sales force costs.

The last part of the sales force management section is devoted to the detailed allocation of sales force contact time to the various segments. A percentage allocation is required for each macro and microsegmentation criterion, adding up to 100 percent for each row. One of the three macrosegmentation criteria would have been chosen in the organizational structure earlier in this section. This allocation is implemented in full through the assignation of salespersons to segments. The other serves as guidelines for each salesperson.

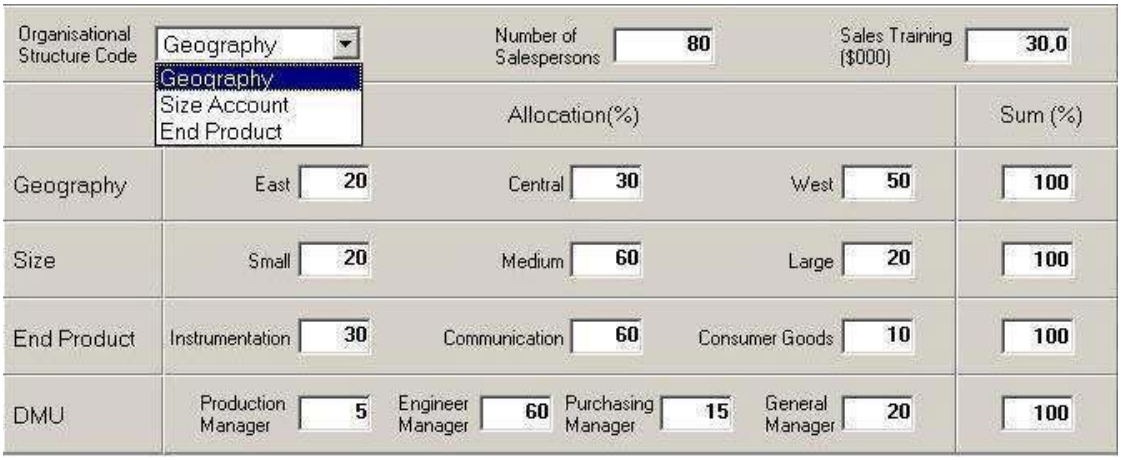



**Figure 6-2** Sales Force Management Screen

**Technical Force Management**

The structure of the decisions in this section is similar to that of the sales force section. First, the number of technicians employed should be indicated on the decision form. This number is then automatically multiplied by the annual cost per technician to determine the payroll for the force. The difference between the sizes of the technical forces for this year and for the last are in turn multiplied by the hiring or the firing cost, whichever is appropriate, and added to the payroll. The next item in the technical support budget is the training of the technical force.

The remainder of this section is devoted to guidelines on the allocation of the technical support resources. For each segmentation scheme, a proportion per segment should be entered, adding up to 100 percent across each row. As in the sales force section, it may difficult to follow all segmentation schemes simultaneously. Moreover, the technical force is also allocated across products in the product management section. The priority here will follow the organizational scheme used for the sales force, with all other allocations serving as guidelines. Similarly, the more training a technician receives, the closer he or she will be able to adhere to marketing's directives.

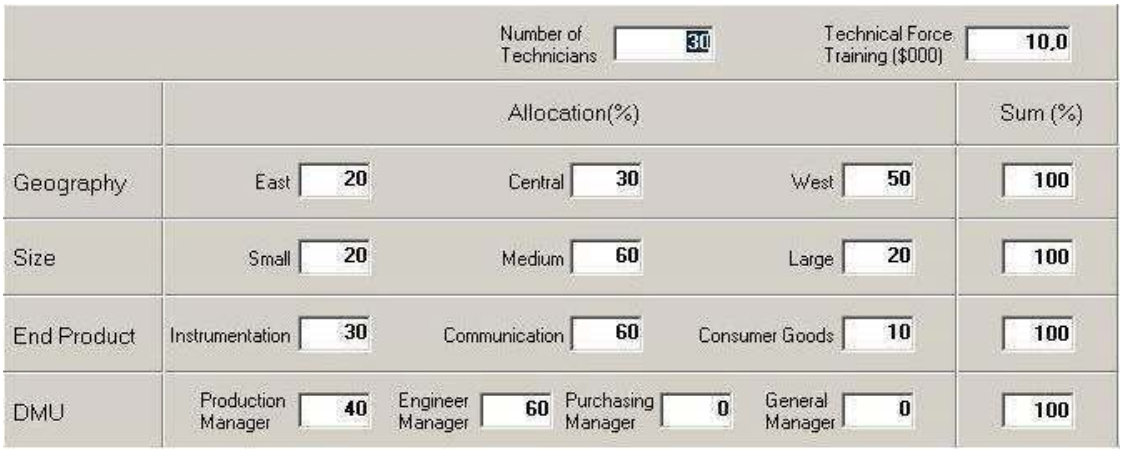



**Figure 6-3** Technical Force Management Screen

**Corporate Communications**

This part of the decision data contains the amount allocated for corporate communications. Recall that this expenditure is neither product nor segment specific. It is devoted to promoting the organization as a whole in the marketplace.


**Figure 6-4** Corporate Communications

**Research and Development**

This section of the decisions is divided into research and development parts. In the research part, the four Korex technologies are designated by 1, 2, 3, and 4, respectively, and the Lomex technology by the code 5. Each year the R&D department may be instructed to allocate resources to help provide the firm with one of the five technologies. The code for this technology is entered in this section of the decision form together with the budget devoted to this purpose.

A technology search requires a minimum investment and number of years to be completed. Note that technological research may be pursued for only one technology in a given year. The choice of the annual technology investment represents a major commitment in both terms of expenses and lost time in the case of a wrong choice.

The development section includes product development projects designed for the future launch of new products or product changes. The firm may enter up to four projects in this space. For each project the form must include a project name as specified in the INDUSTRAT name convention, and the technology on which it will be based. Only technologies already possessed by the firm are acceptable in this section. Projects based on technologies not available to the firm are automatically to be rejected and their corresponding budgets wasted.

The remainder of the entry line for each project includes the annual development budget, the project's physical specification, and production base costs. The physical characteristics must be within feasible ranges of the corresponding technology. Any specification outside these ranges will cause a bss of the budget devoted to the wrongly specified project. Continued development projects must carry the same name as in the past, with no change in specifications. Any change in one of the four physical specifications will be ignored by the simulation. However, changes in base costs while a development project is in progress are permitted.

It must be emphasized that the result of any development project may not be used until the development department has signaled a successful completion. Once this is achieved, the desired product modification, cost reduction, or new product launch is implemented if, and only if, the successful project name is entered in the second column of the product management section, following the desired product.

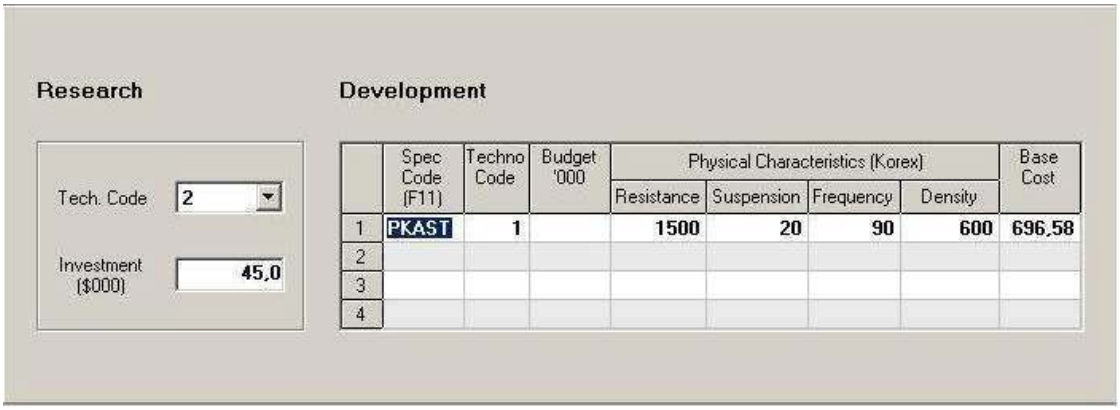



**Figure 6-5** Research and Development

## Licensing Operations

This section implements new collaboration agreement between INDUSTRAT firms. The first part lists the new agreement in which the firm is the licensor, whereas the second lists those in which the firm is a new licensee. A project name, a number designating the identity of the collaborating firm, and the annual minimum payment agreed upon are listed for every agreement approved by the simulation administrator. A maximum of five agreements may be reached annually on new licensing out whereas a maximum of two

may be reached on new licensing in agreements. Any discrepancy in the details of a licensing agreement is displayed in the licensee's and the licensor's decision forms will prevent the implementation of a licensing agreement. Licensing arrangements are automatically maintained once initiated. Therefore, it is not necessary to resubmit this information for the following years.

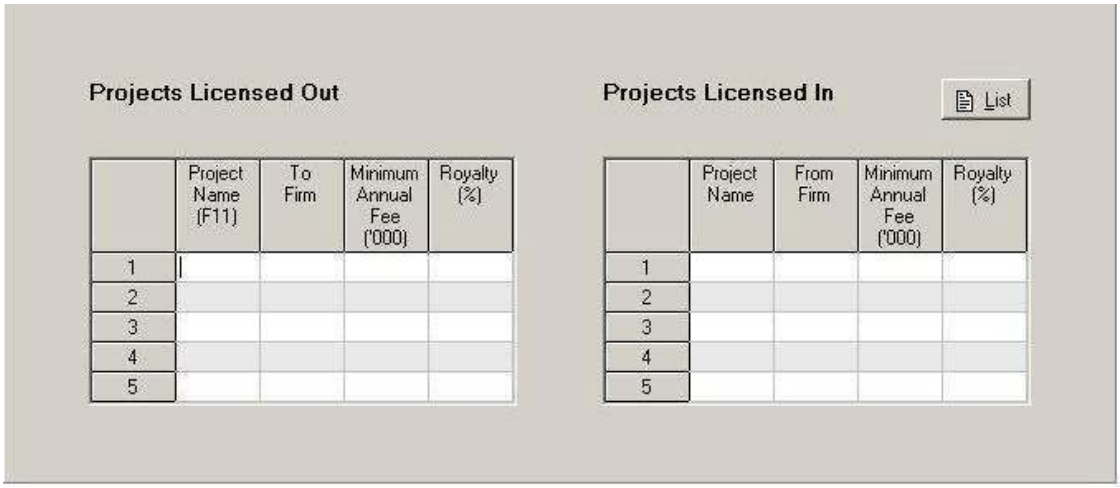



**Figure 6-6** Licensing

**Market Research**

Each of the sixteen market research studies available in the INDUSTRAT simulation may be ordered through this section. The firm may designate in the corresponding drop-down box the macrosegmentation criterion for which the information is displayed:
**Aggregate Information** only with no segmentation requested or
One of the macrosegmentation criteria – **geography, account size, or end product** or
**Optimal Segmentation**: the segmentation criterion for which the differences between the segments are the greatest.

Note that to order a study, one should select the corresponding option and the studies will incur a cost per study based on the basic price, multiplied by an appropriate factor. The basic price published in the newsletter refers to the Aggregate Information. The multiplying factor will be 1.5 for each of the macrosegmentation and 2.0 for statistically optimal segmentation criteria.

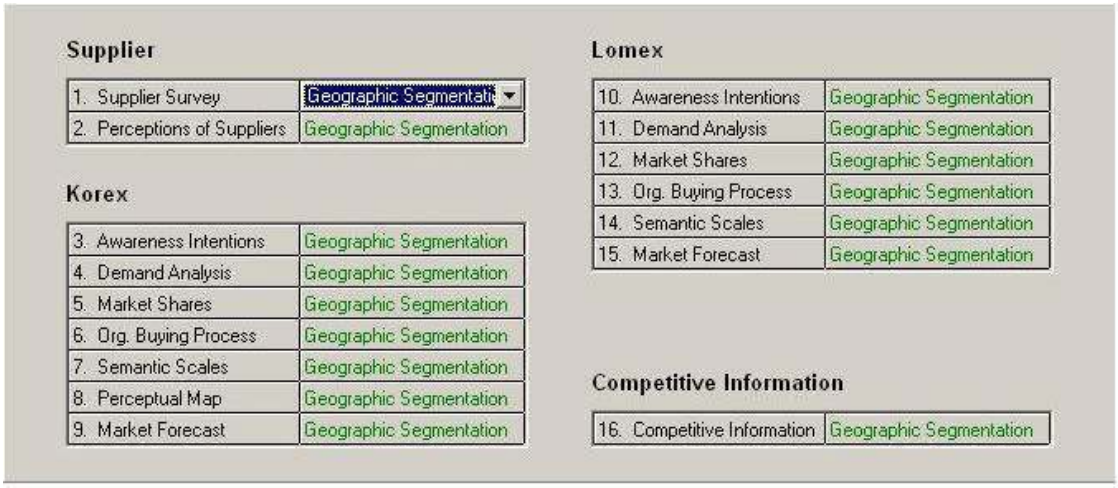



**Figure 6-7** Market Research

### Administrative Adjustments

This section of the Decision Software is used by the INDUSTRAT administrator for adjustments.

For example, investment in research for new technologies is relatively expensive and a firm may negotiate an increase in the expenditure budget for this purpose. Financing this increase may entail a long term loan from the INDUSTRAT bank (represented by the administrator), a grant, or a transfer of funds from another team. This transaction must be recorded to enable the firm to spend more than the amount authorized in the original expenditure budget for the next year. Similarly, the repayment of loans, sale of additiona1 information, buying out of obsolete inventories, fines, and any other modifications must be duly recorded and totaled on the back of the decision form.

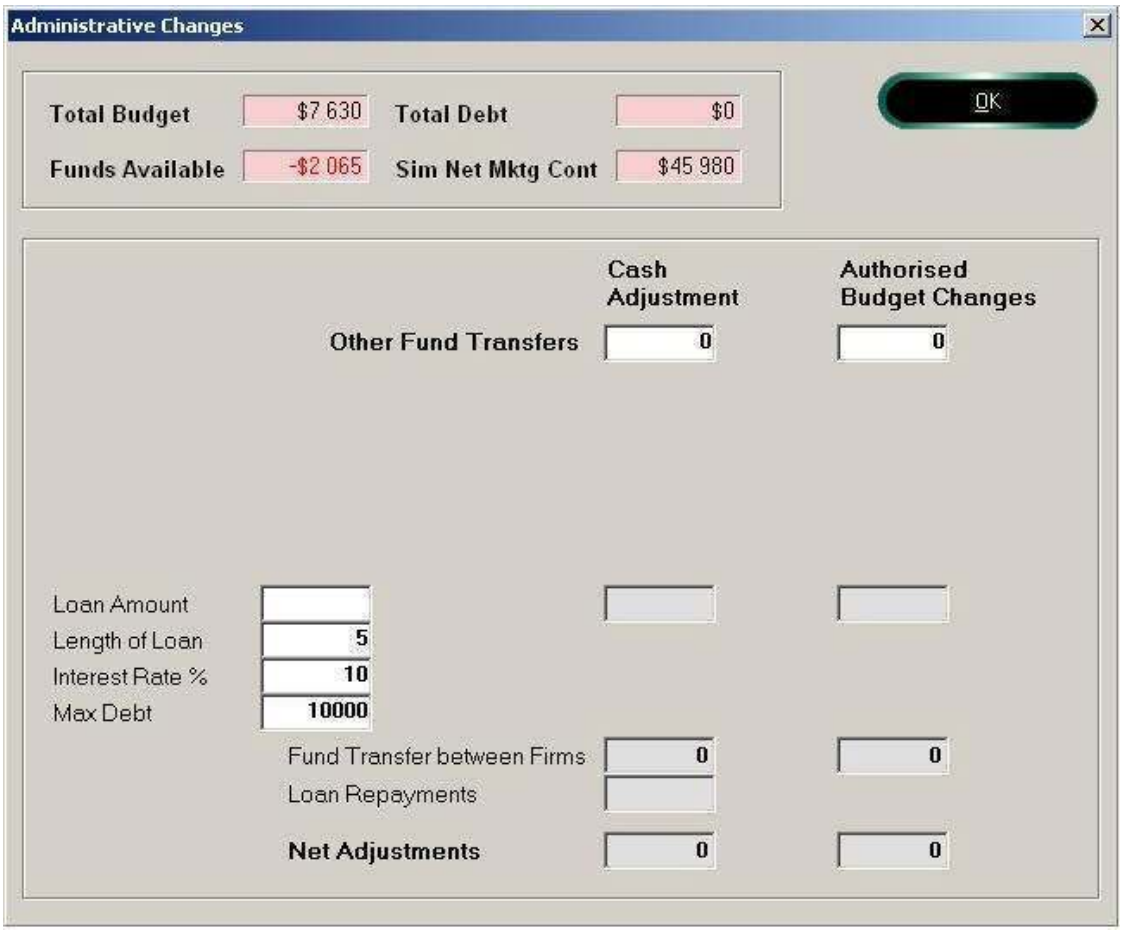



**Figure 6-8** Administrative Changes

## THE SIMULATION INFORMATION

The objective of the simulation information (Decision Software: Tools -> Simulation), shown in Figure 6-9, is to systematically specify the company's use of its marketing budget and to estimate the net marketing contribution that may result from the firm's annual decisions in the current period. The screen has the same structure as the first section of the company report and allows checking a *posteriori* for variations between a selected annual plan and the actual outcome. Obviously, the crucial estimates in the process concern the forecasted sales for each brand. The computations to be performed in this process are straightforward.


**Figure 6-9** Simulation Information

# Decision Support System: Introduction

The Decision Support System to INDUSTRAT is a comprehensive tool designed to help simulation participants analyze INDUSTRAT marketing research and competitive results. The support system should help participants distill the enormous quantity of market and competitive research data available in INDUSTRAT into meaningful insights. The use of the tool should also lead to a more structured and thorough decision making process and allows participants to concentrate on strategy and tactics rather than "number crunching" and data organization.

Do not be overly concerned if you are not familiar with computers in general. Every display which is described in this manual can be accessed through the selection of menu options. Although an initial investment of time is necessary to learn what capabilities are available in the supplement, the benefits gained over the course of the simulation will be significant. The Decision Support System will introduce or reinforce the use of many strategic management tools which will aid in competitive analysis, market evaluation and portfolio management. Often participants are able to apply the concepts and tools available in the tool to their own businesses. Use the Decision Support as an opportunity to explore some of the possible uses of strategic management support systems.

The Decision Support System can be separated into three basic parts:

1. INDUSTRAT Tools: Under the selection **Tools**. These menu choices help provide a strategic view of the INDUSTRAT world. These include tools for market evaluation, business position, customer need analysis, experience curve estimation and portfolio analysis.

2. Historical Plots: Under the selection – **Market, Corporate, Product**. These menu options allow you to graph a number of variables over the course of the simulation. By analyzing these plots, trends in market evolution and competitor strategies may emerge.

3. Data View: Drop-down selection available in all the screens. It allows you to select a particular market segment for analysis as well as specific products for comparison. The option is used in conjunction with the other menu selections and basically acts as a data filter.

The selections two and three of this manual correspond to the first two parts described above and contain the general purpose of the menu choice, important options and, in most cases, an example of a display which is available. Since the Data View feature is used in conjunction with the other menu options, it is described in the following pages under "description of menus". The next few pages are devoted to getting the Supplement up and running and providing some general guidance on its use.

## Description of Menus

The main menu options are displayed at the top of the screen as shown below:


**Figure 6-10 Main Menu Options**

Each of these main menu selections has a set of associated sub-menu options. Please see appendix 1 for the entire menu structure. To select one of the options, simply click on the option.

When you are viewing some of the historical plots (**Market, Corporate** and **Product**) or using the tools (**Tools** menu option), there are a number of variations on how to display data. The two drop-down boxes present in the screen will bring up your set of data "filter" options. For instance, the market one likes to view (Korex or Lomex) or segmentation scheme one likes to choose from (geographic, customer size or end-product).

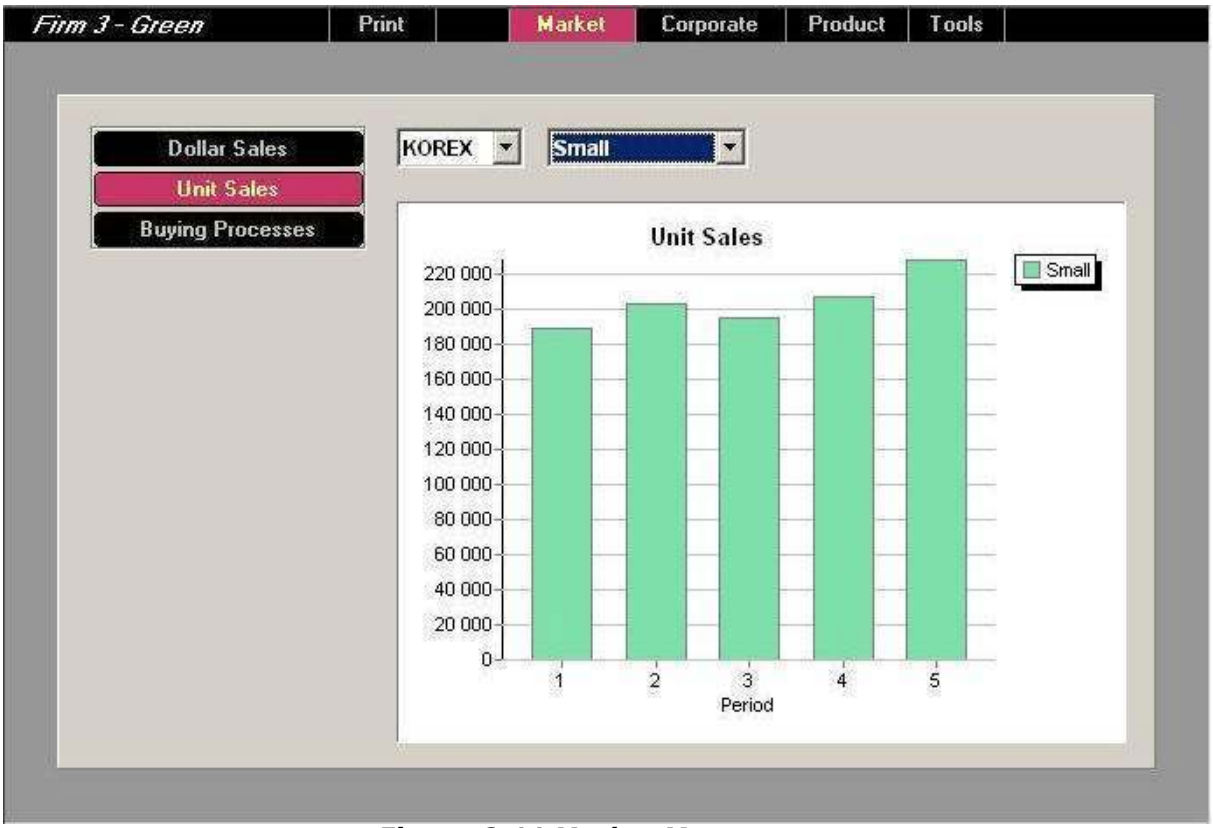



**Figure 6-11 Market Menu**

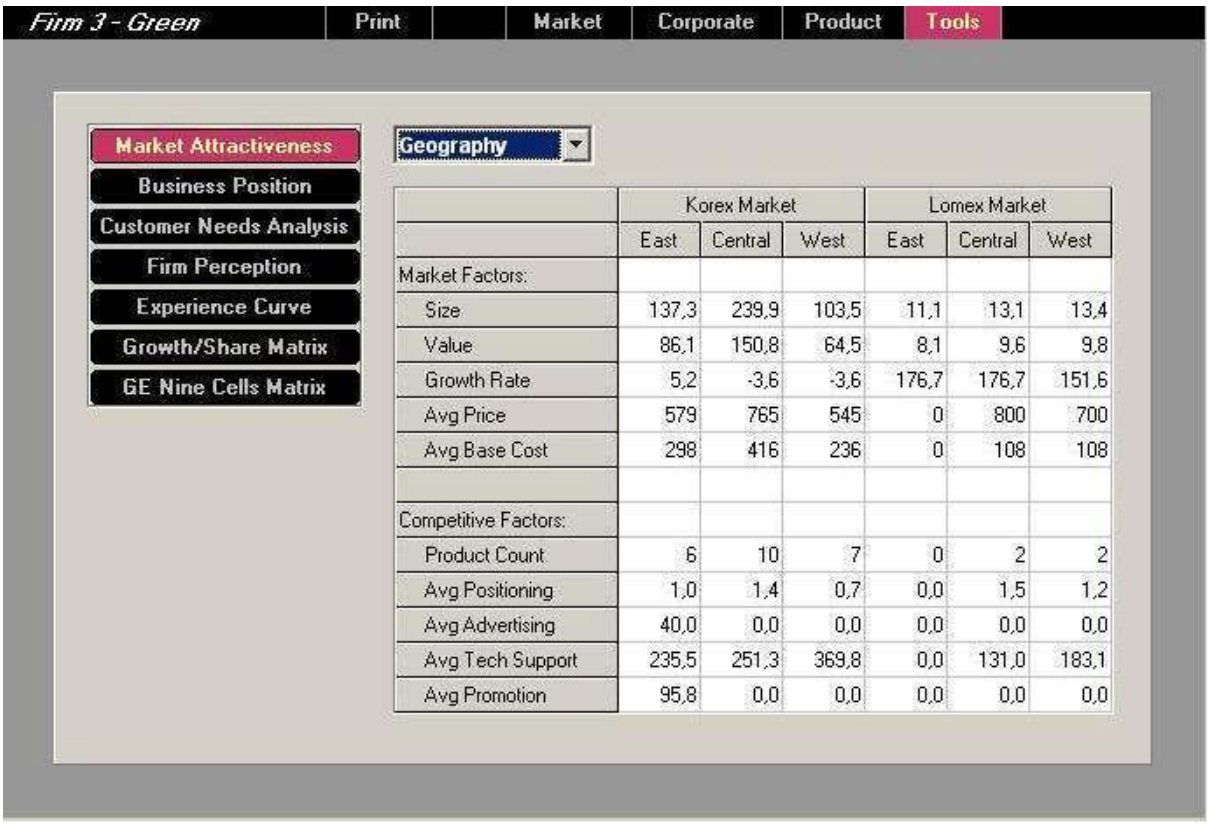
In the above example, any graphs or data which are viewed will be based on the Korex market and segmented by customer size (and only show only small size customers). There are two areas of potential confusion when using this filter. First, for some data, these factors do not apply. For instance, if you are viewing sale force personnel by firm under the **Corporate** menu, division into Korex and Lomex markets and segments does not apply. Thus, for this menu option, none of these filters apply. Second, your firm may not have purchased data on a segmented basis (or at all) and therefore certain reports or options may not be applicable. For these situations, the menu option will be disabled (grayed out). This means that based on your current filtering approach, your firm did not purchase the market research necessary to view this menu option. You will either have to change the filter option or use a different menu item.

If you purchase market research under the optimal option, you will be able to view any segmentation scheme for menu choices which are based on that market research. To help avoid confusion when viewing data available on a segmented basis, the appropriate choices are enabled and the rest are disabled (grayed-out).

Click on the **Print** option, to print the graphic output to your default printer. In case you face problems, please check under Start -> Settings -> Printers and Faxes ,of your PC, if the printer is configured correctly. This option has no effect on printing text as the software is designed to work with all text printers.

**Tools Menu**




| | Korex Market | | | Lomex Market | | |
|---|---|---|---|---|---|---|
| | East | Central | West | East | Central | West |
| Market Factors: | | | | | | |
| Size | 137,3 | 239,9 | 103,5 | 11,1 | 13,1 | 13,4 |
| Value | 86,1 | 150,8 | 64,5 | 8,1 | 9,6 | 9,8 |
| Growth Rate | 5,2 | -3,6 | -3,6 | 176,7 | 176,7 | 151,6 |
| Avg Price | 579 | 765 | 545 | 0 | 800 | 700 |
| Avg Base Cost | 298 | 416 | 236 | 0 | 108 | 108 |
| | | | | | | |
| Competitive Factors: | | | | | | |
| Product Count | 6 | 10 | 7 | 0 | 2 | 2 |
| Avg Positioning | 1,0 | 1,4 | 0,7 | 0,0 | 1,5 | 1,2 |
| Avg Advertising | 40,0 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |
| Avg Tech Support | 235,5 | 251,3 | 369,8 | 0,0 | 131,0 | 183,1 |
| Avg Promotion | 95,8 | 0,0 | 0,0 | 0,0 | 0,0 | 0,0 |

**Figure 6-12 Tools Menu**

The **Tools** menu options provide some additional analysis techniques to add further insight to the market research data. The basic options are briefly reviewed below:

Market Attractiveness - Provides an overview of ten market and competitive factors which can be used to evaluate the potential of different market segments.

Business Position - Displays a summary of a brand's relative market position based on ten factors.

Customer Need - Based on the semantic scale market research (studies 7 and 14), allows graphical representation of all three major dimensions, ideal point and product tracking, technology boundary overlays and ideal point estimation based on regression analysis.

Supplier Perceptions - Tracks ideal supplier attributes on the three main attributes and provides a graphical representation of market research study 2.

| | |
|---|---|
| Experience Curve | - Estimates the experience rate and projects unit cost based on various levels of cumulative production. |
| Growth/Share Matrix | - Provides the basic BCG framework (market growth by relative market share) for portfolio analysis. |
| GE Nine Cell Matrix | - The GE Nine Cell Matrix is generated based on the market attractiveness and business position summaries above. This will provide some indication of appropriate product strategies one should consider (Invest/grow, selective investment, harvest/divest). |
| Cash Sources/Uses | - The cash sources/uses provides an overview of expenditures and margins by product. |

**Market Menu**

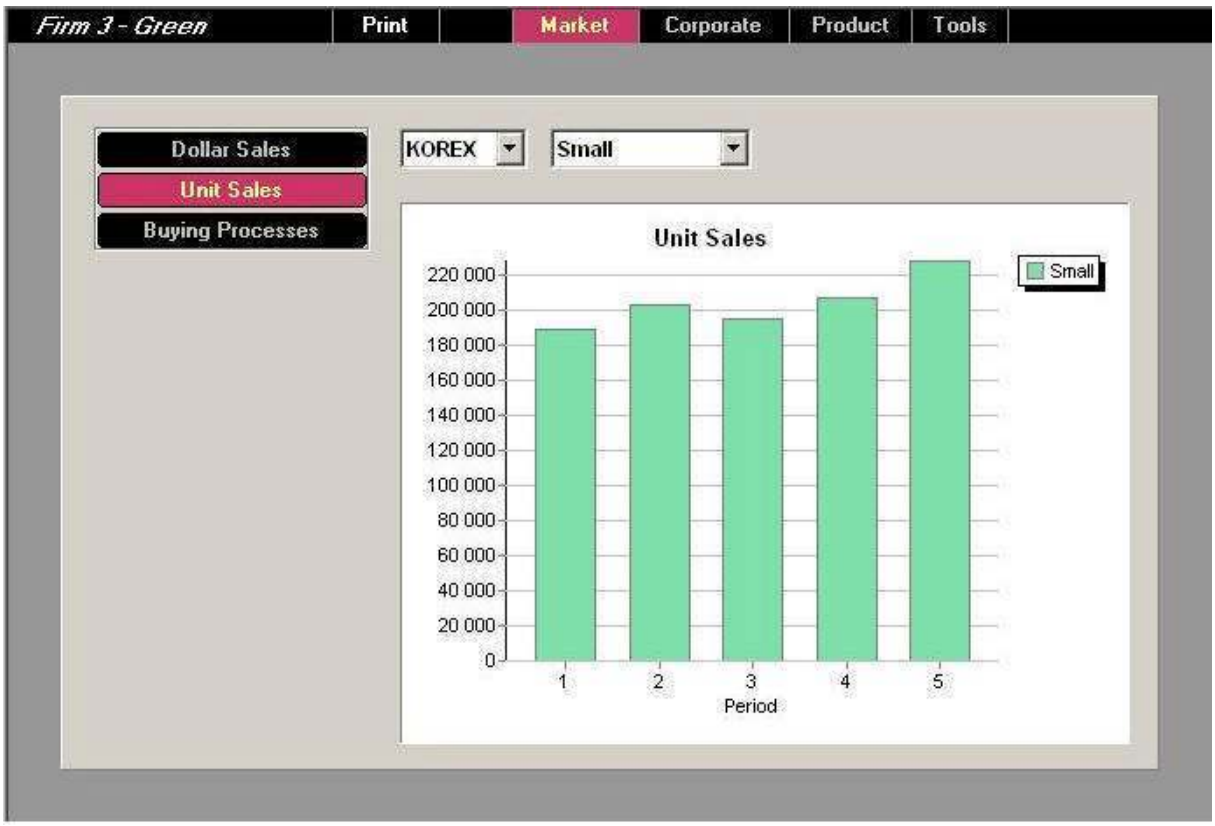



**Figure 6-13 Market Menu**

The **Market** menu options provide tread analysis on overall market data. These graphs are only available if you order the appropriate market research study. Segmented values are displayed if ordered on a segmented basis. All segmentation schemes are available if you purchase the optimal segmentation approach. The menu choices under MARKET are briefly outlined below:

| | |
|---|---|
| Dollar Sales | - Generates a bar graph of dollar sales by segment from studies 4 and 11. |
| Unit Sales | - Generates a bar graph of unit sales by segment from studies 4 and 11. |
| Buying Processes | - Displays a line graph of the relative weights of different decision makers by segment (from studies 6 and 13). |

**Corporate Menu**


**Figure 6-14 Corporate Menu**

The **Corporate** menu options provide trend analysis over periods 1 - 10 on data broken down by firm. These graphs are only available if you order the appropriate market research study. The menu choices under **Corporate** are briefly outlined below:

| | |
|---|---|
| Sales Force | - Generates a bar graph of number of salesperson by firm from study 16. |
| Sales Force Training | - Displays a line graph of sales force training expenditures by firm from study 16. |
| Technical Support | - Generates a bar graph of number of technicians by firm from study 16. |
| Technical Training | - Displays a line graph of technical training expenditures by firm from study 16. |
| Corporate Marketing | - Displays a line graph of corporate marketing expenditures by firm from study 16. |
| Awareness | - Displays a line graph of supplier awareness by firm from study 1. |
| Preference | - Displays a line graph of supplier preference by firm from study 1. |
| Total Firm Sales | - Displays a line graph of total firm sales (Korex and Lomex combined) from the newsletter. |
| Segmented Sales | - Displays a line graph total sales by firm from studies 4, 5, 11 and 12. |
| Unit Share | - Displays a line graph of share of units by firm from studies 5 and 12. |
| Net Marketing Contribution | - Displays a line graph of your firm's net marketing Contribution. |

**Product Menu**

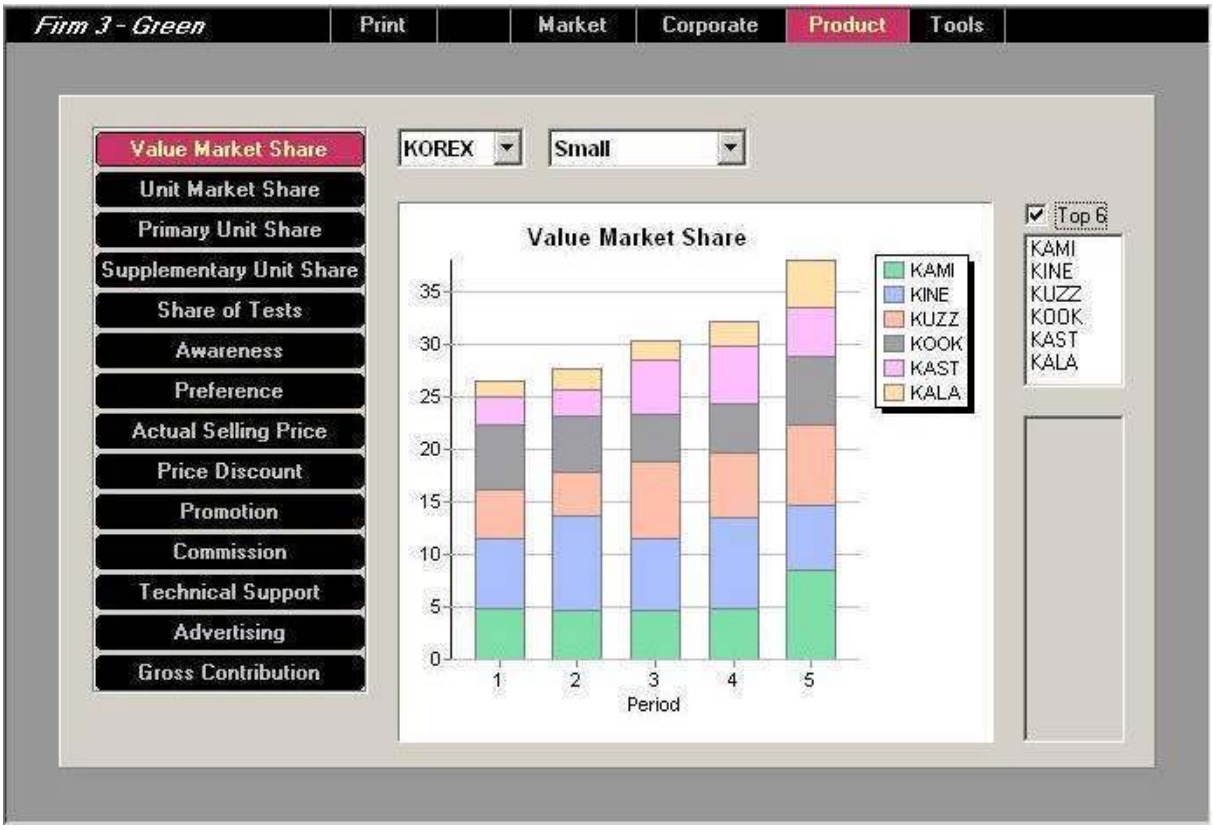



**Figure 6-15 Product Menu**

The **Product** menu options provide trend analysis over periods 1 – 10 on data at the product level. These graphs are only available if you order the appropriate market research study. Segmented values can be displayed if ordered on a segmented basis. All segmentation schemes are available if you purchase the optimal segmentation approach. The menu choices under **Product** are briefly outlined below:

Value Market Share - Generates a bar graph of market share based on dollar sales from studies 5 and 12.

Unit Market Share - Generates a bar graph of product market share from studies 5 and 12.

Primary United Share - Generates a bar graph of primary market share from studies 5 and12.

Supplm Unit Share - Generates a bar graph of supplementary share from studies 5 and 12.

| | |
|---|---|
| Share of Tests | - Generates a bar graph of test market share from studies 5 and 12. |
| Product Awareness | - Generates a line graph of product awareness from study 3. |
| Product Preference | - Generates a line graph of product preference from Study 3. |
| Actual Selling Price | - Displays a line graph of a product's actual selling price from the newsletter. |
| Price Discount | - Displays a line graph of a product's maximum price discount from study 16. |
| Promotion | - Displays a line graph of a product's promotional spending from study 16. |
| Commission | - Displays a line graph of a product's commission schedule from study 16. |
| Technical Support | - Displays a line graph of a product's expenditures on technical support from study 16. |
| Advertising | - Displays a line graph of a product's advertising expenditures from study 16. |
| Gross Contribution | - Displays a line graph of your products' gross marketing contribution. |

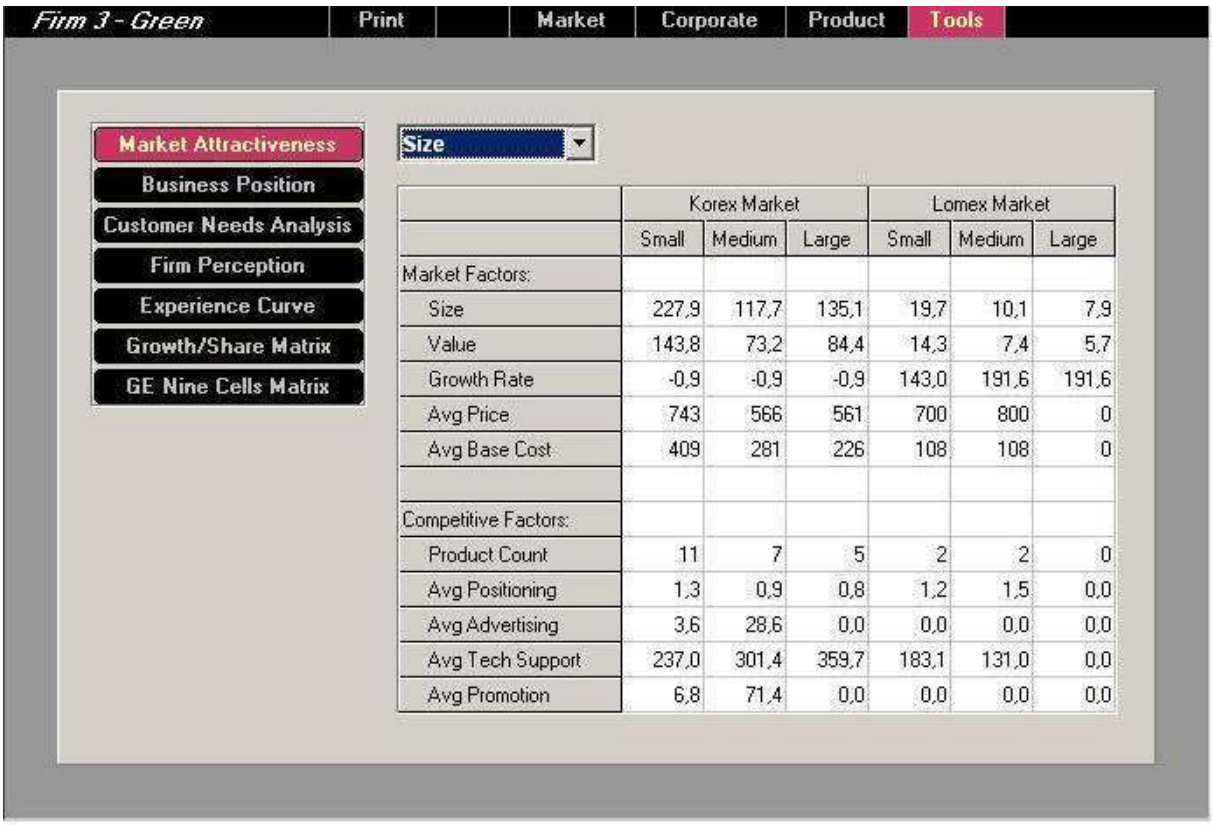
 

# Decision Support System: Tools Menu

The Tools menu contains seven options. The first four options are enhancements of the marketing research. In most cases, these options combined several pieces of marketing research into a new form and provide a tool to analyze the data. The next option is an experience curve worksheet which can help you estimate the experience rate or product costs at various levels of cumulative production. The last three options are portfolio analysis tools to help you decide how to allocate budget funds and analyze the overall health of your products. Each of these menu choices is described in the following pages along with a screen display. Please note that all of these values have been altered for use in the manual. They do not represent any real data and are for illustrative purposes only.

## Market Attractiveness

This menu option is a tool to aid evaluation of the relative attractiveness of different market segments. The data provided in this summary can help you determine which segmentation approach to use, which new segments to target or which segments should receive a greater (or lesser) investment of time and resources. When you first select this menu option, you are asked to choose a segmentation approach – geographic, customer size or end product. A sample screen for Size segmentation is presented below:




| | Korex Market | | | Lomex Market | | |
|---|---|---|---|---|---|---|
| | Small | Medium | Large | Small | Medium | Large |
| Market Factors: | | | | | | |
| Size | 227,9 | 117,7 | 135,1 | 19,7 | 10,1 | 7,9 |
| Value | 143,8 | 73,2 | 84,4 | 14,3 | 7,4 | 5,7 |
| Growth Rate | -0,9 | -0,9 | -0,9 | 143,0 | 191,6 | 191,6 |
| Avg Price | 743 | 566 | 561 | 700 | 800 | 0 |
| Avg Base Cost | 409 | 281 | 226 | 108 | 108 | 0 |
| | | | | | | |
| Competitive Factors: | | | | | | |
| Product Count | 11 | 7 | 5 | 2 | 2 | 0 |
| Avg Positioning | 1,3 | 0,9 | 0,8 | 1,2 | 1,5 | 0,0 |
| Avg Advertising | 3,6 | 28,6 | 0,0 | 0,0 | 0,0 | 0,0 |
| Avg Tech Support | 237,0 | 301,4 | 359,7 | 183,1 | 131,0 | 0,0 |
| Avg Promotion | 6,8 | 71,4 | 0,0 | 0,0 | 0,0 | 0,0 |

**Figure 6-16 Market Attractiveness**

The market factors listed above are fairly common approaches to evaluating a market's attractiveness. The five factors included in this study are size in units, value in dollars, growth rate, average price and average base cost (for products defined as competing in this target segment – see below). The difference between the price and base cost may give you some indication of the margins possible by targeting a specific segment.

For the competitive factors, each product is assigned a specific target segment. This is done by finding the segment where the brand has the highest market share. For example, if KALA had 4% of the share in the East, 5% in the Central and 8% in the West, it would be assigned to the West segment. The average positioning is calculated by finding the average difference between the semantic ideal and each product's semantic scale values (from studies 7 and 14). Average advertising, technical support and promotion is the average amount spent in each of these areas by the products defined as competing in that segment.

When NA is displayed under the Lomex market (as in the above example), no data is available for the market. This will be the situation until a Lomex product is introduced. In order to evaluate the attractiveness of the Lomex market early on, you will have to rely on the market research forecasts and your own intuition.

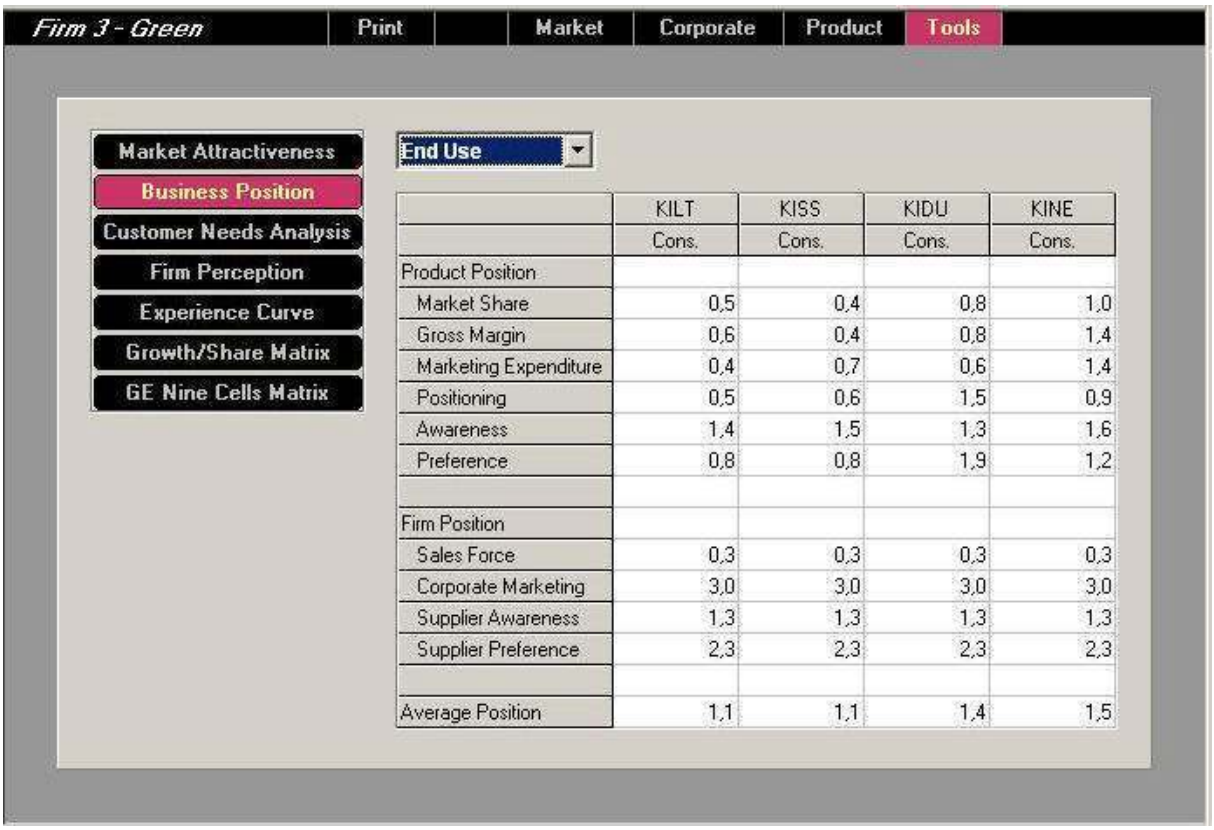
## Business Position

Whereas market attractiveness is helpful for determining the segments where you wish to be competing, the business position option is used to summarize your current market position in a segment relative to your competitors. When you first select this menu option, you are asked to choose a segmentation approach – geographic, customer size or end product.

All of the values are displayed as relative to the average for the top 3 products (based on market share) defined as competing in that segment. Firm position values are derived in the same way. Sales force and corporate marketing expenditures are based on overall levels whereas supplier awareness and preference are based on relative values for the segment where the product is competing. The average position (at bottom) shows a product's relative strength in a segment. Products whose average position is less than 1 would not be considered having a leading position in that market relative to the competition.

A sample screen for end product segmentation is presented below:




| | KILT | KISS | KIDU | KINE |
|---|---|---|---|---|
| | Cons. | Cons. | Cons. | Cons. |
| Product Position | | | | |
| Market Share | 0,5 | 0,4 | 0,8 | 1,0 |
| Gross Margin | 0,6 | 0,4 | 0,8 | 1,4 |
| Marketing Expenditure | 0,4 | 0,7 | 0,6 | 1,4 |
| Positioning | 0,5 | 0,6 | 1,5 | 0,9 |
| Awareness | 1,4 | 1,5 | 1,3 | 1,6 |
| Preference | 0,8 | 0,8 | 1,9 | 1,2 |
| | | | | |
| Firm Position | | | | |
| Sales Force | 0,3 | 0,3 | 0,3 | 0,3 |
| Corporate Marketing | 3,0 | 3,0 | 3,0 | 3,0 |
| Supplier Awareness | 1,3 | 1,3 | 1,3 | 1,3 |
| Supplier Preference | 2,3 | 2,3 | 2,3 | 2,3 |
| | | | | |
| Average Position | 1,1 | 1,1 | 1,4 | 1,5 |

**Figure 6-17 Business Position**

## Customer Need Analysis

Marketing research required: Studies 7 or 8 (for Korex) and 14 (for Lomex)

One of the most difficult aspects of INDUSTRAT (or of marketing in general), is translating customer preferences and desires into tangible characteristics which can be designed and ultimately, manufactured into products. This analysis is certainly simplified in INDUSTRAT, and this menu choice helps to integrate the various parts of this translation into one process. In INDUSTRAT, customer needs are communicated through marketing research in the form of semantic and perceptual map ideal points. Thus, the product, which comes closest to these ideal points, is likely to have an advantage (all other aspects held constant) in that particular customer segment.

To use this tool, you must order either study 7 or 8 for the Korex market or study 14 for the Lomex market. Ordering the optimal segmentation approach will allow access to all segmentation schemes. Ideal point and product perception values are derived from the weighted average of the micro-segment decision makers using the data in studies 7 and 14.

When you initially click on Customer Need Analysis, a screen will appear which lists the semantic values and actual product specifications for the top ten products (from high market share to low) using the current segmentation approach. Thus, if you had selected Korex and west under the drop-down menu options, the top ten Korex products in the west would be listed. This will allow you to see the leading products' specifications in the context of a segmentation approach.

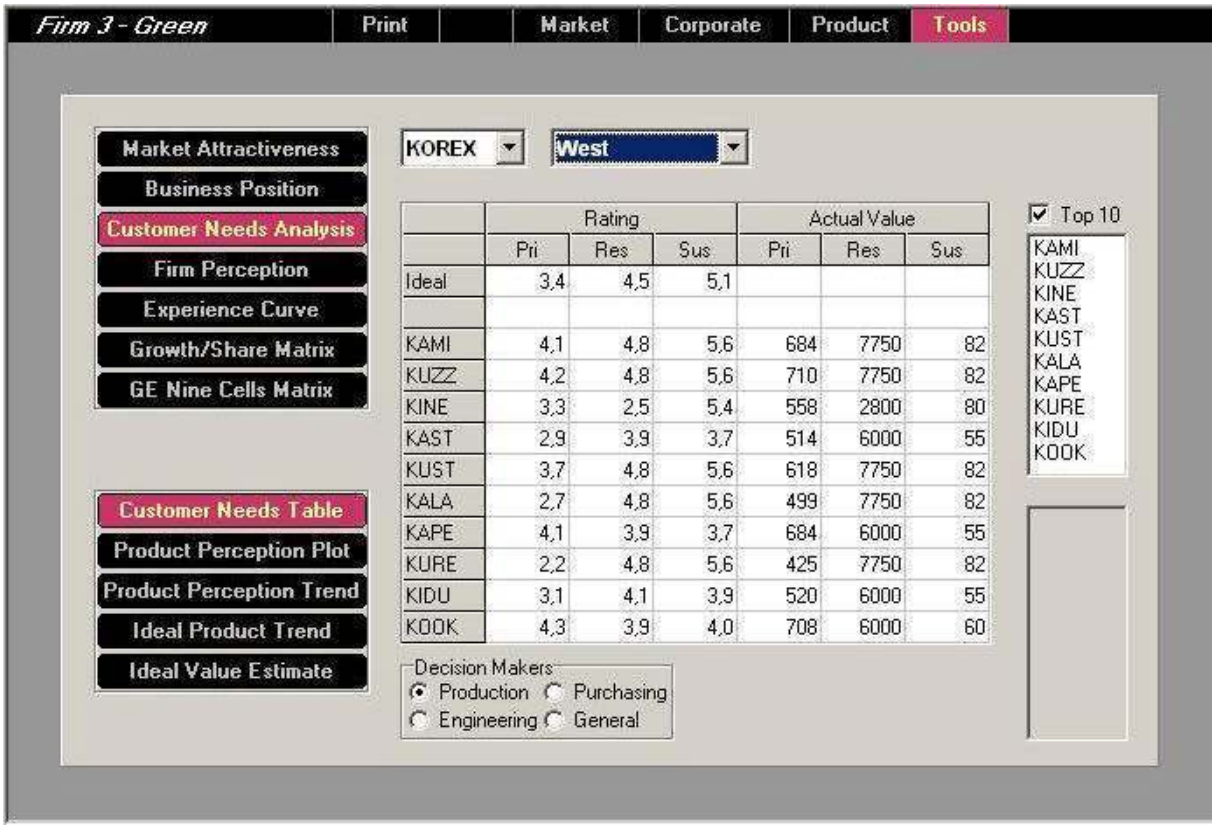



**Figure 6-18 Customer Needs Analysis, Customer Needs Table**

**Customer Need Analysis** gives a number of choices for the user, for displaying the relevant data. These are described in more detail below.

*i. Select Axes*

For displaying the graphs, the user can select which two axes (price, resistance or suspension for Korex; price conductivity or convexity for Lomex) one would like to view while using the appropriate segmentation or DMU or semantic scales plots. This can be done by selecting from the drop-down box in the screen.

*ii. Select Technology*

The feature: **Customer Need Analysis** will allow you to overlay a plot of estimated technology boundaries on a semantic plot. This overlay may help you decide which technologies warrant investment or where you or your competitors may be vulnerable because of their inability to develop a product near a customer's ideal. When Lomex is the current segmentation approach, this option will not be available because there is only one Lomex technology. Also, there is no technical boundary on the price axis, because you may price at any level. Therefore, when price is one of the axes plotted, the boundary will be a long box. When resistance and suspension are plotted, you will get a better idea of the true physical limitations of a particular technology. The Technology can be selected by clicking on the box beside the relevant Technology, under **Technology Bounds**. (This is not available for the sub-features : Customer-Needs Table and Ideal

Value Estimate) This option will estimate the placement of all four technology boundaries on the perceptual map (Korex only).

*iii. Select Products*

The feature can be used to view a different set of products. For instance, you may want to restrict the plot to only your brands or a particular group of competitive products. Basically, this is the same as the **Products** menu choice. The top 10 products in the current market segment will be displayed if no brands are selected. Note that a maximum of 10 brands can be plotted at one time.

*iv. Select Segments*

**Customer Need Analysis** allows you to select a particular market segment (or combination of segments) to analyze and is especially important when trying to estimate ideal products or plotting ideal trends. This is same as selecting the segment from the drop-down menu , as in any other feature

*v. Select Decision Maker*

A particular decision maker (or combination of decision makers) can be selected to analyze and is especially important when trying to estimate ideal products or plotting ideal trends.
At the bottom of the **Customer Need Analysis** screen under **Decision Makers**, one can select the appropriate decision maker.

**Product Perception Plot**

Clicking on **Product Perception Plot** in Customer Need Analysis, allows you to see a perceptual map (actually a two dimensional mapping of the semantic scales) on any combination of two of the three most important product dimensions (use option A to change combination). Up to ten products can be viewed along with the ideal point. An example screen is shown below:

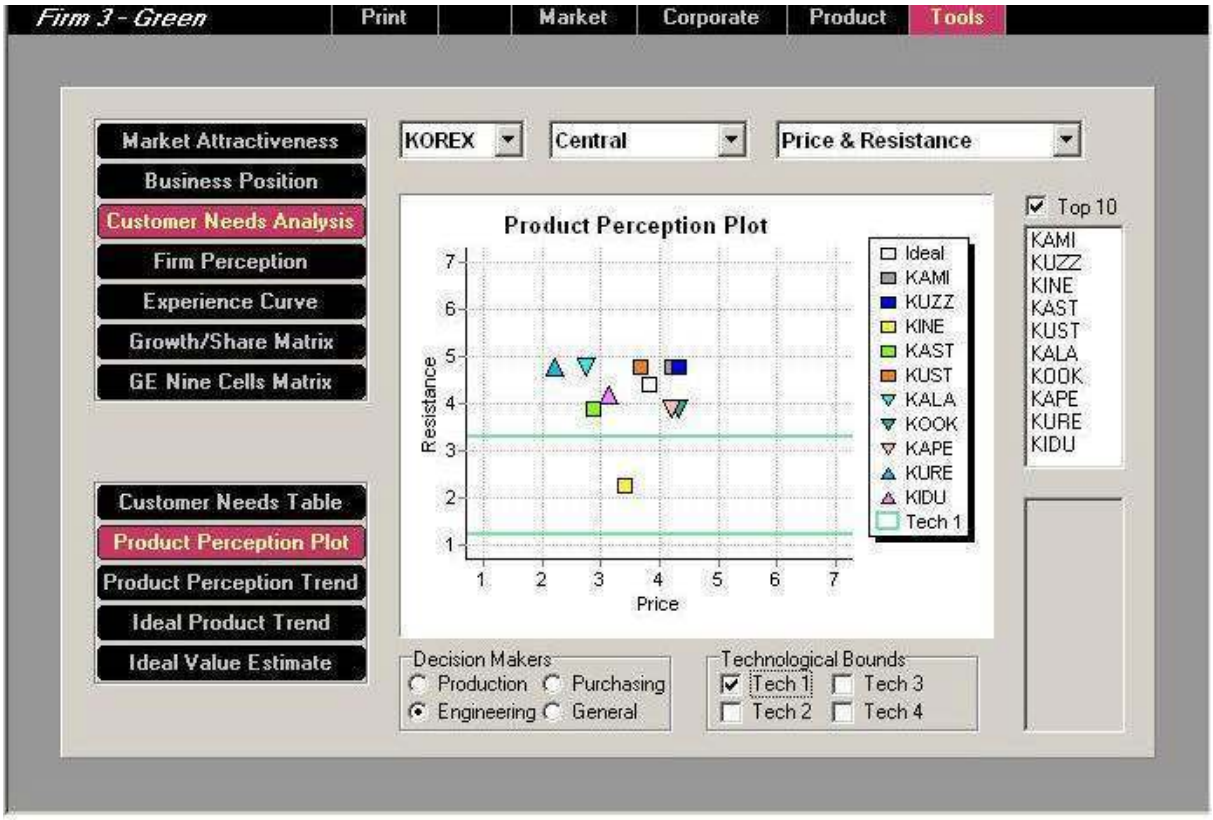



**Figure 6-19 Product Perception Plot**

The three drop-down boxes at the top of the figure: Korex, Central and Price & Resistance correspond to the selections of Market, Segmentation and Axes for display respectively.
At the bottom of the screen, one can select the relevant choice from **Decision Makers** and **Technological Bounds**.

**Product Perception Trend**

This sub-feature on the customer need analysis allows you to see the trend of a product's perception overtime. This can be used to highlight price changes (if price is one of the two axes) or changes in a product's actual attributes ("improved" resistance or suspension for Korex). A difference also may reflect a change in the way a product is perceived for one reason or another. The following figure illustrates the product perception trend for product **KAMI** under **Korex** market with size Segmentation: **Small** and plotting on the axes **Resistance & Suspension**. The Decision maker chosen is **Production Manager** and Technologies: **2** and **4.**

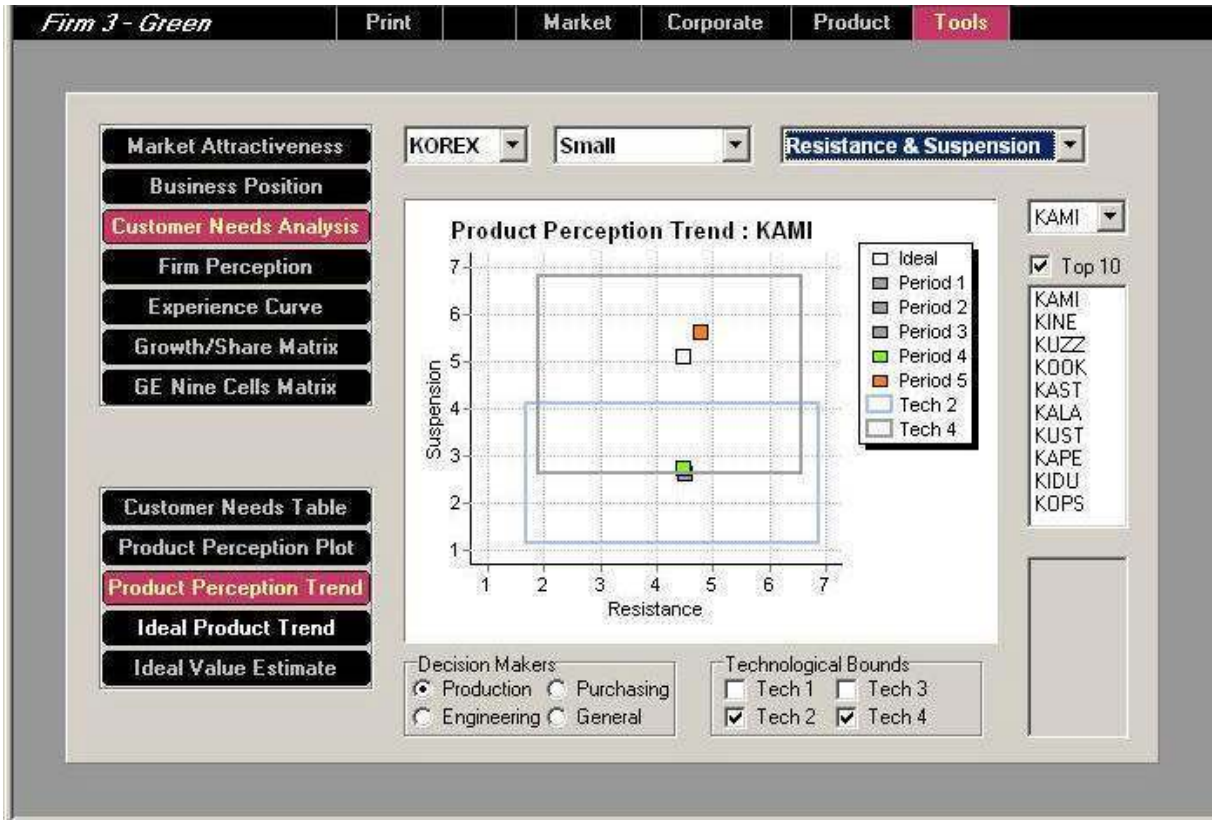



**Figure 6-20 Product Perception Trend**

### Ideal Product Trend

The sub-feature shows the trend in the ideal product semantic scale attributes over time. Use this option to help forecast future customer needs. An example of this option using the technology boundary overlay is shown below. The ideal product for the aggregate market has resistance and suspension slowly increasing over time.

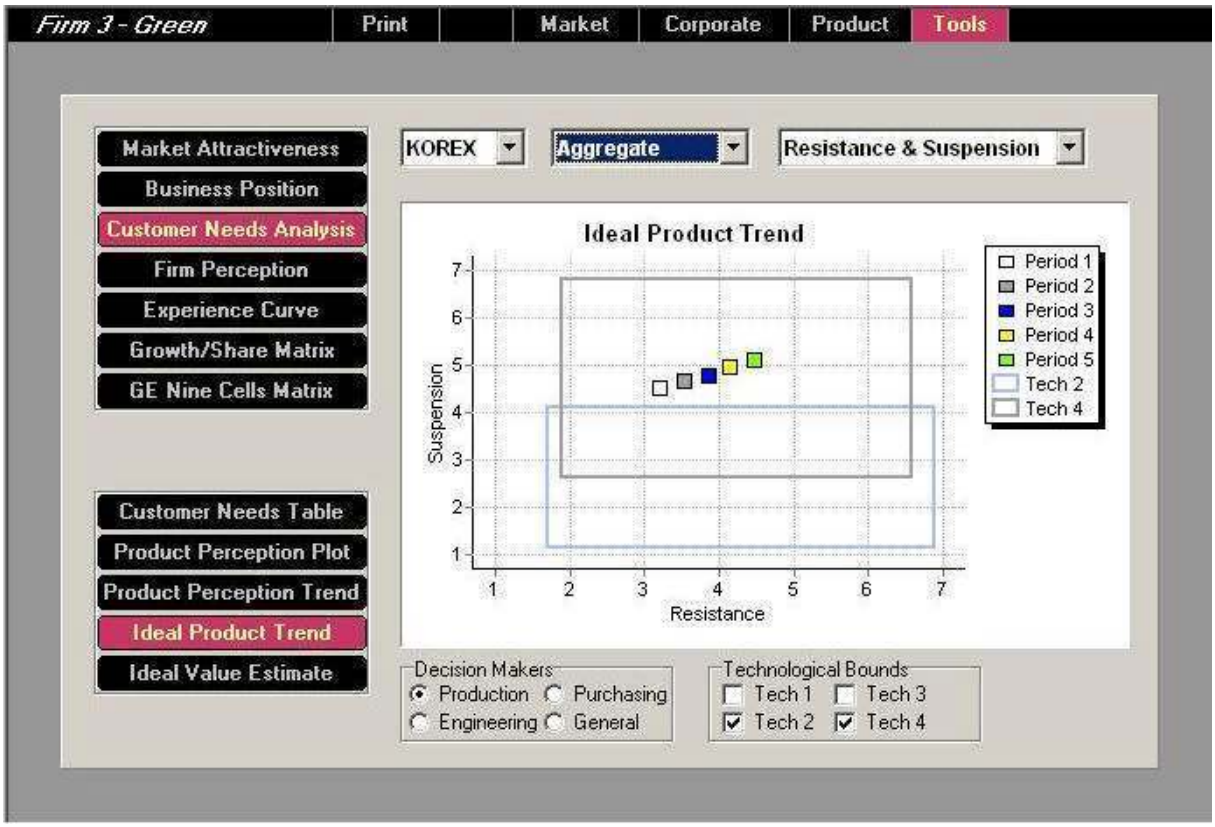



**Figure 6-21 Ideal Product Trend**

## Ideal Value Estimation

The final issue is converting semantic or perceptual values into actual physical characteristics. Fortunately, in Industrat, perceived and physical characteristics have the same basis. In other words, resistance is both an important physical attribute and an important perceived attribute. This means that customers consider resistance to be one of the main criteria of product choice rather than some combination of specifications which may make up a perceived criterion called technical quality (although supplier choice has this type of criteria). Thus, it is relatively easy to make some sort of translation between perceived attributes (e.g. resistance on a scale of 1-7) and actual attributes (resistance on a scale of 500-12000), especially since all actual product characteristics are known through the newsletter.

The final sub-feature of **Customer Need Analysis** is the ideal value analysis (J). This option attempts to determine the relationship between the actual product attributes and the customer's perception (semantic scale) of a product using linear regression. A linear equation is estimated which bests describes this relationship in the form:

$$Y = B_0 + B_1 X$$

where Y is the dependent variable (actual values from newsletter), X is the independent variable (semantic scale values from market research studies 7 and 14), $B_0$ is the intercept and $B_1$ is the slope. This equation can then be used to estimate the ideal product characteristics for this particular group of customers. This is done automatically for you. It also uses the equation to solve for the semantic scale values to help you see where a product's perceptions differ from what you would expect based on their actual values. When you click on this option, the following screen appears:

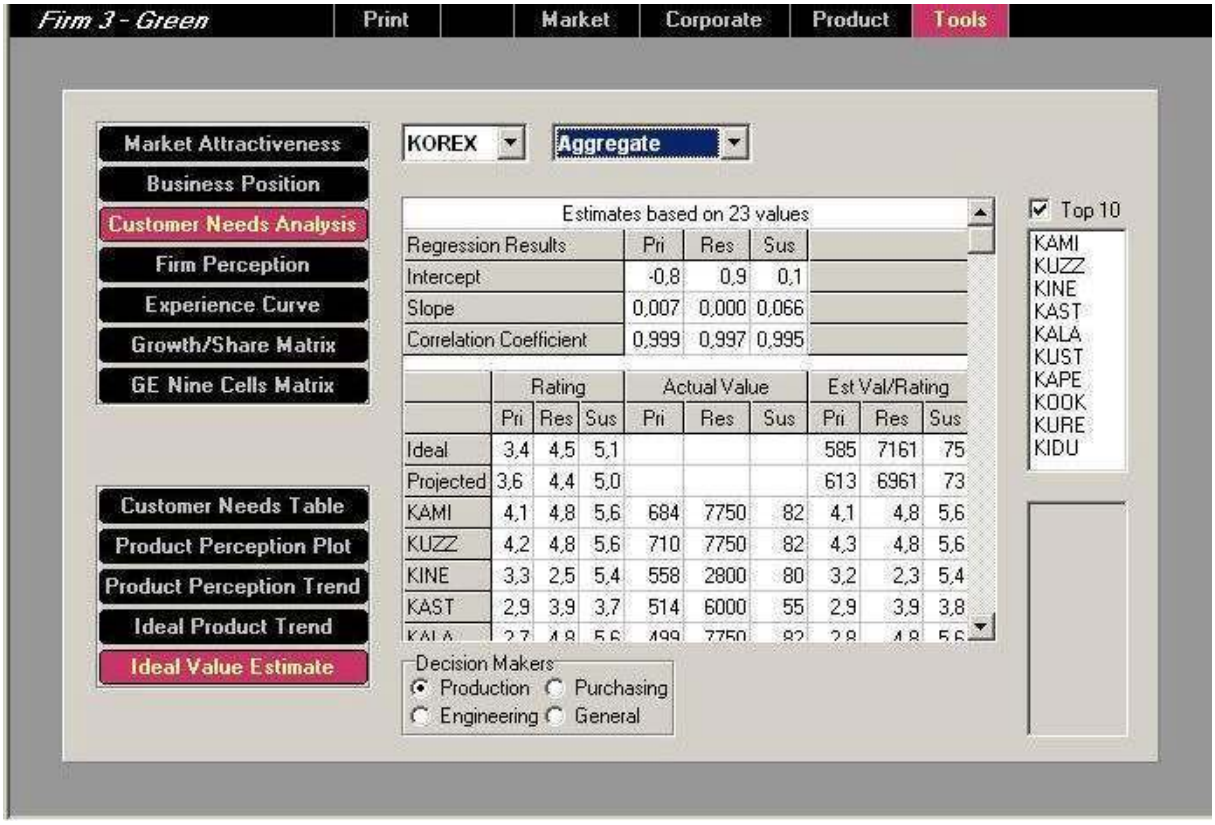



**Figure 6-22 Ideal Value Estimate**

At the top, you will see what Market and segmentation scheme you are currently analyzing. In this case, the values are for the east region. On the grids below all of the basic regression output information is displayed. You should check the correlation coefficient which measures error in the estimation. Values of 1 (or -1) are perfectly correlated, thus the closer the correlation coefficient is to 1 or -1 the better the relationship. If values are between -.90 and .90, your estimate of the ideal may not be very reliable. Also, the regression analysis is not available unless there are at least 3 product points (n→3). Therefore, until three Lomex products are introduced, this option will not be available for that market.

The estimates of the ideal values for the three major product attributes are on the right side of the screen on the line marked "ideal". These were calculated using the regression

line shown on the top part of the screen. Thus, for price in the above example, the equation is:

| | | |
|---|---|---|
| Ideal Price | = | Intercept ($B_0$) * 1000 + ( Slope ($B_1$)*1000) x semantic ideal |
| | = | -0.8* 1000 + (0.7 * 1000) * 3.4 (all values rounded) |
| | ~ | $570 |

The row marked "Projected" is for you to enter your own positioning goals. These may be semantic values between several particular segment ideal points or may be an estimate of where you think customer needs are moving. It also might be the estimated ideal for a particular decision maker whom you wish to target. In the above example, entries were made based on forecasted customer trends for this particular segmentation approach. Therefore, a development project with a resistance of 7000 and suspension of 73 was begun in anticipation of these customer preferences.

## Firm Perceptions

Market research required: Study 2 (survey on perceptions of suppliers)

This feature is an extension of marketing research study 2, supplier perceptions. Therefore, you must have purchased study 2 in order to use this tool. The data is available on a segmented basis if study 2 was ordered under a particular segmentation scheme or optimal.

**Firm Perception Table**
When you first click on **Firm Perceptions**, the ideal point and the semantic values for the five firms will be displayed under the categories: Technical, Commercial and General Reputation. The data can be filtered still based on segmentation and the decision maker.

An example of Firm perceptions with geographic segmentation: East and the decision maker as the Production Manager, is shown below.

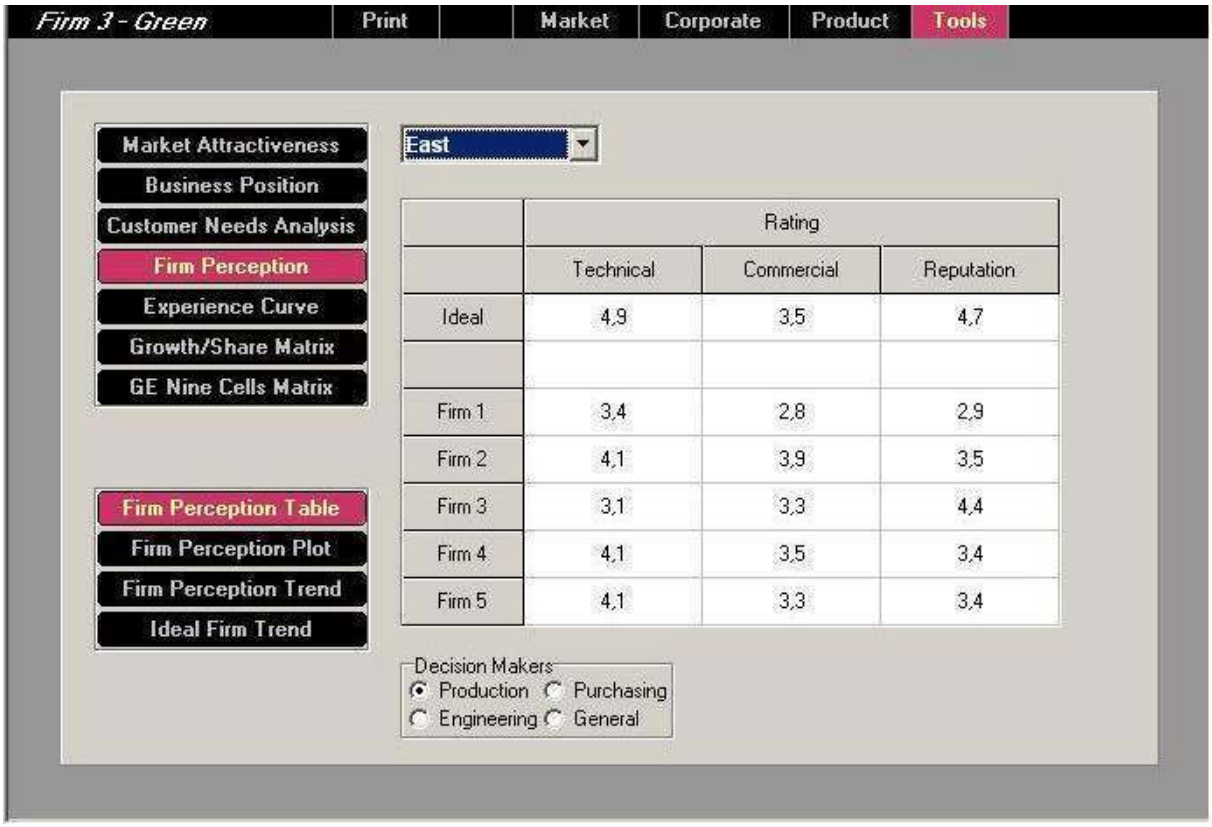



**Figure 6-23 Firm Perception Table**

### Firm Perception Plot

This sub-feature under **Firm Perception** is used to plot current period firm (supplier) perceptions.

The user can choose the axes to be plotted (two among: Technical, Commercial and General Reputation) along with the relevant segmentation scheme and decision maker. The example figure below displays the relative position of the firms in terms of their commercial and general perceptions, imposing the constraints of end-product segmentation of Instrumentation and the General Manager as the decision maker.

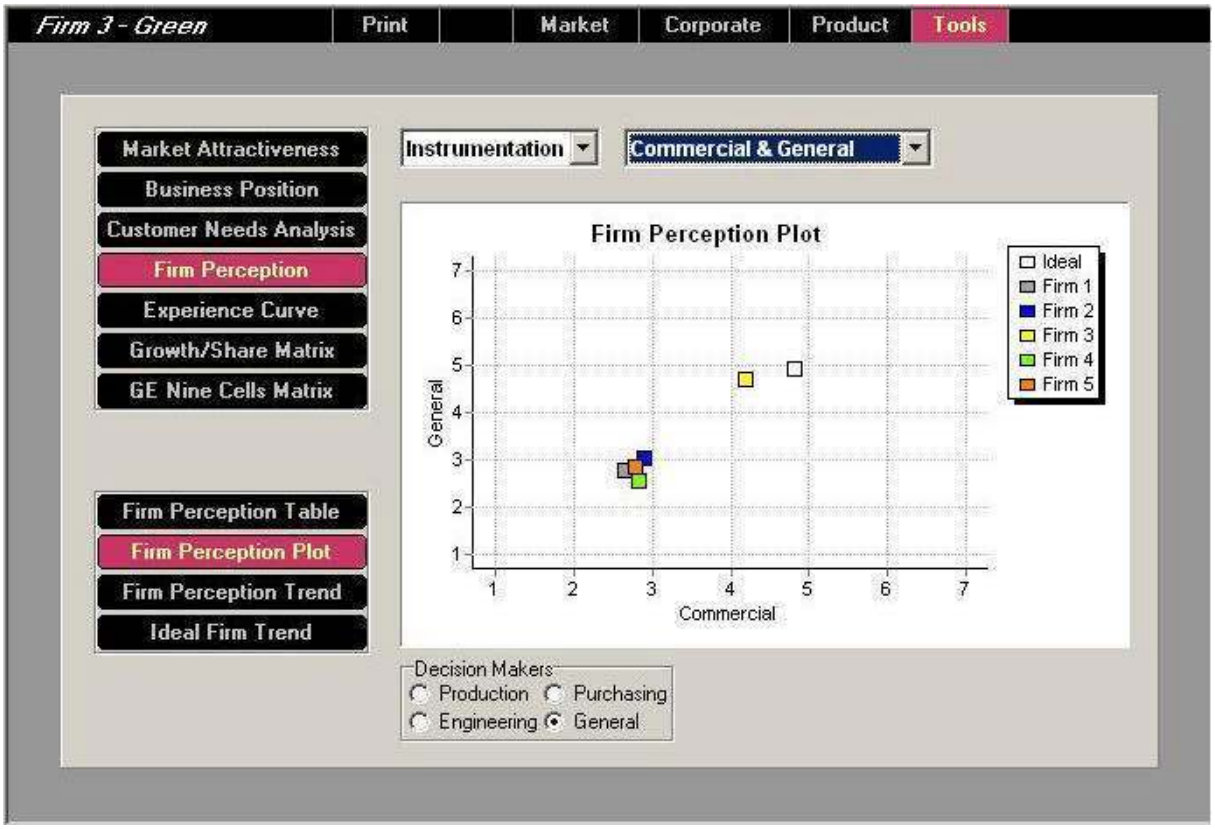



**Figure 6-24 Firm Perception Plot**

### Firm Perception Trend

This option is used to plot any firm's trend over time. The user has the same filters as the above sub-feature, besides choosing a relevant firm from the drop-down box.

The figure below illustrates the trend of Firm 3 following the size segmentation scheme of Large and plotted along Technical and General reputation axes. The decision maker chosen is Engineering Manager.

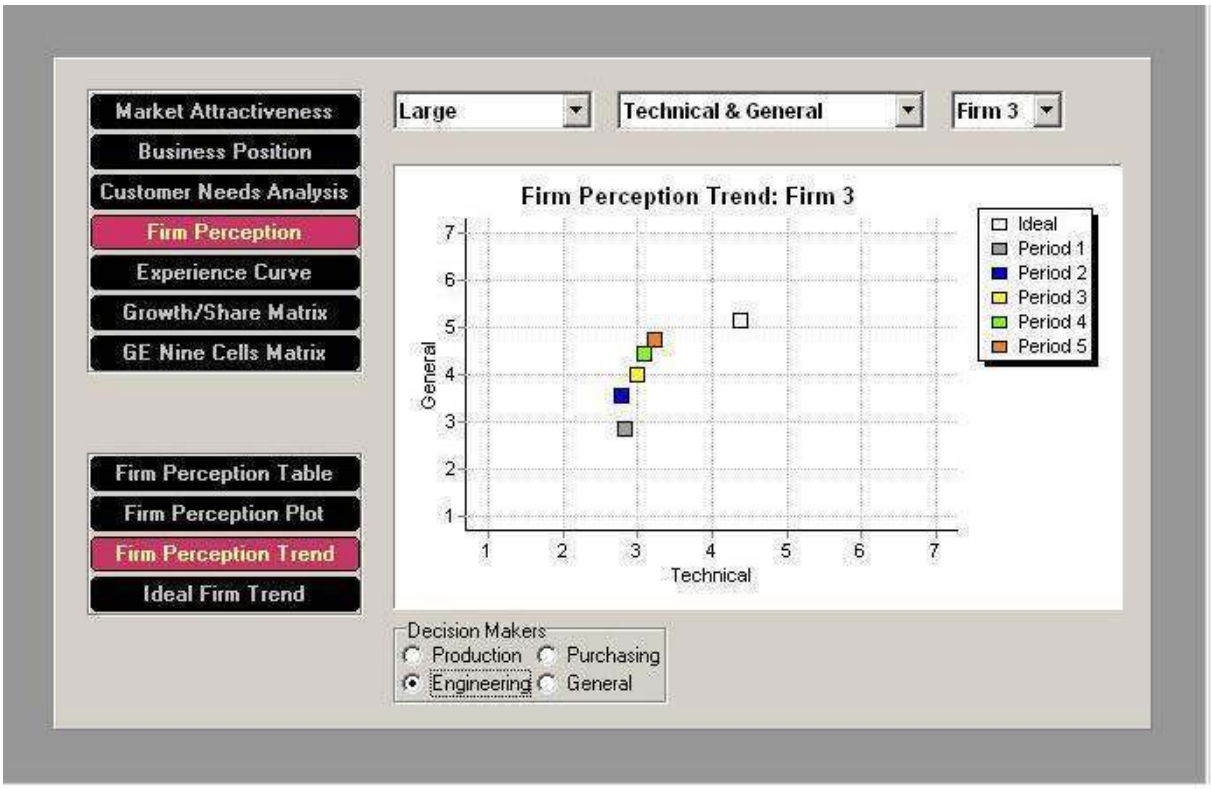



**Figure 6-25 Firm Perception Trend**

### Ideal Firm Trend

This sub-feature enables to plot the ideal firm trend over time. The options available are same as that of the **Firm Perception Plot**.

The example below illustrates the plot of an ideal firm on commercial & general axes, with geographic segmentation scheme: West and the Purchasing Manager as the decision maker.

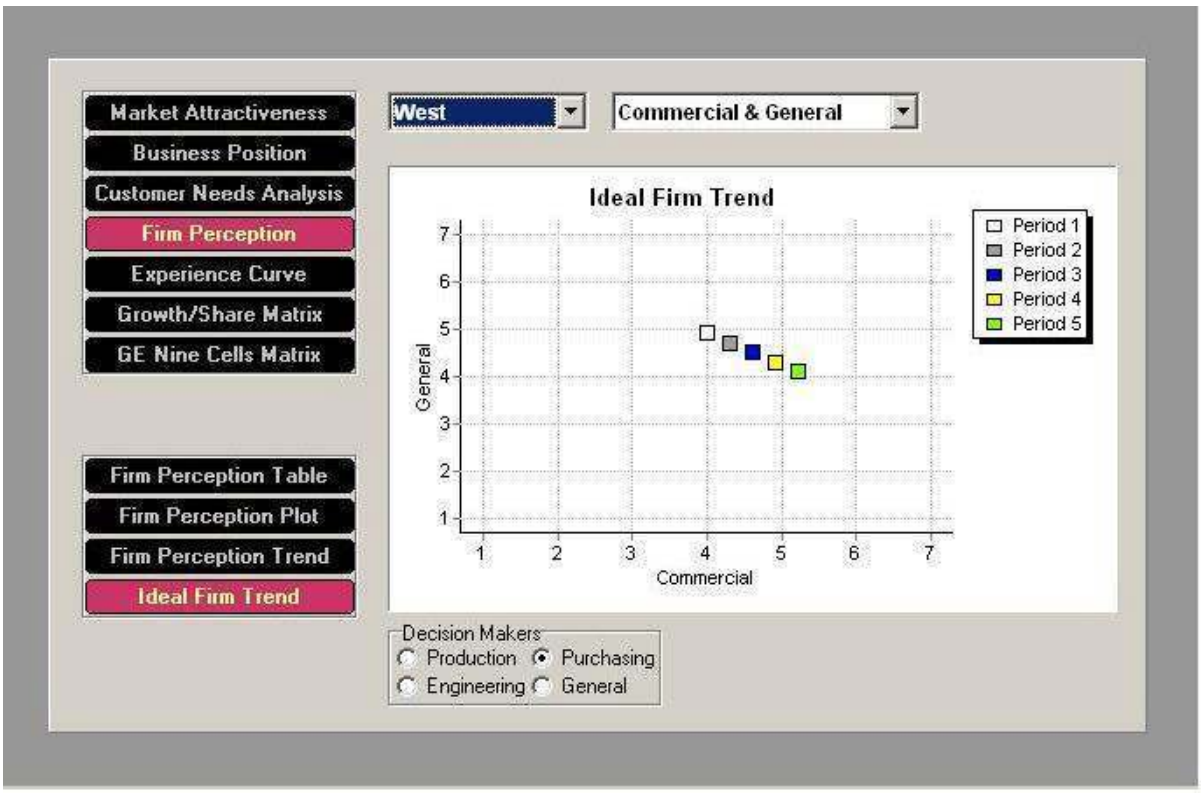



**Figure 6-26 Ideal Firm Trend**

## Experience Curve

This option provides a tool relating to the experience rate of products. A brief summary of the concept of the experience effect is presented in discussion 1 at the end of this section. Basically, this menu choice allows you to graph experience rates and project unit costs at various cumulative production levels. This may be important in estimating a competitor's costs or your own costs under different production scenarios. There is no cost for use of this tool, nor is there any requirement of purchase of marketing research studies. Below is the sample screen

The experience rate is based on cumulative production of a product (based on a particular development project). Costs can be further reduced (to a lesser degree) through cumulative production of all products using the same technology. The feature enables you to extrapolate the curve by specifying the number of periods, percentage reduction of costs and the maximum units produced.

The percentage reduction is the percentage of reduction of costs each time you double the accumulated production. That is, on the X axis, you have the accumulated production up to and including that period and, on the Y axis, the cost per unit. Every time the

accumulated production (the "experience") doubles, the percentage reduction of cost is the same as the last time, i.e., at 10, 20, 40, 80, 160, etc.

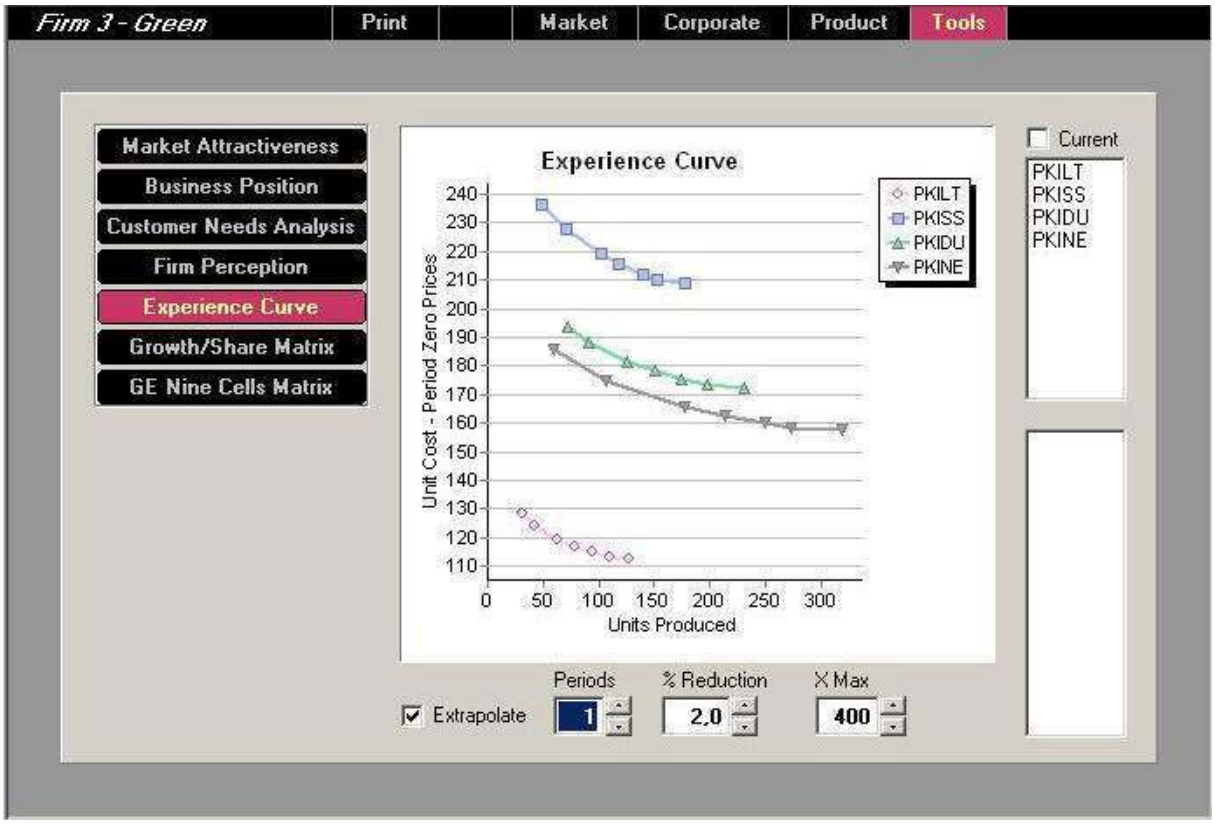



**Figure 6-27 Experience Curve**

## Growth Share Matrix

This menu choice is an implementation of the BCG growth/share matrix for portfolio analysis applied to INDUSTRAT®. For a brief discussion of the BCG matrix, please refer to discussion 2 at the end of this section. Each product is assigned a position in a market growth/relative market share space, where (in general) higher share and growth are indicators of a product's strength. A sample data screen is shown below:

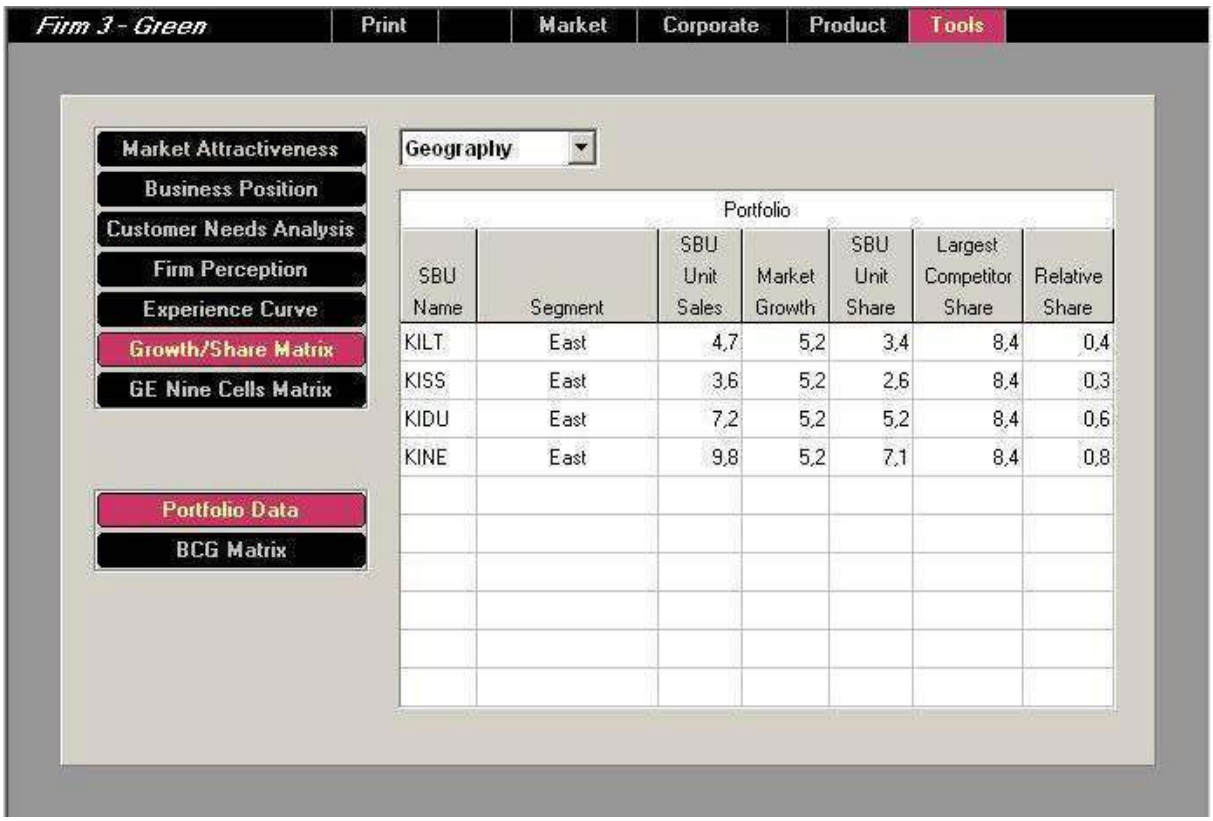



**Figure 6-28 Growth/Share Matrix, Portfolio Data**

In this tool, each product is assigned a "segment" based on where product has highest share. An abbreviation for the segment is placed next to the product name. Thus, in the above example, the player is using a geographical segmentation approach. KIDU was defined as being in the East segment because it had a higher share in that segment than in either central or west. Its product sales overall were 7.2 thousand units and estimated market growth in the industrial segment is 5.2% based on study 9. KIDU's share of the east segment was 5.2% and one of the competitors had the highest share (8.4%). Therefore, the relative share is .6 (.6 = 5.2 divided by 8.4).

The sub-feature in the Growth/Share Matrix: **BCG Matrix** is based on market growth (vertical axis) and relative market share (horizontal axis). The size of the circle is based on product sales to help indicate the relative importance of that product to the overall revenues of the company. Below is a screen using the sample data from above:

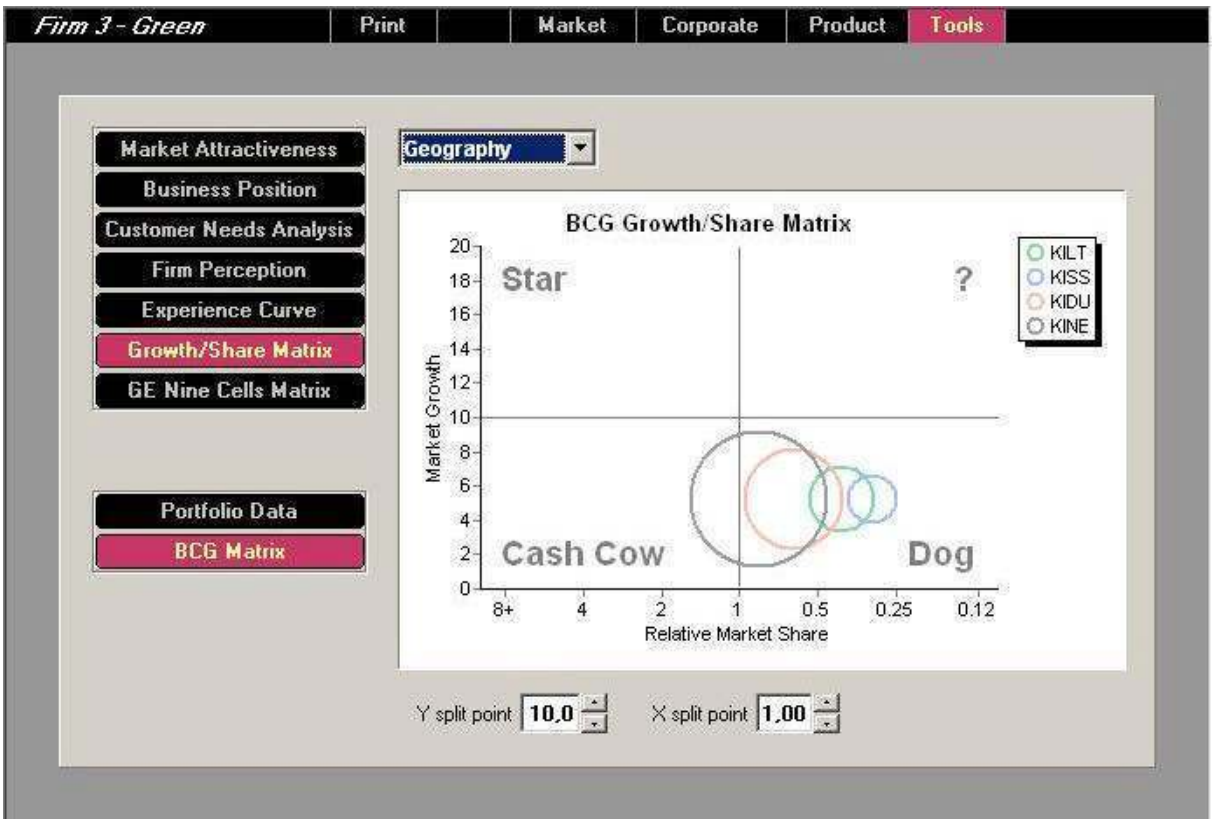



**Figure 6-29 BCG Matrix**

## GE Nine Cell Matrix

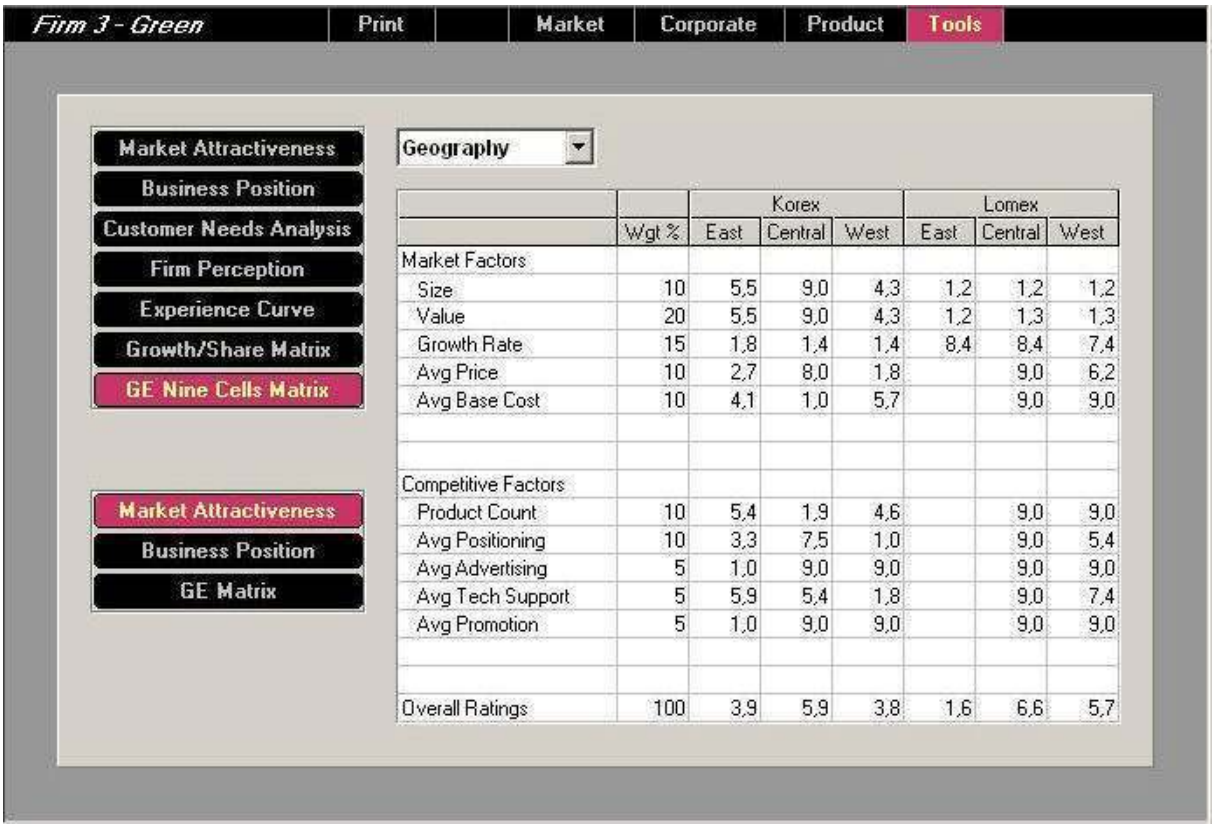
In this feature (under **Tools**), market attractiveness and business position are substituted for market growth and relative share in the BCG model. Rather than limiting a market's attractiveness to one factor such as growth, or competitive position to relative share, this model allows for the combination of many factors on both axes. In the Supplement to Industrat, the factors and calculated values are derived from Market Attractiveness and Business Position discussed earlier in this section.

When you first click on GE Nine Cells Matrix, the screen corresponding to Market Attractiveness appears. You may enter your own ratings for each market and competitive factor or you can select a pre-calculated set of ratings using one of the three segmentation alternatives: through the drop-down box. Normally, you should select the same segmentation scheme you are using for most of your analysis. However, you may want to experiment with alternative approaches. After you select a segmentation approach to use, you will have the option of viewing and/or editing the two ratings screens for industry attractiveness and business position, or viewing the matrix, by clicking on the appropriate choice.

**Market Attractiveness**

For market attractiveness, each market factor is assigned a rating from 1 to 9, where 1 is low (or a negative attribute) and 9 is high (or attractive). Basically, the rating is just a ranking from low to high for all of the eighteen market segmentation alternatives (3 geographic, 3 customer size and 3 end product for Korex and Lomex). Note that the methodology used for determining the ratings forces a balanced spread of products throughout the matrix. This may not be appropriate (i.e. ratings ranges from 1-9, but all segments are actually very attractive). Any of the calculated ratings or weights can be altered. Until Lomex products are introduced in Industrat, the Lomex summary will be blank. The overall rating is then calculated based on the weights and individual ratings. This will provide a useful summary of important market data similar to the screen shown below (shown as Geographic segmentation data in this example):



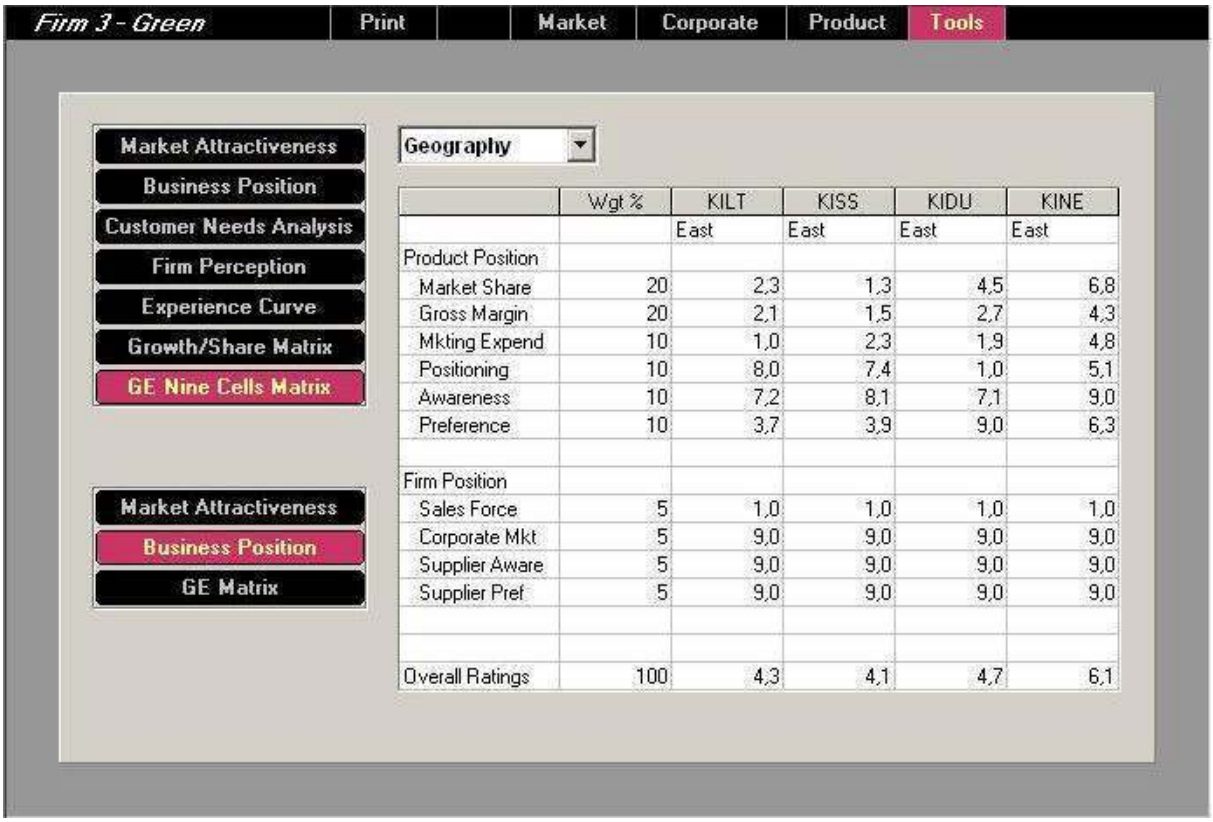

| | | Korex | | | Lomex | | |
|---|---|---|---|---|---|---|---|
| | Wgt % | East | Central | West | East | Central | West |
| Market Factors | | | | | | | |
| Size | 10 | 5,5 | 9,0 | 4,3 | 1,2 | 1,2 | 1,2 |
| Value | 20 | 5,5 | 9,0 | 4,3 | 1,2 | 1,3 | 1,3 |
| Growth Rate | 15 | 1,8 | 1,4 | 1,4 | 8,4 | 8,4 | 7,4 |
| Avg Price | 10 | 2,7 | 8,0 | 1,8 | | 9,0 | 6,2 |
| Avg Base Cost | 10 | 4,1 | 1,0 | 5,7 | | 9,0 | 9,0 |
| | | | | | | | |
| | | | | | | | |
| Competitive Factors | | | | | | | |
| Product Count | 10 | 5,4 | 1,9 | 4,6 | | 9,0 | 9,0 |
| Avg Positioning | 10 | 3,3 | 7,5 | 1,0 | | 9,0 | 5,4 |
| Avg Advertising | 5 | 1,0 | 9,0 | 9,0 | | 9,0 | 9,0 |
| Avg Tech Support | 5 | 5,9 | 5,4 | 1,8 | | 9,0 | 7,4 |
| Avg Promotion | 5 | 1,0 | 9,0 | 9,0 | | 9,0 | 9,0 |
| | | | | | | | |
| | | | | | | | |
| Overall Ratings | 100 | 3,9 | 5,9 | 3,8 | 1,6 | 6,6 | 5,7 |

**Figure 6-30 GE Nine Cells Matrix, Market Attractiveness**

**Business Position**

After clicking on **GE Nine Cells Matrix**, if you select **Business Position**, you will see the ratings screen for business position. Each product is assigned a rating from 1 to 9, where 1 is low (or a weak position) and 9 is high (or a strong position). The rating is just a ranking from low to high for each of the products competing in a segment. You may change the segment assignment for a brand by highlighting the current segment and pressing a letter (a menu will then be activated to allow you to choose a segment). The overall rating is then calculated based on the weights and individual ratings. This will provide a useful summary of product data similar to the screen shown on the following page (again shown as geographic segmentation data in the example:




| | Wgt % | KILT | KISS | KIDU | KINE |
|---|---|---|---|---|---|
| | | East | East | East | East |
| Product Position | | | | | |
| Market Share | 20 | 2,3 | 1,3 | 4,5 | 6,8 |
| Gross Margin | 20 | 2,1 | 1,5 | 2,7 | 4,3 |
| Mkting Expend | 10 | 1,0 | 2,3 | 1,9 | 4,8 |
| Positioning | 10 | 8,0 | 7,4 | 1,0 | 5,1 |
| Awareness | 10 | 7,2 | 8,1 | 7,1 | 9,0 |
| Preference | 10 | 3,7 | 3,9 | 9,0 | 6,3 |
| | | | | | |
| Firm Position | | | | | |
| Sales Force | 5 | 1,0 | 1,0 | 1,0 | 1,0 |
| Corporate Mkt | 5 | 9,0 | 9,0 | 9,0 | 9,0 |
| Supplier Aware | 5 | 9,0 | 9,0 | 9,0 | 9,0 |
| Supplier Pref | 5 | 9,0 | 9,0 | 9,0 | 9,0 |
| | | | | | |
| | | | | | |
| Overall Ratings | 100 | 4,3 | 4,1 | 4,7 | 6,1 |

**Figure 6-31 Business Position**

**GE Matrix**

Once the values of Market Attractiveness and Business Position are assigned, the GE nine cell matrix can be viewed which summarizes the data in a two dimensional space. If products are bunched together, you may want to try a different segmentation approach (or product segment definition) or alter the assigned weights or ratings. Strong products (where you should be concentrating your resources) should be located in the top left corner of the matrix. Weak products (where you may want to consider a harvest/withdrawal strategy) should be located in the bottom right portion of the matrix. For a more in depth discussion of this matrix, please see discussion 3 at the end of this section. An example display is shown below:

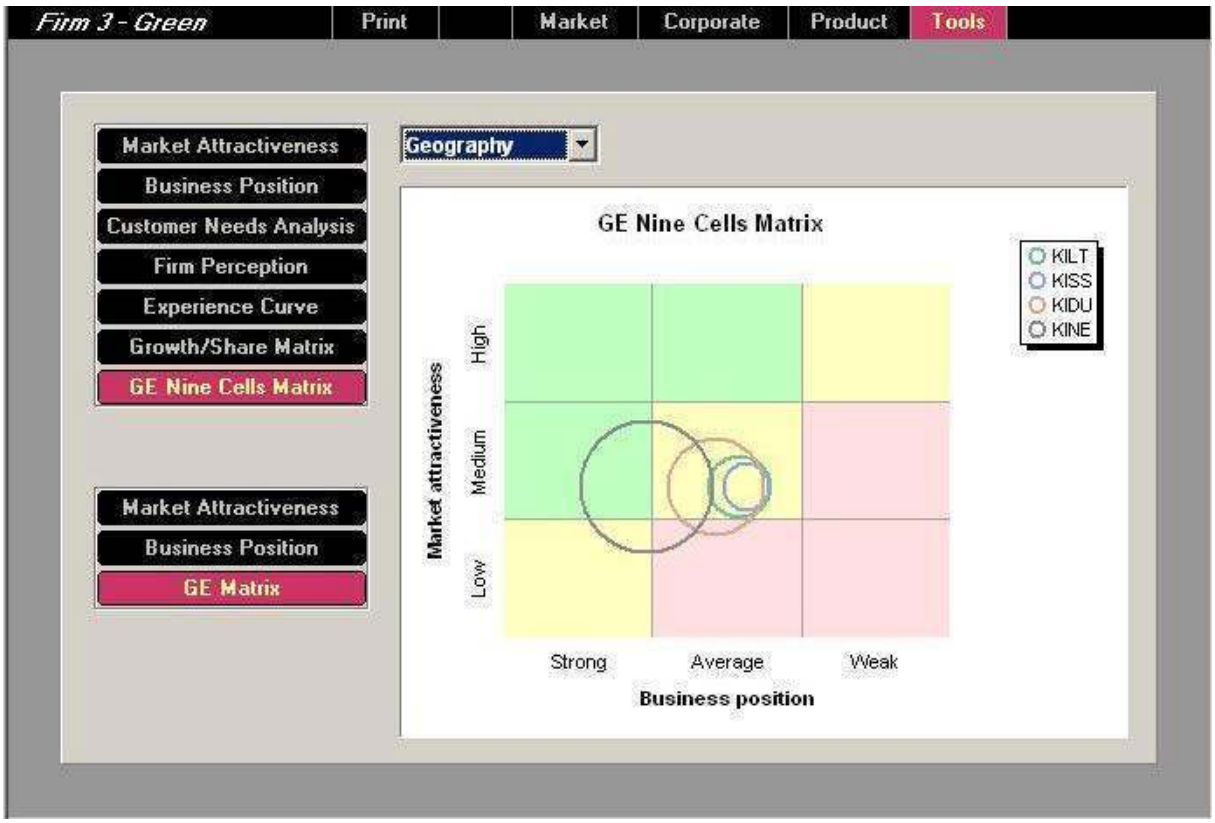



**Figure 6-32 GE Matrix**

**Discussion 1: The Experience Curve**

The phenomenon of the experience curve is well documented in a number of industries. The basic premise is that as cumulative production increases there will be a corresponding decrease in unit cost. The function which is associated with the experience curve states that with each doubling of production, unit costs will decrease by roughly a fixed percentage. Thus, if unit costs at 100,000 units of cumulative production are $100 and the experience curve rate is 80%, unit costs at 200,0000 units would be approximately $80. As cumulative production reaches 400,000 units, costs would decrease to about $64.

There are a number of factors which contribute to the experience curve effect. These include:

- Workforce related factors – such as productivity gains through worker job experience. As workers repeatedly do similar tasks, increases in efficiency often result. Also, workforce organization, employee training, worker effort and management pressure also have a role in reducing costs over time.

- Process modifications – these include improvements in operations or inventory control, reduction of waste and production bottlenecks, and substitution of capital for labor or investment in new equipment.

- Actual changes in production technology which reduce costs.

- Product redesign and materials substitution. By modifying a product's design or components, significant cost savings can be gained through more efficient production processes or lower material costs. Often product performance can also be improved at the same time.

It should also be obvious that the experience curve effect is not automatic. Management and workers must actively seek to find ways to reduce costs.

**Discussion 2: The BCG Growth-Share Matrix**

In the 1960's the Boston Consulting Group (BCG) developed a model based on their analysis of the experience curve that summarized a business' market and competitive position. The matrix is probably the most widely used portfolio model, mainly because it is fairly easy to use. Information regarding market share and growth is gathered on a company's portfolio of strategic business units (SBUs). An SBU is a product or group of products which has a "unique" set of customers and competitors.

The BCG model is based on the premise that growth rate is the best indicator of a market's attractiveness and that relative market share (your share / largest competitor's

share) is the best measure of a firm's strategic position in a market. This is because high relative market share leads to higher cumulative experience which should result in lower costs and higher profits than competitors with lower relative market share. Since both market growth and market share are usually known to a manager, a BCG matrix can be constructed relatively quickly.

The vertical axis represents market growth where the midpoint axis is usually considered to be market growth about equal to the economy as a whole or somewhat higher. Often, companies use 10% as an arbitrary mid-point. The reasons that market growth is used as one of the main axes include:

1. Typically, it is easier to gain share in a high growth market and competitive rivalry is somewhat lower.

2. Higher growth markets are usually less price competitive because demand often exceeds supply.

3. Market growth is often used as an indictor of the stage in the product life cycle. Low growth will often be considered a mature market; negative growth a declining market and so on. The stage of the product life cycle will likely play a role in the manager's decision making process as well. Thus, the BCG matrix can quickly show an overview of where various SBUs stand in their life-cycle.

The horizontal axis of the BCG matrix represents relative market share where the midpoint is 1.0 (where your firm has the same market share as the other leading competitor). Often .75 is used to indicate that a strong secondary position in a market is still considered a "market leader". There are two basic reasons why relative market share was chosen as a main axis:

1. A firm with a relative market share of greater than 1.0 will move down the experience curve at a faster rate than its competitors and thereby gain a long-term cost advantage.

2. A number of studies suggest that long-term profitability is related to market share. The most well know studies are based on the PIMS (Profit Impact of Market Strategy) database which includes 1200 SBUs from over 200 firms.

Each of the four quadrants of the BCG matrix represents a predicated cash flow position. These quadrants have been descriptively labeled with the names: stars, question marks, dogs, and cash cows. Each SBU is then placed in the matrix according to its relative market share and market growth rate. Typically, the SBU is designated by a circle which corresponds to the relative size of sales. Thus, the SBUs with the highest sales are labeled with the largest circles.

Cash Cows (the lower left) are SBUs in low growth or mature markets with high share. Typically, they have a low cost position due to the experience effect which allows them to generate significant cash flow for the organization. Sales volume is usually near its peak as well. Since the market is mature, cash investment needs are usually significantly lower and thus have a positive net cash flow. These funds should be used to move question marks to stars or improve the competitive position of existing stars.

Stars (the upper left) are SBUs in high growth markets with high share. These SBUs are expected to use a significant amount of funds to maintain share in a high growth market. However, they should also provide large cash flows. In general, stars are usually close to self-supporting. It is important that cash flow is not siphoned from these SBUs sacrificing their long-term position. As market growth slows entering the mature phase, these stars should become cash cows. Thus, every attempt should be made to maintain or increase market share for stars for these are the SBUs which are essential to the long-term success of your company.

Question Marks (the upper right) are SBUs in high growth markets with lower share. These SBUs typically use large amounts of cash to fund their growth, but generate little cash because of their poor market position. Unless their market position is improved, they will likely end up as dogs when the market matures. Some question markets can be converted to starts depending on the market and competitive situation. Increasing market share in a growing market will, however, require large amounts of cash.

Dogs (the lower right) are SBUs in low growth markets with low share. Cash flow for these SBUs are typically low or even negative. Because market growth is low, it is expected that it will take significant resources to change their competitive position. Unfortunately for most companies, dogs usually outnumber any other SBU classification. In some cases, dogs can become profitable by using a niche strategy and attempting to dominate a particular sub-segment of a market. This, in effect, redefines their market to where they have an improved competitive position. The other options for dogs include implementing a harvest strategy for these businesses to generate cash, or selling the businesses.

When considering options for dogs, one should be careful to avoid poorly designed turn-around plans which often waste cash better invested in SBUs with greater potential. Another issue to consider is how a dog may impact other SBUs. For instance, a dog may in fact make many hidden contributions to overall success such as helping to cover corporate overhead or supporting expensive technology development. Do not forget to consider these in your strategy formulation.

**Assumption of the BCG matrix**

Although there are a number of issues which make over-reliance on the BCG matrix dangerous, there are two assumptions which should be restated because of their importance to portfolio analysis and competitive theory in general. First, since the basis of competitive advantage through dominant market share is based on achieving a low

cost position through the experience curve (i.e. that an SBU will build a cost advantage over time with higher cumulative production than its competitors), it is essential that the experience curve is present in the industry and firm. One must also take into consideration other cost advantages a firm or competitor might possess which would lessen or negate the advantage due to the experience curve.

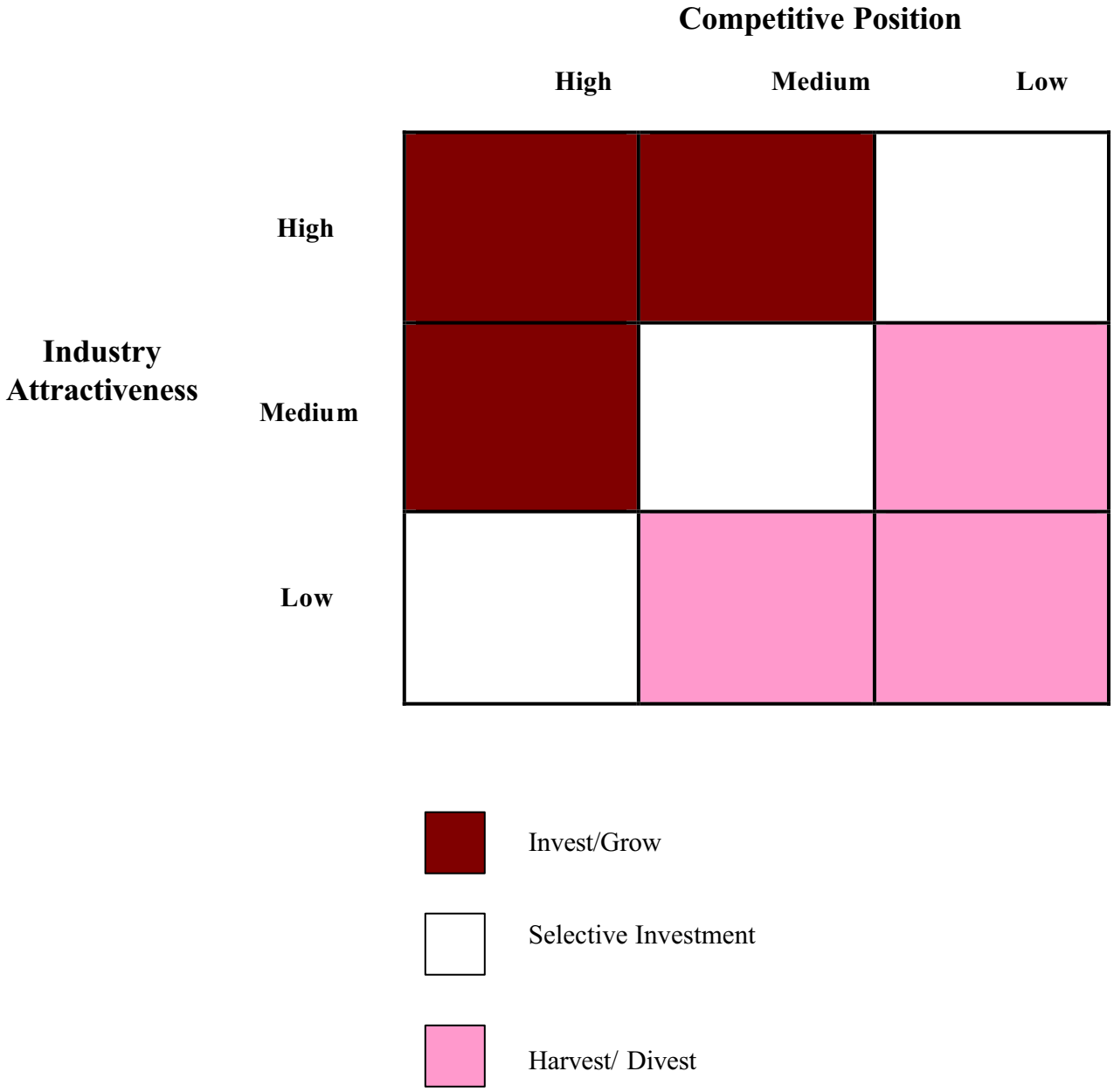
The second basic assumption regards the definition of product/markets (and therefore, share of those markets). Often, it is possible to define a market so narrowly that your firm will have the dominant share. For instance, a local manufacturer might have 30% of a regional market. However, when viewed on a national basis, the manufacturer might have only 3% of the total market for that good. This phenomenon, in fact, may be a problem for many American companies which are not yet considering their market on a global basis. Their market position depends a great deal on whether regional boundaries also truly define product/market or competitive boundaries. To some degree, differences in cultures, languages, government policies and costs may separate markets however, one must be careful not to ignore possible competitive entry from these foreign firms.

If a market definition is too broad, you are likely to gloss over meaningful differences in customer needs or competitive intentions. If the definition is too narrow, your competitive position is likely to be overstated. The basic rule is that a market definition should be meaningful and present substantial competitive differences from related markets. If these differences do not exist, the relative market share measurement is an essentially misleading indicator of strategic position.

**The GE Nine Cell Matrix**

General Electric, with help from McKinsey & Company, developed a new matrix approach designed to overcome some of the weaknesses of the BCG model. In this matrix, product-market attractiveness and business strength/competitive position are substituted for market growth and relative share in the BCG model. Rather than limiting a market's attractiveness to one factor such as growth, or competitive position to relative share, this model allows for the combination of many factors on both axes. This model is based on the more generalized SWOT (Strengths/Weaknesses and Opportunities/Threats) analyses where strengths and weaknesses make up competitive position while opportunities and threats determine industry attractiveness. The trade-off of this model is that many of these measures are more subjective and that the model is not as easy to implement quickly. The basic GE nine cell matrix is displayed below:



Each business is now evaluated on competitive position and long-term industry attractiveness. Some factors which could be used are suggested below:

| Competitive Position | Market Attractiveness |
|---|---|
| Relative market share | Growth rate |
| Competitive strengths and weaknesses | Profit margins |
| Market experience | Competitive rivalry |
| Management skill | Market size |
| Technological advantages | Emerging opportunities/threats |
| Distribution channels | Government/environmental issues |
| Customer base | Capital requirements |

In your evaluation process, you may choose to include other factors or to ignore some of those listed above. The method of combining these factors should depend upon the situation for the SBU you are currently assessing.

Once each SBU is plotted on the matrix, an analysis of investment alternatives should be made. Some of the usual alternatives include:

| | |
|---|---|
| Invest | This may be to gain share or stop market share erosion. Typically, an increase in investment should only be made to businesses which have a strong competitive position and are in an attractive industry. These are in the upper left corner of the matrix and should be considered strategic priorities. |
| Selective | Selective investment is made to businesses which fall in the middle zone of the matrix. These are businesses where competitive position and industry attractiveness are both average, or one dimension is weak and the other strong. Often the appropriate investment level for these businesses is enough to hold/maintain current market position. |
| Withdraw | These are low investment priorities and located in the lower right corner of the matrix. Alternatives to pursue here are milking the business (attempting to general cash with little investment) or selling the business. |

One weakness of both the BCG and GE portfolio models is that neither addresses the need for new business investment. These models both analyze investment options within a current portfolio only. Therefore, one of the additional allocations of capital for either model should be in the new product/research area. It is essential that new SBUs (typically in high growth markets) are added to the portfolio along the way. Often these

start as question marks in the BCG matrix. As time goes on, some of these new business opportunities may ultimately become stars through the use of appropriate strategic policies. Again, though, the key is achieving a reasonable balance within your portfolio.

Overall, portfolio analysis can add an important dimension to your strategic planning process. First, it can help companies better understand the dynamics shaping their businesses. Second, these models can offer some direction for investment priorities and the cash flow needs of various businesses. The BCG growth/share matrix is an easy to implement cash flow based model while the GE business matrix adds the richness of multiple dimensions to determine appropriate business strategy. These portfolio models can be further aided by using the cash sources/uses matrix which will highlight other issues such as margins and current expenditures. One should be careful not to rely solely on the outcomes from these models, but instead use them as a method of addressing portfolio goals and objectives to gain insights into the competitive position of a business.

# Decision Support System : Market, Corporate and Product Menus

These menu choices contain a number of options which allow you to view Industrat data on a historical basis. The **Market** menu option summarizes overall market trends. The **Corporate** menu option compares data on a firm level (1-5). The **Product** menu allows you to view information at the product level. For most of these options, you also have the ability to view the data on a segmented basis.

The following is a brief description of the various options present under the Market, Product and Corporate menus. Some data is presented in stacked bar graph form, while other data is shown as line graphs. Normally, data which is presented in stacked bar graph form may have some extra value when combined to show aggregate numbers.

## Market Menu Options

In the options below, the data can be filtered with respect to the Markets and segmentation schemes. (through the drop-down menu)

### Dollar sales

View a bar graph of either Korex or Lomex overall dollar sales (value). You must order market research study 4 for Korex and/or study 11 for Lomex. This is available on a segmented basis if the market research study was ordered segmented.

### Unit sales

View a bar graph of either Korex or Lomex overall unit sales. You must order market research study 4 for Korex and/or study 11 for Lomex. This is available on a segmented basis if the market research study was ordered segmented.

### Buying processes

Generates a line graph of the relative weights of different decision markers for either the Korex or Lomex market. You must order market research study 6 for Korex and/or study 13 for Lomex. This data is available segmented if the market research study was ordered on a segmented basis.

## Corporate Menu Options

### Sales Force

View a stacked bar graph of the number of salesperson for each firm. This is not broken down by the Korex and Lomex markets because sales people cover both product lines. You must order market research study 16 to be able to view this option. This is not available on a segmented basis.

**Sales Force Training**

Generates a line graph of the amount spent on training the sales force for each firm. This is not broken down by Korex and Lomex markets because sales people cover both product lines. You must order market research study 16 to be able to view this option. This is not available on a segmented basis.

**Technical Support**

View a stacked bar graph of the number of technicians for each firm. This is not broken down by the Korex and Lomex markets. You must order market research study 16 to be able to view this option. This is not available on a segmented basis.

**Tech Support Training**

Generates a line graph of the amount spent on training the technical force for each firm. This is not broken down by Korex and Lomex markets because sales people cover both product lines. You must order market research study 16 to be able to view this option. This is not available on a segmented basis.

**Corporate Marketing**

Generates a line graph of corporate marketing expenditures for each firm. This is not broken down by the Korex and Lomex markets. You must order market research study 16 to be able to view this option. This is not available on a segmented basis.

**Awareness**

Displays a line graph of supplier awareness for each firm. This is not broken down by the Korex and Lomex markets. You must order market research study 1 to be able to view this option. This data is available by segment if the market research study was ordered on a segmented basis.

**Preference**

Displays a line graph of supplier preference for each firm. This is not broken down by the Korex and Lomex markets. You must order market research study 1 to be able to view this option. This data is available by segment if the market research study was ordered on a segmented basis.

**Total Firm Sales**

Displays a line graph of combined Korex and Lomex dollar sales for each firm. This data is from the newsletter, so this will be available every period. This is not available on a segmented basis.

### Segmented Firm Sales

Displays a line graph of firm's sales in either the Korex or Lomex markets. You must order market research studies 4 and 5 for Korex and/or studies 11 and 12 for Lomex. This data is available by segment if the market research study was ordered on a segmented basis.

### Unit Share

Displays a line graph of each firm's share in either the Korex or Lomex markets. You must order market research studies 4 and 5 for Korex and/or studies 11 and 12 for Lomex. This data is available by segment if the market research study was ordered on a segmented basis.

### Net Marketing Contribution

Displays a line graph of your firm's net marketing contribution based on the company report.

## Product Menu Options

### Value Market Share

Displays a stacked bar graph of up to 10 products' overall market share on a dollar basis (primary & supplementary combined) in either the Korex or Lomex markets. You must order market research study 5 for Korex and/or study 12 for Lomex to view on a segmented basis. Aggregate data is available through the newsletter.

### Unit Market Share

Displays a stacked bar graph of up to 10 products' overall market share (primary & supplementary combined) in either the Korex or Lomex markets. You must order market research study 5 for Korex and/or study 12 for Lomex to view on a segmented basis. Aggregate data is available through the newsletter.

### Primary Unit Share

Displays a stacked bar graph of up to 10 products' primary market share in either the Korex or Lomex markets. You must order market research study 5 for Korex and/or study 12 for Lomex. This data is available by segment if the market research study was ordered on a segmented basis.

**Supplementary Unit Share**

Displays a stacked bar graph of up to 10 products' primary market share in either Korex or Lomex markets. You must order market research study 5 for Korex and/or study 12 for Lomex. This data is available by segment if the market research study was ordered on a segmented basis.

**Share of Tests**

Displays a stacked bar graph of up to 10 products' share of tests for either Korex or Lomex markets. You must order market research study 5 for Korex and/or study 12 for Lomex. This data is available by segment if the market research study was ordered on a segmented basis.

**Awareness**

Generates a line graph of up to 6 products' awareness in either the Korex or Lomex markets. You must order market research study 3 for Korex and/or study 10 for Lomex. This data is available by segment if the market research study was ordered on a segmented basis.

**Preference**

Generates a line graph of up to 6 products' preference in either the Korex or Lomex markets. You must order market research study 3 for Korex and/or study 10 for Lomex. This data is available by segment if the market research study was ordered on a segmented basis.

**Actual Selling Price**

Generates a line graph of up to 6 products' actual selling prices in either the Korex or Lomex markets. This data is from the newsletter, so this will be available every period. This graph is not available on a segmented basis.

**Price Discount**

Generates a line graph of up to 6 products' maximum price discount in either the Korex or Lomex markets. You must order market research study 16 to be able to view this option. This graph is not available on a segmented basis.

**Promotion**

Generates a line graph of up to 6 products' promotional spending in either the Korex or Lomex markets. You must order market research study 16 to be able to view this option. This graph is not available on a segmented basis.

**Commission**

Generates a line graph of up to 6 products' commission schedule in either the Korex or Lomex markets. You must order market research study 16 to be able to view this option. This graph is not available on a segmented basis.

**Technical Support**

Generates a line graph of up to 6 products' technical support expenditures in either Korex or Lomex markets. You must order market research study 16 to be able to view this option. This graph is not available on a segmented basis.

**Advertising**

Generates a line graph of up to 6 products' advertising expenditures in either the Korex or Lomex markets. You must order market research study 16 to be able to view this option. This graph is not available on a segmented basis.

**Gross Contribution**

Generates a line graph of the gross marketing contribution of your products based on your company report.

# Chapter 7

# Some Suggestions Before You Start

Having read the INDUSTRAT manual, you have completed the initial preparation for the simulation. Managing an INDUSTRAT firm in competition with other teams is a challenging exercise, requiring familiarity with the administrative aspects of the simulation. The sooner the practical part of the simulation is understood, the earlier you can concentrate on the strategic issues (see Figure 7-1). This last section attempts to answer several questions, which, in the authors' experience, teams may have at this point. These questions are (1) How do we handle the first decision? (2) How should our team be organized? (3) What is the best strategy? (4) What is the role of simulation administrator? and (5) How do we get the most out of this exercise?

## YOUR FIRST DECISION

The simulation will start after your INDUSTRAT administrator has assigned you to your team and given out the first company report. You will learn that your firm is currently offering four products on the market, as are the four other competitors. Your initial report does not include any market research studies, since your predecessor did not order any. However, you may order studies for the next year, which, after analysis, will help to clarify the relative strengths and weaknesses of your firm.

For the first three years, it is recommended that the choice of organizational and macrosegmentation scheme follow the structure of your sales force for the previous year. This structure presumably follows a past macrosegmentation decision made by your predecessors. Because the volume of the market research information in this simulation is potentially enormous, your team should avoid buying too much information in the early stages of the simulation.

You should be conservative in your initial moves and not take any significant risks until more market intelligence is available. For example, you should not undertake any R&D projects designed to change your products' physical characteristics, or introduce new ones, until you are aware of the needs of the market and the way in which they evolve. Similarly, for lack of information, you should not yet attempt to reorganize the sales and technical forces.


**Figure 7-1** INDUSTRAT features

Your firm will not be able to introduce products with new physical characteristics until the necessary R&D is successfully completed. You should spend most of the time allotted for the first decision analyzing the way your predecessors allocated their resources. It is suggested that you formulate specific hypotheses on why they wanted to do it that way and test hypotheses through market research studies. These will be available when the next company report is handed to your team. Blank forms for the entry of your group's annual decisions, as well as for the internal budgeting and planning, are provided in Appendix C.

## TEAM ORGANIZATION

As in any complex business situation, the question of organization will soon arise. You should keep in mind that, as a participant of INDUSTRAT, you have two major objectives. On the one hand, you are a member of a team under time pressure in an increasingly complex competitive situation. In this role you will want your team to perform better than the competition, and that may require a certain division of tasks and responsibilities as the simulation grows more complex. On the other hand, as an individual you are participating in an educational exercise. In this context your personal objective is to learn as much as possible, which implies exposure to the different aspects of INDUSTRAT. While it is up to each group to organize itself in the way it sees fit, you will find that INDUSTRAT is designed to expose you to most aspects early on.

The outset of the INDUSTRAT competitive structure is designed to make your introduction to the simulation as smooth as possible. With only four Korex products offered, each team member will quickly contribute his or her initial observations, based on the information in this manual and the first company report. In the authors' experience, the variety of personal backgrounds represented in the team leads to diversity in perception and will result in trading of information. As the simulation evolves and becomes more complex, each member of the team will be naturally inclined to make different contributions. Some groups will then formalize the different tasks of their members, whereas others will elect to continue the informal working environment.

**NO OPTIMAL STRATEGY**

In INDUSTRAT, as in many other business situations, the evolution of the market is subject to external and internal developments. While external forces are beyond the firms' control, strategic choices made by the INDUSTRAT firms will determine, to a large extent, the fate of the industry. It would be a mistake to try and guess what the single best strategy is, for the simple reason that there is no such strategy. The INDUSTRAT simulation is realistic in the sense that creativity may yield various successful strategies for a given competitive scenario. Moreover, certain strategies in one running of the simulation may well bring about quite different results in another, as the choices that competitors make rarely coincide.

Nevertheless, success in INDUSTRAT, as in other business situations, is not a result of random choice. Rigorous analysis, planning, and calculated risk taking will increase the likelihood of a good strategic choice. That, coupled with team spirit, will make the exercise more rewarding.

**THE INDUSTRAT ADMINISTRATOR**

The INDUSTRAT administrator does not manipulate the simulation during its running. Since there will be no intervention for or against any of the firms, your team will take sole responsibility for its performance. The administrator fills many roles during the simulation. He or she will act as instructor, corporate chief executive officer, market research supplier, banker, and manager of an export firm to whom your team can sell liquidated inventory. The administrator will also act as a superior authority, such as arbitrator, or government official, for cases of industrial espionage, collusion, or any other practices which in his or her opinion may be unethical or hamper competition.

The INDUSTRAT administrator must follow a tight timetable and supervise adherence to the time schedules by all groups. In order to facilitate this, the administrator may impose fines for late submission of forms. The fine system will be announced at the outset of the simulation. However, generally the game administrator will be reasonable, resourceful and ready to listen to well-documented reasoning in eventual negotiations.

## GETTING THE MOST OUT OF THE INDUSTRAT SIMULATION

Here are several points of advice which will help to make the INDUSTRAT experience more valuable and enjoyable. INDUSTRAT is a strategic game, and as such, most of the analyses and discussions should be devoted to strategic issues. The short term aspects of INDUSTRAT are simplified to provide a strategic focus. Many are either performed automatically within the simulation or are not intended for your consideration.

The INDUSTRAT environment is quite complex, requiring caution before decisions are taken. As many factors operate simultaneously in the market, the explanations for certain events will require considerable research and discussions. What may be considered obvious at first glance may, in fact, appear quite differently following an in-depth analysis.

An abundant amount of information is available in this simulation. Its digestion could prove time consuming, and so, one must be selective in the way time is spent. It is possible to order all the annual research studies, but to digest them would take time. Each team will have to decide on the amount of information necessary to perform an analysis and still leave time for reasoned and steady decision making. One may want to postpone certain analyses and discussions until long term planning and staff work can be performed under less pressure. Similarly, when in a decision session, one should avoid lingering on minor issues at the expense of the major ones.

Administrative errors may occur due to incorrect completion of the forms or over a misunderstanding of certain rules. The INDUSTRAT administrator will make every effort to help avoid such errors. It is the team's responsibility to conform to the rules of the simulation. If in doubt, the team should refer to the administrator for assistance. A useful practice for every team is to appoint one member to be responsible for completing the various forms and to serve as liaison between the group and the administrator throughout the simulation.

## A FINAL WORD

You are entering a simulation that provides a lot of information and opportunity for analysis. You will soon find that the wealth of information, while reducing uncertainty, will not replace judgment, intuition, and risk-taking ability. The INDUSTRAT information system will help formulate alternative courses of action, but in the final analysis the choice is yours. You will find that the simulation may either be smooth or a rough experience, depending on the competitive circumstances. The dynamics of your team will play a major factor in the way your firm overcomes the challenges that await you.

The competitive setting necessarily implies that some firms will perform better than others. At the start of the INDUSTRAT simulation the stance of each of the five firms includes certain inherent competitive strengths and weaknesses. You should expect your firm's initial performance to be the result of this profile. However, the structure of the

market may drastically change as a result of the firms' analysis, strategies, and quality of execution. Finally, as one would expect in an industrial environment, a certain element of random luck, in terms of creative ideas and timing of actions, may intervene.

The primary objective of INDUSTRAT is the acquisition of strategic industrial marketing skills. A competitive performance short of your expectations should not diminish your interest and enjoyment of this simulation. Past experience shows that lessons learned by confronting difficult situations are frequently of greater educational value than easy victories. The creators of INDUSTRAT would accordingly like to wish you a challenging experience.

# GLOSSARY

## Index of Rules and Constraints

**Account size:** small, medium, and large.

**Adoption process:** awareness, testing, supplementary, and major supplier.

**Application:** instrumentation, communication, and consumer products.

**Base cost:** estimated cost per unit at 100,000 units of experience.

**Budget:** maximum authorized expenditure managed by marketing.

**DMU:** decision making unit (see *Microsegmentation*).

**Experience:** cumulative production of products within the same technology.

**Firms:** five firms.

**GNP:** last three years (-2, -1, 0) 3 percent.

**Geography:** central, east, and west.

**Growth:** Korex sales grew 40 percent in year -6, but have slowed down.

**Inflation:** 10 percent at year 0 (15 percent in year -5).

**Inventory:** holding cost at LIFO value, charged to annual contribution.

**Korex:** product has been on the market for 15 years at year 0.

**Licensing:** when one firm's product uses another firm's development project (see *Royalties*).

**List price change:** maximum annual variation accepted is 30 percent.

**Macrosegmentation:** by geography, account size (potential), and application.

**Market research:** 16 studies available for sale annually (see Exhibit 4-1).

**Microsegmentation:** production, engineering, purchasing, and general managers.

**Minimum base cost:** lower limit for a given R&D department and given specifications.

**Monetary unit:** IM, $.

**Obsolete inventory:** When a successful development project (for change in product specifications or base costs) is actually used, the remaining inventory is automatically obsolete, and automatically charged to contribution at LIFO unless another arrangement is made with the INDUSTRAT administrator.

**Period:** each represents one year.

**Physical characteristics:** For Korex at Year 0, see Exhibit 2-1. For Lomex see Exhibit 2-2.

**Population:** 250 million.

**Price discount:** maximum authorized to the sales force is 10 percent.

**Production:** automatic upward or downward adjustment of up to 20 percent of plan.

**Products:** each firm may sell up to 10 products and starts with four.

**Project name:** defines a single set of physical characteristics, which remain identical until completion. Only base costs may be changed. Any change in one of the four physical characteristics will be ignored.

**Royalties:** automatic 3 percent of sales at list price. Minimum annual royalty lump sum payment is negotiable (see *Licensing*).

**Sales commission:** Maximum authorized to award the sales force is 20 percent.

**Sales Organization:** May be organized along the geographic, size, or application segmentation schemes.

**Technology:** five for Korex (see Exhibit 5-1) and one for Lomex.

**appendix A**

# Sample Company Report

The following represents the sample company report of Firm 3 in Period 5 of an INDUSTRAT simulation. This is only an example, and the data it contains should not be used in making your decisions



**Company Report**
**Firm 2 *Blue* Industry *GREEN* Period 5**

**Firm 2 *Blue* Industry *GREEN* Period 5**


## 1. Financial Results

**(in $'000 unless otherwise indicated)**

| Product Name | | KENT | KEPI | KEEP | KELY | KEAA |
|---|---|---|---|---|---|---|
| Units Produced | '000 | 21.6 | 28.8 | 28.0 | 22.4 | 30.0 |
| Units Sold | '000 | 16.1 | 25.5 | 23.5 | 17.6 | 30.0 |
| Units Left in Inventory | '000 | 5.5 | 3.3 | 4.5 | 4.8 | 0.0 |
| List Price | $ | 700 | 550 | 600 | 640 | 450 |
| Average Price | $ | 678 | 533 | 581 | 614 | 434 |
| Maximum Price Discount | % | 3 | 3 | 3 | 4 | 5 |
| Unit Manufacturing Cost | $ | 321 | 376 | 400 | 300 | 344 |
| Unit Licensing Royalty | % | 0 | 0 | 0 | 0 | 0 |
| Unit Commission | % | 4 | 4 | 5 | 4 | 5 |
| Total Unit Cost | $ | 348 | 397 | 429 | 324 | 366 |
| Revenues From Sales | | 10913 | 13579 | 13661 | 10811 | 13040 |
| Manufacturing Costs | | 5159 | 9587 | 9392 | 5283 | 10335 |
| Licensing Costs | | 0 | 0 | 0 | 0 | 0 |
| Sales Commissions | | 436 | 543 | 683 | 432 | 652 |
| Promotion | | 150 | 100 | 200 | 120 | 250 |
| Product Advertising | | 40 | 30 | 40 | 40 | 54 |
| Technical Support | | 168 | 168 | 224 | 168 | 168 |
| Inventory Hold Costs | | 283 | 201 | 289 | 230 | 0 |
| **Gross Product Contribution** | | **4674** | **2949** | **2830** | **4536** | **1579** |

**Firm 2 *Blue* Industry *GREEN* Period 5**
Use of INDUSTRAT is granted to *Prof David Weinstein* at *Test* until *2009-09-01*. **Other use is unlawful.**

## 1. Financial Results

**(in $'000 unless otherwise indicated)**

| Product Name | | LEAA | KEOO |
|---|---|---|---|
| Units Produced | '000 | 22.4 | 12.0 |
| Units Sold | '000 | 16.2 | 12.0 |
| Units Left in Inventory | '000 | 6.2 | 0.0 |
| List Price | $ | 299 | 500 |
| Average Price | $ | 281 | 477 |
| Maximum Price Discount | % | 6 | 6 |
| Unit Manufacturing Cost | $ | 87 | 258 |
| Unit Licensing Royalty | % | 0 | 0 |
| Unit Commission | % | 6 | 6 |
| Total Unit Cost | $ | 104 | 287 |
| Revenues From Sales | | 4549 | 5717 |
| Manufacturing Costs | | 1416 | 3094 |
| Licensing Costs | | 0 | 0 |
| Sales Commissions | | 272 | 343 |
| Promotion | | 300 | 400 |
| Product Advertising | | 100 | 150 |
| Technical Support | | 112 | 112 |
| Inventory Hold Costs | | 87 | 0 |
| **Gross Product Contribution** | | **2260** | **1616** |

## Global Results

| | | |
|---|---|---|
| **Total Gross Product Contribution** | | **20448** |
| Fixed Costs: | | |
| Sales Force | 3965 | |
| Sales Force Training | 110 | |
| Corporate Communications | 53 | |
| Research | 0 | |
| Development | 610 | |
| Market Research | 741 | **5479** |
| **Operational Marketing Contribution** | | **14968** |

| | |
|---|---|
| **Other Cash Operations** | |
| Licensing Fees | 0 |
| Loan | 300 |
| Loan Repayments | -788 |
| Obsolete Inventory Liquidation | 0 |
| Funds Transfer | - 2590 |
| Other Funds Transfer | 0 |
| **Net Marketing Contribution** | **11890** |

| | | |
|---|---|---|
| **Budget For Next Period** | **($'000)** | **7772** |

## 2. Marketing Results

**(In %)**

| Product Name | KENT | KEPI | KEEP | KELY | KEAA |
|---|---|---|---|---|---|
| Share of Clients Testing | 1.6 | 2.5 | 2.3 | 1.7 | 3.0 |
| Share of Clients Using as Supplementary Source | 5.8 | 9.2 | 8.5 | 6.2 | 8.3 |
| Share of Clients Using as Primary Source | 2.5 | 4.0 | 3.7 | 2.7 | 4.6 |
| Unit Market Share of Supplementary Sourcing | 2.7 | 4.3 | 3.9 | 3.0 | 4.1 |
| Unit Market Share of Primary Sourcing | 2.7 | 4.3 | 3.9 | 2.9 | 5.4 |
| Total Unit Market Share | 2.7 | 4.3 | 3.9 | 3.0 | 5.0 |
| $ Market Share of Supplementary Sourcing | 3.6 | 4.5 | 4.6 | 3.6 | 3.6 |
| $ Market Share of Primary Sourcing | 3.6 | 4.5 | 4.5 | 3.6 | 4.6 |
| **Total Market $ Share** | **3.6** | **4.5** | **4.6** | **3.6** | **4.3** |

| Product Name | LEAA | KEOO |
|---|---|---|
| Share of Clients Testing | 6.0 | 3.4 |
| Share of Clients Using as Supplementary Source | 64.8 | 12.8 |
| Share of Clients Using as Primary Source | 25.9 | 0.6 |
| Unit Market Share of Supplementary Sourcing | 22.9 | 5.8 |
| Unit Market Share of Primary Sourcing | 28.1 | 0.6 |
| Total Unit Market Share | 27.2 | 2.0 |
| $ Market Share of Supplementary Sourcing | 26.0 | 5.5 |
| $ Market Share of Primary Sourcing | 31.5 | 0.6 |
| **Total Market $ Share** | **30.6** | **1.9** |

## 3. Sales and Technical Forces

### Sales Force

| Organisational Structure: End Product | |
|---|---|
| Number of Salespersons | 100 |
| Sales Training ($000) | 110 |

| SALES FORCE : ACTUAL TIME SPENT | | | | |
|---|---|---|---|---|
| **Geography** | East | Central | West | |
| | 34% | 35% | 31% | |
| **Size** | Small | Medium | Large | |
| | 28% | 35% | 37% | |
| **End Product** | Instrumentation | Communication | Consumer | |
| | 35% | 20% | 45% | |
| **Decision Maker** | Production | Engineering | Purchasing | General |
| | 23% | 26% | 28% | 23% |

### Technical Force

| | |
|---|---|
| **Number of Technicians** | 40 |
| **Technical Force Training ($000)** | 60 |

| TECHNICAL FORCE : ACTUAL TIME SPENT | | | | |
|---|---|---|---|---|
| **Geography** | East | Central | West | |
| | 29% | 37% | 34% | |
| **Size** | Small | Medium | Large | |
| | 31% | 32% | 37% | |
| **End Product** | Instrumentation | Communication | Consumer | |
| | 34% | 34% | 32% | |
| **Decision Maker** | Production | Engineering | Purchasing | General |
| | 41% | 34% | 11% | 14% |

## 4. Messages

## 5. Research and Development

**(in $'000 unless otherwise indicated)**

| RESEARCH | | | | | |
|---|---|---|---|---|---|
| | Korex | | | | Lomex |
| **Technology** | **1** | **2** | **3** | **4** | **5** |
| Cumulative Investment | 5000 | 0 | 7000 | 0 | 0 |
| Years Above Minimum Investment | 1 | 0 | 2 | 0 | 0 |
| Status | OK | NO | OK | NO | NO |
| Minimum Total Investment * | 3344 | 5643 | 5643 | 9092 | 11495 |
| Proposed Total Investment * | 6688 | 11286 | 11286 | 13638 | 17242 |
| Minimum Annual Investment * | 1045 | 1672 | 1672 | 2299 | 2299 |

***Warning**: This number does not include expected inflation for the next period.
If you expect inflation next year,please increase the number accordingly.

| DEVELOPMENT | | | | | |
|---|---|---|---|---|---|
| **Name** | **PKENT** | **PKEPI** | **PKEEP** | **PKELY** | **PKE99** |
| Technology | 1 | 1 | 1 | 3 | 3 |
| Cumulative Expenditures | 200 | 400 | 200 | 500 | 300 |
| Status | OK | OK | OK | OK | OK |
| Characteristics (Korex/Lomex) | | | | | |
| 1. Resistance / Convexity | 2000 | 4000 | 3000 | 1300 | 3500 |
| 2. Suspension / Conductivity | 50 | 50 | 40 | 50 | 80 |
| 3. Frequency / Purity | 90 | 95 | 130 | 120 | 100 |
| 4. Density / Maximum Energy | 700 | 600 | 700 | 650 | 700 |
| Base Cost | 351 | 422 | 450 | 323 | 340 |

| DEVELOPMENT | | | |
|---|---|---|---|
| **Name** | **PKE40** | **PKE33** | **PKE22** |
| Technology | 3 | 1 | 1 |
| Cumulative Expenditures | 460 | 250 | 250 |
| Status | OK | OK | OK |
| Characteristics (Korex/Lomex) | | | |
| 1. Resistance / Convexity | 3000 | 3000 | 4000 |
| 2. Suspension / Conductivity | 70 | 40 | 50 |
| 3. Frequency / Purity | 110 | 100 | 95 |
| 4. Density / Maximum Energy | 700 | 550 | 600 |
| Base Cost | 181 | 315 | 315 |

## 6. Cumulative Results

| PRODUCT NAME | | KENT | KEPI | KEEP | KELY | KEAA |
|---|---|---|---|---|---|---|
| Initial Introduction Period [1] | | - 2 | - 4 | - 6 | - 3 | 3 |
| Last Modification Period [1] | | - 2 | - 4 | - 6 | - 3 | 3 |
| Units Sold | '000 | 159.4 | 219.5 | 231.2 | 176.9 | 57.1 |
| Revenues From Sales | $'000 | 103794 | 112383 | 128563 | 103520 | 24516 |
| Manufacturing Costs | $'000 | 47529 | 76590 | 85454 | 49704 | 19672 |
| Licensing Costs | $'000 | 0 | 0 | 0 | 0 | 0 |
| Sales Commissions | $'000 | 3462 | 3722 | 6428 | 4140 | 1225 |
| Promotion | $'000 | 830 | 660 | 1600 | 720 | 800 |
| Product Advertising | $'000 | 240 | 180 | 280 | 220 | 162 |
| Technical Support | $'000 | 740 | 740 | 2253 | 1050 | 433 |
| **Gross Product Contribution** | **$'000** | **50708** | **29768** | **32258** | **47441** | **2221** |

| PRODUCT NAME | | LEAA | KEOO |
|---|---|---|---|
| Initial Introduction Period [1] | | 4 | 5 |
| Last Modification Period [1] | | 4 | 5 |
| Units Sold | '000 | 94.2 | 12.0 |
| Revenues From Sales | $'000 | 26000 | 5717 |
| Manufacturing Costs | $'000 | 8096 | 3094 |
| Licensing Costs | $'000 | 0 | 0 |
| Sales Commissions | $'000 | 1560 | 343 |
| Promotion | $'000 | 800 | 400 |
| Product Advertising | $'000 | 300 | 150 |
| Technical Support | $'000 | 203 | 112 |
| **Gross Product Contribution** | **$'000** | **14953** | **1616** |

| | | |
|---|---|---|
| **Total Gross Product Contribution** | | **178969** |
| Fixed Costs: | | |
| Sales Force | 18576 | |
| Sales Force Training | 435 | |
| Corporate Communications | 423 | |
| Research | 0 | |
| Development | 1260 | |
| Market Research | 3003 | **23697** |
| **Operational Marketing Contribution** | | **155271** |

| | |
|---|---|
| **Adjustments** | |
| Licensing Fees | 0 |
| Cash Payment or Receipts | - 8508 |
| **Net Marketing Contribution** | **146763** |

[1] Negative numbers represent the number of years prior to your arrival in year "0".

**Firm 2 *Blue* Industry *GREEN* Period 5**


## 7. Newsletter

| ENVIRONMENTAL FACTORS | |
|---|---|
| GNP Growth Rate This Period | 2.5% |
| Estimated GNP Growth Rate Next Period | 1.5% |
| Inflation Rate | 5.0% |
| Estimated Inflation Rate Next Period | 5.0% |

| | |
|---|---|
| Inventory Holding Cost | 16.0% |

| COST FACTORS | |
|---|---|
| Fixed Ann. Cost of Salesperson Next Period | $41349 |
| Cost of Hiring a Salesperson Next Period | $6891 |
| Cost of Firing a Salesperson Next Period | $20674 |
| Fixed Ann. Cost of a Technician Next Period | $27591 |
| Cost of Hiring a Technician Next Period | $4598 |
| Cost of Firing a Technician Next Period | $13795 |

| | COST OF MARKET RESEARCH STUDIES | |
|---|---|---|
| 1 | Supplier Survey | $12454 |
| 2 | Survey on Perception of Suppliers | 69191 |
| 3 | Product Awareness & Preference Survey: Korex Market | 13838 |
| 4 | Demand Analysis: Korex Market | 20757 |
| 5 | Market Shares Survey; Korex Market | 27676 |
| 6 | Survey of Organizational Buying Processes: Korex Market | 16606 |
| 7 | Semantic Scales of Product Perception: Korex Market | 55353 |
| 8 | Perceptual Map of Products: Korex Market | 83029 |
| 9 | Market Forecast: Korex Market | 11071 |
| 10 | Product Awareness & Preference Survey: Lomex Market | 13838 |
| 11 | Demand Analysis: Lomex Market | 20757 |
| 12 | Market Shares Survey: Lomex Market | 27676 |
| 13 | Survey of Organizational Buying Processes: Lomex Market | 16606 |
| 14 | Semantic Scales of Product Perception: Lomex Market | 55353 |
| 15 | Market Forecast: Lomex Market | 11071 |
| 16 | Competitive Information | 62272 |

## 8. Product Specifications

| SPECIFICATIONS OF CURRENTLY SOLD PRODUCTS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Product Name | Year Last Modified | Techn-ology | Project Code | Resistance/ Convexity | Suspension/ Conductivity | Frequency/ Purity | Density/ Max. Energy | Base Cost |
| KALA | - 3 | 2 | PKALA | 10000 | 50 | 100 | 750 | 211 |
| KAST | 5 | 1 | PKA01 | 4500 | 55 | 100 | 650 | 421 |
| KAMI | - 5 | 2 | PKAMI | 6500 | 40 | 110 | 700 | 246 |
| KAPE | - 4 | 1 | PKAPE | 1500 | 45 | 85 | 650 | 393 |
| KAMP | 3 | 1 | PKA01 | 4500 | 55 | 100 | 650 | 421 |
| LAAA | 4 | 5 | PLUA | 22 | 120 | 60 | 550 | 87 |
| KALI | 5 | 2 | PKA03 | 8000 | 60 | 100 | 685 | 214 |
| **KENT** | **- 2** | **1** | **PKENT** | **2000** | **50** | **90** | **700** | **351** |
| **KEPI** | **- 4** | **1** | **PKEPI** | **4000** | **50** | **95** | **600** | **422** |
| **KEEP** | **- 6** | **1** | **PKEEP** | **3000** | **40** | **130** | **700** | **450** |
| **KELY** | **- 3** | **3** | **PKELY** | **1300** | **50** | **120** | **650** | **323** |
| **KEAA** | **3** | **3** | **PKE99** | **3500** | **80** | **100** | **700** | **340** |
| **LEAA** | **4** | **5** | **PLOA** | **22** | **120** | **60** | **550** | **87** |
| **KEOO** | **5** | **2** | **PKO22** | **7000** | **60** | **120** | **750** | **220** |
| KILT | - 4 | 3 | PKILT | 2800 | 100 | 90 | 600 | 140 |
| KISS | - 2 | 2 | PKISS | 3000 | 40 | 100 | 550 | 267 |
| KIDU | - 4 | 2 | PKIDU | 6000 | 55 | 120 | 750 | 225 |
| KINE | 4 | 3 | PKI31 | 3941 | 80 | 110 | 700 | 210 |
| KOPA | - 2 | 1 | PKOPA | 3500 | 20 | 115 | 550 | 351 |
| KOLD | - 3 | 2 | PKOLD | 3000 | 50 | 130 | 650 | 379 |
| KOPS | - 4 | 2 | PKOPS | 3000 | 45 | 120 | 600 | 393 |
| KOOK | - 6 | 1 | PKOOK | 2000 | 30 | 120 | 750 | 393 |
| KOOL | 4 | 2 | PKO07 | 6000 | 60 | 120 | 750 | 219 |
| LOOP | 4 | 5 | PLOA | 22 | 120 | 60 | 550 | 87 |
| LOOX | 5 | 5 | PLO01 | 10 | 70 | 30 | 300 | 55 |
| KOKO | 5 | 2 | PKO22 | 7000 | 60 | 120 | 750 | 220 |
| KUST | 3 | 1 | PKU01 | 4000 | 47 | 115 | 750 | 422 |
| KUZZ | 3 | 1 | PKU02 | 3500 | 47 | 115 | 550 | 393 |
| KUTE | - 4 | 3 | PKUTE | 3000 | 75 | 80 | 600 | 351 |
| KURE | 3 | 3 | PKU04 | 3000 | 65 | 80 | 650 | 408 |
| LUUX | 4 | 5 | PLUA | 22 | 120 | 60 | 550 | 87 |
| KUMI | 5 | 2 | PKAMI | 6500 | 40 | 110 | 700 | 246 |

| PROJECTS LICENSED | | | |
|---|---|---|---|
| Project Code | Period | From Firm | To Firm |
| PKAMI | 5 | 1 | 5 |
| PLOA | 4 | 4 | 2 |
| PKO22 | 5 | 4 | 2 |
| PLUA | 4 | 5 | 1 |

## 9. Information on Korex Market

| INFORMATION ON KOREX MARKET | | | | | |
|---|---|---|---|---|---|
| Product Name | Unit Sales ('000) | Market Share in Units (%) | Actual Price ($) | $ Sales ('000) | Market Share in $ (%) |
| KALA | 22 | 3.7 | 434 | 9554 | 3.2 |
| KAST | 18 | 3.0 | 604 | 10886 | 3.6 |
| KAMI | 32 | 5.4 | 485 | 15610 | 5.2 |
| KAPE | 17 | 2.9 | 603 | 10279 | 3.4 |
| KAMP | 23 | 3.8 | 537 | 12230 | 4.1 |
| KALI | 5 | 0.9 | 484 | 2581 | 0.9 |
| **KENT** | **16** | **2.7** | **678** | **10913** | **3.6** |
| **KEPI** | **25** | **4.3** | **533** | **13579** | **4.5** |
| **KEEP** | **23** | **3.9** | **582** | **13661** | **4.6** |
| **KELY** | **18** | **3.0** | **614** | **10811** | **3.6** |
| **KEAA** | **30** | **5.0** | **434** | **13040** | **4.3** |
| **KEOO** | **12** | **2.0** | **477** | **5717** | **1.9** |
| KILT | 19 | 3.2 | 319 | 6177 | 2.1 |
| KISS | 20 | 3.4 | 469 | 9492 | 3.2 |
| KIDU | 55 | 9.2 | 450 | 24637 | 8.2 |
| KINE | 44 | 7.3 | 471 | 20658 | 6.9 |
| KOPA | 16 | 2.6 | 581 | 9149 | 3.0 |
| KOLD | 25 | 4.2 | 393 | 9903 | 3.3 |
| KOPS | 24 | 4.0 | 470 | 11120 | 3.7 |
| KOOK | 17 | 2.9 | 585 | 9969 | 3.3 |
| KOOL | 34 | 5.7 | 424 | 14305 | 4.8 |
| KOKO | 3 | 0.5 | 485 | 1486 | 0.5 |
| KUST | 19 | 3.1 | 665 | 12354 | 4.1 |
| KUZZ | 20 | 3.4 | 598 | 12038 | 4.0 |
| KUTE | 32 | 5.4 | 476 | 15413 | 5.1 |
| KURE | 25 | 4.1 | 550 | 13496 | 4.5 |
| KUMI | 3 | 0.4 | 436 | 1110 | 0.4 |
| **Total** | **596** | **100** | | **300180** | **100** |

**Weighted Average Actual Selling Price $503**

**Total number of clients 17167**

## 10. Information on Lomex Market

| INFORMATION ON LOMEX MARKET | | | | | |
|---|---|---|---|---|---|
| Product Name | Unit Sales ('000) | Market Share in Units (%) | Actual Price ($) | $ Sales ('000) | Market Share in $ (%) |
| LAAA | 14 | 22.9 | 239 | 3265 | 21.9 |
| **LEAA** | **16** | **27.2** | **281** | **4549** | **30.6** |
| LOOP | 12 | 19.7 | 230 | 2693 | 18.1 |
| LOOX | 1 | 2.4 | 230 | 330 | 2.2 |
| LUUX | 17 | 27.9 | 243 | 4046 | 27.2 |
| **Total** | **60** | **100** | | **14884** | **100** |

**Weighted Average Actual Selling Price $250**

**Total number of clients 10635**

**End of Company Report**
**Firm 2 *Blue* Industry *GREEN* Period 5**

# appendix B

## Sample Marketing Research Studies

The following contains the marketing research studies requested by Firm 3 in Period 5 of the INDUSTRAT simulation, as indicated in Figure: 6-7. This is only an example; the data that it contains should not be used in making your decisions.



## Market Research Firm 3 Period 5 Industry Test

# Study 1: Supplier Survey

Telephone survey of 30 companies.

1st (AWA) percentage shows level of satisfactory awareness of suppliers.
2nd (PRE) percentage shows relative preference for each supplier.

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| FIRM 1 | | | | | | | | | | | | | | | | |
| AWA | 56 | 64 | 56 | 37 | 55 | 63 | 55 | 37 | 55 | 62 | 55 | 35 | 57 | 66 | 58 | 38 |
| PRE | 12 | 14 | 8 | 9 | 11 | 13 | 8 | 8 | 11 | 13 | 8 | 9 | 14 | 15 | 9 | 8 |
| FIRM 2 | | | | | | | | | | | | | | | | |
| AWA | 63 | 64 | 63 | 32 | 63 | 65 | 63 | 32 | 63 | 64 | 63 | 32 | 63 | 64 | 63 | 32 |
| PRE | 20 | 19 | 14 | 9 | 19 | 19 | 13 | 9 | 24 | 20 | 14 | 10 | 18 | 19 | 14 | 9 |
| FIRM 3 | | | | | | | | | | | | | | | | |
| AWA | 89 | 90 | 89 | 64 | 89 | 90 | 89 | 64 | 89 | 90 | 89 | 64 | 89 | 90 | 89 | 64 |
| PRE | 31 | 32 | 53 | 65 | 36 | 34 | 56 | 68 | 28 | 31 | 53 | 62 | 30 | 31 | 52 | 64 |
| FIRM 4 | | | | | | | | | | | | | | | | |
| AWA | 55 | 66 | 55 | 34 | 55 | 66 | 55 | 34 | 55 | 68 | 55 | 36 | 55 | 64 | 55 | 32 |
| PRE | 17 | 18 | 14 | 8 | 17 | 18 | 14 | 8 | 19 | 20 | 15 | 9 | 15 | 17 | 13 | 7 |
| FIRM 5 | | | | | | | | | | | | | | | | |
| AWA | 56 | 59 | 56 | 32 | 56 | 57 | 56 | 28 | 56 | 58 | 56 | 31 | 56 | 61 | 56 | 34 |
| PRE | 20 | 17 | 11 | 9 | 16 | 16 | 9 | 7 | 19 | 17 | 10 | 9 | 23 | 18 | 12 | 11 |

PRO: Production Manager PUR: Purchasing Manager
ENG: Engineering Manager GAL: General Manager

## Study 2: Survey on Perceptions of Suppliers

Telephone survey of 30 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of suppliers:

Dimension 1 : Technical aspects (TEC)
Dimension 2 : Commercial aspects (COM)
Dimension 3 : General reputation as a corporation (REP)

**RELATIVE IMPORTANCE OF DIMENSIONS**

Relative weight for each dimension : sum over the 3 dimensions is 100.

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| TEC | 28 | 45 | 25 | 20 | 28 | 45 | 25 | 20 | 28 | 45 | 25 | 20 | 28 | 45 | 25 | 20 |
| COM | 55 | 30 | 54 | 46 | 55 | 30 | 54 | 46 | 55 | 30 | 54 | 46 | 55 | 30 | 54 | 46 |
| REP | 17 | 25 | 21 | 34 | 17 | 25 | 21 | 34 | 17 | 25 | 21 | 34 | 17 | 25 | 21 | 34 |

## Study 2: Survey on Perceptions of Suppliers

Telephone survey of 30 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of suppliers:

Dimension 1 : Technical aspects (TEC)
Dimension 2 : Commercial aspects (COM)
Dimension 3 : General reputation as a corporation (REP)

**IDEAL POINTS**

Most desired combination on 1-7 scales (1=low, 7=high)

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| TEC | 4.9 | 4.4 | 3.8 | 3.6 | 4.9 | 4.4 | 3.8 | 3.6 | 4.9 | 4.4 | 3.8 | 3.6 | 4.9 | 4.4 | 3.8 | 3.6 |
| COM | 3.5 | 3.3 | 5.2 | 4.8 | 3.5 | 3.3 | 5.2 | 4.8 | 3.5 | 3.3 | 5.2 | 4.8 | 3.5 | 3.3 | 5.2 | 4.8 |
| REP | 4.7 | 5.1 | 4.1 | 4.9 | 4.7 | 5.1 | 4.1 | 4.9 | 4.7 | 5.1 | 4.1 | 4.9 | 4.7 | 5.1 | 4.1 | 4.9 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**



**PERCEPTIONS OF SUPPLIERS**

Perceptions on 1-7 scales (1=low, 7=high)

**TECHNICAL ASPECTS**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| Firm 1 | 3.5 | 3.2 | 2.4 | 2.8 | 3.4 | 3.1 | 2.4 | 2.9 | 3.3 | 3.1 | 2.3 | 2.9 | 3.6 | 3.3 | 2.5 | 2.7 |
| Firm 2 | 4.1 | 3.8 | 3.3 | 2.7 | 4.1 | 3.8 | 3.2 | 2.7 | 4.2 | 3.8 | 3.3 | 2.8 | 4.1 | 3.7 | 3.3 | 2.7 |
| Firm 3 | 3.1 | 2.9 | 3.3 | 2.3 | 3.1 | 2.9 | 3.3 | 2.4 | 2.9 | 2.7 | 3.2 | 2.2 | 3.1 | 2.9 | 3.4 | 2.4 |
| Firm 4 | 4.0 | 3.6 | 3.4 | 2.2 | 4.1 | 3.7 | 3.4 | 2.3 | 4.2 | 3.7 | 3.6 | 2.3 | 3.9 | 3.6 | 3.4 | 2.2 |
| Firm 5 | 4.2 | 3.7 | 3.2 | 3.6 | 4.1 | 3.7 | 3.0 | 3.5 | 4.1 | 3.7 | 3.0 | 3.5 | 4.4 | 3.8 | 3.5 | 3.7 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**



**PERCEPTIONS OF SUPPLIERS**

Perceptions on 1-7 scales (1=low, 7=high)

**COMMERCIAL ASPECTS**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| Firm 1 | 2.8 | 2.6 | 2.1 | 2.1 | 2.8 | 2.5 | 2.1 | 2.1 | 2.7 | 2.5 | 2.0 | 2.2 | 3.0 | 2.7 | 2.1 | 2.0 |
| Firm 2 | 3.8 | 3.4 | 3.0 | 2.7 | 3.9 | 3.5 | 3.0 | 2.8 | 3.6 | 3.2 | 3.1 | 2.6 | 3.8 | 3.5 | 3.0 | 2.7 |
| Firm 3 | 3.2 | 3.1 | 4.4 | 4.4 | 3.3 | 3.1 | 4.5 | 4.5 | 3.2 | 3.0 | 4.4 | 4.4 | 3.2 | 3.1 | 4.3 | 4.4 |
| Firm 4 | 3.5 | 3.2 | 3.1 | 2.1 | 3.5 | 3.2 | 3.1 | 2.1 | 3.6 | 3.2 | 3.2 | 2.2 | 3.4 | 3.2 | 3.0 | 2.0 |
| Firm 5 | 3.5 | 3.1 | 2.7 | 2.7 | 3.3 | 3.0 | 2.4 | 2.6 | 3.3 | 3.1 | 2.5 | 2.7 | 3.6 | 3.2 | 3.0 | 2.8 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**



**PERCEPTIONS OF SUPPLIERS**

Perceptions on 1-7 scales (1=low, 7=high)

**GENERAL REPUTATION**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| Firm 1 | 3.0 | 2.7 | 2.1 | 2.3 | 2.9 | 2.6 | 2.1 | 2.4 | 2.8 | 2.7 | 2.1 | 2.4 | 3.1 | 2.8 | 2.2 | 2.2 |
| Firm 2 | 3.6 | 3.3 | 2.9 | 3.0 | 3.5 | 3.3 | 2.9 | 2.9 | 3.6 | 3.3 | 3.0 | 3.1 | 3.6 | 3.3 | 2.9 | 3.0 |
| Firm 3 | 4.3 | 4.6 | 4.1 | 4.8 | 4.4 | 4.7 | 4.1 | 4.8 | 4.3 | 4.6 | 4.1 | 4.8 | 4.3 | 4.6 | 4.1 | 4.8 |
| Firm 4 | 3.3 | 3.0 | 2.8 | 2.0 | 3.4 | 3.0 | 2.8 | 2.0 | 3.4 | 3.0 | 2.9 | 2.0 | 3.3 | 3.1 | 2.8 | 2.0 |
| Firm 5 | 3.5 | 3.2 | 2.7 | 2.8 | 3.4 | 3.1 | 2.4 | 2.7 | 3.4 | 3.1 | 2.5 | 2.7 | 3.7 | 3.3 | 3.0 | 2.9 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Study 3: Product Awareness and Preference Survey - Korex Market

Telephone survey of 50 companies.

**PRODUCT AWARENESS**

**Percentage having a satisfactory knowledge of product.**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| KALA | 35 | 49 | 36 | 26 | 34 | 48 | 34 | 25 | 33 | 46 | 33 | 24 | 38 | 52 | 38 | 27 |
| KAST | 40 | 52 | 40 | 30 | 38 | 50 | 38 | 30 | 37 | 49 | 37 | 28 | 42 | 56 | 43 | 32 |
| KAMI | 49 | 65 | 49 | 36 | 49 | 64 | 49 | 36 | 47 | 63 | 47 | 34 | 51 | 67 | 52 | 37 |
| KAPE | 49 | 63 | 49 | 37 | 48 | 61 | 48 | 37 | 46 | 60 | 46 | 35 | 51 | 65 | 52 | 38 |
| KENT | 40 | 53 | 37 | 23 | 39 | 52 | 36 | 23 | 41 | 54 | 38 | 24 | 39 | 52 | 37 | 23 |
| KEPI | 44 | 56 | 40 | 27 | 43 | 56 | 40 | 27 | 45 | 58 | 42 | 28 | 43 | 56 | 40 | 26 |
| KEEP | 43 | 61 | 41 | 25 | 43 | 61 | 40 | 25 | 45 | 62 | 42 | 26 | 42 | 61 | 40 | 24 |
| KELY | 41 | 57 | 39 | 24 | 41 | 56 | 38 | 24 | 43 | 58 | 40 | 25 | 40 | 57 | 38 | 23 |
| KETI | 32 | 37 | 31 | 22 | 31 | 36 | 30 | 22 | 34 | 40 | 33 | 24 | 31 | 36 | 30 | 21 |
| **KILT** | **65** | **72** | **64** | **50** | **65** | **73** | **65** | **51** | **64** | **71** | **63** | **50** | **65** | **72** | **64** | **50** |
| **KISS** | **72** | **78** | **72** | **57** | **73** | **79** | **72** | **58** | **71** | **77** | **71** | **57** | **72** | **78** | **72** | **57** |
| **KIDU** | **63** | **70** | **63** | **49** | **64** | **72** | **64** | **49** | **62** | **69** | **62** | **48** | **64** | **71** | **63** | **49** |
| **KINE** | **79** | **84** | **79** | **64** | **79** | **84** | **79** | **65** | **78** | **84** | **78** | **64** | **79** | **84** | **79** | **65** |
| KOPA | 37 | 57 | 40 | 27 | 38 | 58 | 41 | 28 | 41 | 60 | 44 | 30 | 34 | 53 | 38 | 25 |
| KONS | 12 | 13 | 12 | 6 | 13 | 13 | 13 | 7 | 14 | 14 | 14 | 7 | 10 | 11 | 11 | 6 |
| KOPS | 39 | 59 | 44 | 32 | 40 | 60 | 45 | 33 | 44 | 63 | 48 | 35 | 36 | 56 | 42 | 29 |
| KOOK | 45 | 66 | 48 | 34 | 46 | 66 | 48 | 35 | 48 | 68 | 50 | 37 | 42 | 64 | 46 | 32 |
| KOKS | 18 | 23 | 19 | 12 | 20 | 24 | 20 | 13 | 21 | 25 | 21 | 14 | 16 | 20 | 17 | 11 |
| KUST | 31 | 46 | 29 | 20 | 27 | 41 | 25 | 17 | 31 | 44 | 28 | 19 | 34 | 48 | 31 | 21 |
| KUZZ | 42 | 53 | 40 | 33 | 37 | 48 | 35 | 29 | 42 | 53 | 40 | 32 | 45 | 57 | 43 | 35 |
| KUTE | 42 | 59 | 40 | 30 | 38 | 55 | 36 | 27 | 42 | 58 | 41 | 30 | 44 | 60 | 42 | 31 |
| KURE | 28 | 40 | 25 | 18 | 24 | 35 | 21 | 15 | 27 | 38 | 24 | 17 | 31 | 44 | 27 | 20 |
| KUCO | 16 | 17 | 16 | 17 | 13 | 14 | 13 | 14 | 16 | 17 | 16 | 16 | 18 | 19 | 17 | 18 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**



## PRODUCT PREFERENCE

Percentage of individuals stating a greater preference for a given product, weighted by the purchase volume of the corresponding client companies.

## GEOGRAPHICAL SEGMENTATION

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| KALA | 5 | 6 | 5 | 4 | 5 | 6 | 5 | 4 | 5 | 6 | 4 | 4 | 6 | 6 | 5 | 4 |
| KAST | 5 | 4 | 6 | 7 | 5 | 5 | 7 | 7 | 5 | 4 | 6 | 7 | 5 | 5 | 7 | 7 |
| KAMI | 7 | 9 | 4 | 4 | 7 | 9 | 4 | 5 | 7 | 9 | 4 | 4 | 7 | 9 | 4 | 4 |
| KAPE | 5 | 5 | 6 | 5 | 5 | 5 | 6 | 5 | 5 | 5 | 6 | 5 | 5 | 5 | 6 | 5 |
| KENT | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 |
| KEPI | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 |
| KEEP | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 |
| KELY | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 |
| KETI | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| **KILT** | **5** | **3** | **5** | **6** | **5** | **4** | **6** | **6** | **5** | **3** | **5** | **6** | **5** | **3** | **5** | **6** |
| **KISS** | **5** | **4** | **6** | **7** | **6** | **4** | **6** | **7** | **5** | **4** | **6** | **7** | **5** | **4** | **6** | **7** |
| **KIDU** | **11** | **7** | **15** | **16** | **11** | **7** | **16** | **16** | **10** | **7** | **15** | **15** | **11** | **7** | **15** | **16** |
| **KINE** | **8** | **5** | **8** | **10** | **8** | **5** | **8** | **11** | **8** | **5** | **8** | **10** | **8** | **5** | **8** | **11** |
| KOPA | 3 | 3 | 5 | 3 | 3 | 3 | 5 | 3 | 3 | 4 | 5 | 3 | 3 | 3 | 4 | 3 |
| KONS | 2 | 1 | 3 | 3 | 2 | 1 | 3 | 3 | 3 | 2 | 3 | 4 | 2 | 1 | 2 | 2 |
| KOPS | 3 | 5 | 3 | 3 | 3 | 5 | 3 | 3 | 4 | 5 | 3 | 3 | 3 | 4 | 3 | 3 |
| KOOK | 5 | 6 | 5 | 5 | 5 | 6 | 5 | 5 | 5 | 6 | 6 | 5 | 4 | 6 | 5 | 4 |
| KOKS | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1 |
| KUST | 5 | 7 | 3 | 3 | 5 | 7 | 3 | 3 | 5 | 7 | 3 | 3 | 6 | 7 | 3 | 3 |
| KUZZ | 6 | 8 | 3 | 4 | 6 | 8 | 3 | 4 | 6 | 8 | 3 | 4 | 7 | 9 | 4 | 4 |
| KUTE | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| KURE | 5 | 6 | 4 | 3 | 4 | 5 | 4 | 3 | 5 | 6 | 4 | 3 | 5 | 6 | 4 | 3 |
| KUCO | 2 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 | 2 |

# Study 4: Demand Analysis - Korex Market

Estimates based on statistical sources, interviews in 30 companies, and managerial judgment.

**GEOGRAPHICAL SEGMENTATION**

| | | AGGREGATE | EAST | CENTRAL | WEST |
|---|---|---|---|---|---|
| Number of clients | | 17144 | 3901 | 5214 | 8029 |
| Total Value | ($000) | 301451 | 86150 | 150805 | 64497 |
| Total Volume | ('000) | 481 | 137 | 240 | 103 |
| Average Value/Client | ($000) | 18 | 22 | 29 | 8 |
| Average Volume/Client | | 28 | 35 | 46 | 13 |
| Share of Primary Sourcing | (% value) | 73 | 74 | 73 | 74 |
| Share of Primary Sourcing | (% volume) | 74 | 74 | 73 | 75 |
| Average Suppliers / Client | | 3 | 3 | 3 | 2 |

# Study 5: Market Shares Survey - Korex Market

Estimates based on survey of 40 companies.

**AGGREGATE MARKET SHARES**

| | % TESTS | % CLIENTS | | % VOLUME | | | % VALUE | | |
|---|---|---|---|---|---|---|---|---|---|
| PRODUCTS | | Suppl. | Primary | Suppl. | Primary | Total | Suppl. | Primary | Total |
| KALA | 3.3 | 17.9 | 5.8 | 7.4 | 5.6 | 6.1 | 5.7 | 4.5 | 4.8 |
| KAST | 3.0 | 16.1 | 5.2 | 7.8 | 5.8 | 6.3 | 6.2 | 4.8 | 5.2 |
| KAMI | 5.3 | 25.4 | 8.7 | 9.4 | 7.8 | 8.2 | 10.0 | 8.5 | 8.9 |
| KAPE | 3.3 | 16.5 | 5.6 | 6.6 | 5.3 | 5.6 | 7.1 | 5.8 | 6.1 |
| KENT | 1.0 | 4.7 | 1.6 | 2.0 | 1.6 | 1.7 | 3.4 | 2.7 | 2.9 |
| KEPI | 2.0 | 9.6 | 3.3 | 4.0 | 3.1 | 3.4 | 4.8 | 3.9 | 4.1 |
| KEEP | 1.3 | 6.2 | 2.1 | 2.6 | 2.1 | 2.2 | 3.9 | 3.1 | 3.3 |
| KELY | 2.0 | 10.0 | 3.3 | 4.2 | 3.2 | 3.5 | 4.4 | 3.5 | 3.7 |
| KETI | 1.3 | 6.3 | 2.1 | 2.6 | 2.0 | 2.2 | 3.4 | 2.7 | 2.9 |
| **KILT** | **2.8** | **0.0** | **4.1** | **0.0** | **4.4** | **3.2** | **0.0** | **3.0** | **2.2** |
| **KISS** | **3.1** | **0.0** | **3.2** | **0.0** | **3.4** | **2.5** | **0.0** | **3.2** | **2.4** |
| **KIDU** | **6.3** | **- 0.0** | **6.2** | **- 0.0** | **6.7** | **5.0** | **- 0.0** | **5.6** | **4.1** |
| **KINE** | **4.6** | **5.6** | **8.2** | **2.4** | **8.4** | **6.8** | **2.1** | **7.5** | **6.1** |
| KOPA | 2.2 | 11.1 | 3.7 | 4.8 | 3.7 | 3.9 | 4.2 | 3.4 | 3.6 |
| KONS | 1.0 | 5.1 | 1.6 | 3.7 | 2.6 | 2.9 | 2.6 | 1.9 | 2.1 |
| KOPS | 2.9 | 13.3 | 4.6 | 5.1 | 4.2 | 4.4 | 6.3 | 5.3 | 5.6 |
| KOOK | 3.8 | 14.1 | 6.1 | 5.4 | 5.5 | 5.5 | 5.9 | 6.3 | 6.2 |
| KOKS | 1.2 | 5.2 | 1.8 | 2.2 | 1.8 | 1.9 | 2.9 | 2.4 | 2.6 |
| KUST | 3.6 | 16.9 | 5.8 | 7.0 | 5.6 | 5.9 | 6.7 | 5.5 | 5.8 |
| KUZZ | 4.6 | 21.1 | 7.3 | 8.3 | 6.8 | 7.2 | 9.2 | 7.8 | 8.1 |
| KUTE | 2.4 | 12.8 | 4.2 | 5.4 | 4.1 | 4.4 | 5.1 | 4.0 | 4.3 |
| KURE | 2.2 | 11.6 | 3.8 | 6.6 | 4.7 | 5.2 | 4.4 | 3.2 | 3.5 |
| KUCO | 0.9 | 5.3 | 1.7 | 2.4 | 1.8 | 1.9 | 1.7 | 1.3 | 1.4 |

# Study 5: Market Shares Survey - Korex Market

Estimates based on survey of 40 companies.

**MARKET SHARES AS PRIMARY SUPPLIER**

**GEOGRAPHICAL SEGMENTATION**

| | EAST | | CENTRAL | | WEST | |
|---|---|---|---|---|---|---|
| PRODUCTS | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE |
| KALA | 5.8 | 4.6 | 5.4 | 4.3 | 5.9 | 4.7 |
| KAST | 5.9 | 4.9 | 5.6 | 4.6 | 6.0 | 5.0 |
| KAMI | 8.0 | 8.8 | 7.6 | 8.3 | 7.9 | 8.7 |
| KAPE | 5.4 | 5.9 | 5.1 | 5.6 | 5.4 | 6.0 |
| KENT | 1.6 | 2.7 | 1.6 | 2.8 | 1.5 | 2.6 |
| KEPI | 3.1 | 3.8 | 3.2 | 3.9 | 3.0 | 3.7 |
| KEEP | 2.1 | 3.1 | 2.1 | 3.2 | 2.0 | 3.0 |
| KELY | 3.2 | 3.5 | 3.3 | 3.5 | 3.1 | 3.3 |
| KETI | 2.0 | 2.7 | 2.1 | 2.8 | 1.9 | 2.6 |
| **KILT** | **4.6** | **3.1** | **4.3** | **2.9** | **4.4** | **3.1** |
| **KISS** | **3.5** | **3.3** | **3.3** | **3.1** | **3.4** | **3.3** |
| **KIDU** | **7.0** | **5.9** | **6.6** | **5.5** | **6.8** | **5.7** |
| **KINE** | **8.7** | **7.8** | **8.2** | **7.3** | **8.5** | **7.7** |
| KOPA | 3.7 | 3.4 | 3.9 | 3.5 | 3.2 | 2.9 |
| KONS | 2.6 | 1.9 | 2.9 | 2.1 | 2.0 | 1.5 |
| KOPS | 4.2 | 5.4 | 4.4 | 5.5 | 3.7 | 4.7 |
| KOOK | 5.6 | 6.4 | 5.7 | 6.5 | 5.1 | 5.8 |
| KOKS | 1.8 | 2.5 | 2.0 | 2.6 | 1.5 | 2.0 |
| KUST | 5.3 | 5.2 | 5.6 | 5.5 | 6.0 | 6.0 |
| KUZZ | 6.4 | 7.3 | 6.8 | 7.7 | 7.4 | 8.4 |
| KUTE | 3.9 | 3.8 | 4.1 | 4.0 | 4.3 | 4.3 |
| KURE | 4.3 | 3.0 | 4.7 | 3.2 | 5.2 | 3.6 |
| KUCO | 1.5 | 1.1 | 1.7 | 1.3 | 2.1 | 1.5 |

# Study 5: Market Shares Survey - Korex Market

Estimates based on survey of 40 companies.

**MARKET SHARES AS SUPPLEMENTARY SUPPLIER**

**GEOGRAPHICAL SEGMENTATION**

| | EAST | | CENTRAL | | WEST | |
|---|---|---|---|---|---|---|
| PRODUCTS | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE |
| KALA | 7.7 | 5.9 | 7.0 | 5.4 | 7.7 | 6.0 |
| KAST | 8.1 | 6.4 | 7.5 | 6.0 | 8.0 | 6.5 |
| KAMI | 9.8 | 10.4 | 9.1 | 9.7 | 9.6 | 10.3 |
| KAPE | 6.9 | 7.3 | 6.4 | 6.8 | 6.8 | 7.3 |
| KENT | 2.0 | 3.4 | 2.0 | 3.5 | 1.9 | 3.3 |
| KEPI | 4.0 | 4.8 | 4.1 | 4.8 | 3.8 | 4.6 |
| KEEP | 2.7 | 3.9 | 2.7 | 3.9 | 2.5 | 3.7 |
| KELY | 4.2 | 4.4 | 4.2 | 4.4 | 4.0 | 4.2 |
| KETI | 2.6 | 3.3 | 2.7 | 3.5 | 2.5 | 3.2 |
| **KILT** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| **KISS** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| **KIDU** | **- 0.0** | **- 0.0** | **- 0.0** | **- 0.0** | **- 0.0** | **- 0.0** |
| **KINE** | **2.5** | **2.2** | **2.4** | **2.1** | **2.5** | **2.2** |
| KOPA | 4.8 | 4.3 | 5.0 | 4.4 | 4.1 | 3.6 |
| KONS | 3.7 | 2.6 | 4.0 | 2.8 | 2.9 | 2.0 |
| KOPS | 5.2 | 6.4 | 5.3 | 6.5 | 4.5 | 5.6 |
| KOOK | 5.4 | 6.0 | 5.5 | 6.1 | 4.9 | 5.4 |
| KOKS | 2.3 | 3.0 | 2.4 | 3.1 | 1.8 | 2.4 |
| KUST | 6.7 | 6.4 | 6.9 | 6.7 | 7.5 | 7.3 |
| KUZZ | 7.9 | 8.7 | 8.3 | 9.1 | 9.0 | 10.1 |
| KUTE | 5.2 | 4.9 | 5.4 | 5.1 | 5.7 | 5.4 |
| KURE | 6.2 | 4.1 | 6.6 | 4.4 | 7.3 | 4.9 |
| KUCO | 2.1 | 1.5 | 2.4 | 1.7 | 2.9 | 2.0 |

# Study 5: Market Shares Survey - Korex Market

Estimates based on survey of 40 companies.

**MARKET SHARES TOTALS**

**GEOGRAPHICAL SEGMENTATION**

| | EAST | | CENTRAL | | WEST | |
|---|---|---|---|---|---|---|
| PRODUCTS | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE |
| KALA | 6.3 | 5.0 | 5.8 | 4.6 | 6.3 | 5.1 |
| KAST | 6.5 | 5.3 | 6.1 | 5.0 | 6.5 | 5.3 |
| KAMI | 8.4 | 9.2 | 8.0 | 8.7 | 8.3 | 9.1 |
| KAPE | 5.8 | 6.3 | 5.5 | 6.0 | 5.8 | 6.3 |
| KENT | 1.7 | 2.9 | 1.7 | 3.0 | 1.6 | 2.8 |
| KEPI | 3.4 | 4.1 | 3.4 | 4.2 | 3.2 | 3.9 |
| KEEP | 2.2 | 3.3 | 2.2 | 3.4 | 2.1 | 3.2 |
| KELY | 3.5 | 3.7 | 3.5 | 3.8 | 3.3 | 3.5 |
| KETI | 2.1 | 2.8 | 2.3 | 3.0 | 2.1 | 2.8 |
| **KILT** | **3.4** | **2.3** | **3.1** | **2.1** | **3.3** | **2.3** |
| **KISS** | **2.6** | **2.5** | **2.4** | **2.3** | **2.5** | **2.4** |
| **KIDU** | **5.2** | **4.3** | **4.8** | **4.0** | **5.1** | **4.2** |
| **KINE** | **7.1** | **6.3** | **6.6** | **5.9** | **7.0** | **6.3** |
| KOPA | 4.0 | 3.6 | 4.2 | 3.8 | 3.4 | 3.1 |
| KONS | 2.8 | 2.1 | 3.2 | 2.3 | 2.2 | 1.6 |
| KOPS | 4.5 | 5.7 | 4.6 | 5.8 | 3.9 | 4.9 |
| KOOK | 5.6 | 6.3 | 5.7 | 6.4 | 5.0 | 5.7 |
| KOKS | 2.0 | 2.6 | 2.1 | 2.7 | 1.6 | 2.1 |
| KUST | 5.6 | 5.5 | 5.9 | 5.8 | 6.4 | 6.3 |
| KUZZ | 6.8 | 7.7 | 7.2 | 8.1 | 7.8 | 8.9 |
| KUTE | 4.2 | 4.1 | 4.4 | 4.3 | 4.7 | 4.6 |
| KURE | 4.8 | 3.3 | 5.2 | 3.5 | 5.7 | 3.9 |
| KUCO | 1.7 | 1.2 | 1.9 | 1.4 | 2.3 | 1.6 |

# Study 5: Market Shares Survey - Korex Market

Estimates based on survey of 40 companies.

**PROPORTION OF PRODUCTS IN TESTS**

**GEOGRAPHICAL SEGMENTATION**

| | EAST | CENTRAL | WEST |
|---|---|---|---|
| KALA | 3.2 | 3.1 | 3.4 |
| KAST | 3.0 | 2.8 | 3.1 |
| KAMI | 5.4 | 5.1 | 5.5 |
| KAPE | 3.3 | 3.2 | 3.4 |
| KENT | 1.0 | 1.0 | 1.0 |
| KEPI | 2.0 | 2.1 | 2.0 |
| KEEP | 1.3 | 1.3 | 1.3 |
| KELY | 2.0 | 2.1 | 1.9 |
| KETI | 1.3 | 1.4 | 1.3 |
| **KILT** | **2.9** | **2.7** | **2.8** |
| **KISS** | **3.2** | **3.0** | **3.1** |
| **KIDU** | **6.5** | **6.0** | **6.3** |
| **KINE** | **4.7** | **4.5** | **4.7** |
| KOPA | 2.3 | 2.4 | 2.0 |
| KONS | 1.1 | 1.2 | 0.9 |
| KOPS | 3.0 | 3.1 | 2.7 |
| KOOK | 3.9 | 3.9 | 3.6 |
| KOKS | 1.3 | 1.3 | 1.1 |
| KUST | 3.2 | 3.5 | 3.8 |
| KUZZ | 4.1 | 4.4 | 4.9 |
| KUTE | 2.2 | 2.4 | 2.5 |
| KURE | 1.9 | 2.1 | 2.4 |
| KUCO | 0.7 | 0.9 | 1.0 |

# Study 6: Survey of Organisational Buying Processes - Korex Market

Surveys based on interviews with 20 companies. Numbers below represent the estimated relative weight of different decision makers in buying decisions.

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | EAST | CENTRAL | WEST |
|---|---|---|---|---|
| **MANAGER** | | | | |
| Production | 24.14 | 24.14 | 24.12 | 24.15 |
| Engineering | 39.37 | 39.36 | 39.39 | 39.35 |
| Purchasing | 19.15 | 19.16 | 19.15 | 19.16 |
| General | 17.34 | 17.34 | 17.34 | 17.34 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Study 7: Semantic Scales on Product Perception - Korex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

Dimension 1 : Price (PRI)
Dimension 2 : Resistance (RES)
Dimension 3 : Suspension (SUS)

**RELATIVE IMPORTANCE OF DIMENSIONS**

Relative weight for each dimension : sum over the 3 dimensions is 100.

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| PRI | 36. | 24. | 62. | 40. | 36. | 24. | 62. | 40. | 36. | 24. | 62. | 40. | 36. | 24. | 62. | 40. |
| RES | 33. | 42. | 17. | 30. | 33. | 42. | 17. | 30. | 33. | 42. | 17. | 30. | 33. | 42. | 17. | 30. |
| SUS | 31. | 33. | 21. | 30. | 31. | 33. | 21. | 30. | 31. | 33. | 21. | 30. | 31. | 33. | 21. | 30. |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Study 7: Semantic Scales on Product Perception - Korex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

Dimension 1 : Price (PRI)
Dimension 2 : Resistance (RES)
Dimension 3 : Suspension (SUS)

**IDEAL POINTS**

Most desired combination on 1-7 scales (1=low, 7=high)

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| PRI | 3.4 | 3.8 | 3.1 | 3.1 | 3.4 | 3.8 | 3.1 | 3.1 | 3.4 | 3.8 | 3.1 | 3.1 | 3.4 | 3.8 | 3.1 | 3.1 |
| RES | 4.5 | 4.4 | 4.2 | 4.1 | 4.5 | 4.4 | 4.2 | 4.1 | 4.5 | 4.4 | 4.2 | 4.1 | 4.5 | 4.4 | 4.2 | 4.1 |
| SUS | 5.1 | 5.2 | 4.5 | 4.5 | 5.1 | 5.2 | 4.5 | 4.5 | 5.1 | 5.2 | 4.5 | 4.5 | 5.1 | 5.2 | 4.5 | 4.5 |

# Study 7: Semantic Scales on Product Perception - Korex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

**PERCEPTIONS OF PRODUCTS**

Perceptions on 1-7 scales (1=low, 7=high)

**PRICE**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| KALA | 2.7 | 2.7 | 2.9 | 2.7 | 2.7 | 2.7 | 2.9 | 2.7 | 2.7 | 2.7 | 2.9 | 2.7 | 2.7 | 2.7 | 2.9 | 2.7 |
| KAST | 2.9 | 2.9 | 3.0 | 2.8 | 2.9 | 2.9 | 3.0 | 2.8 | 2.9 | 2.9 | 3.0 | 2.8 | 2.9 | 2.9 | 3.0 | 2.8 |
| KAMI | 4.1 | 4.2 | 4.0 | 4.1 | 4.1 | 4.2 | 4.0 | 4.1 | 4.1 | 4.2 | 4.0 | 4.1 | 4.1 | 4.2 | 4.0 | 4.1 |
| KAPE | 4.1 | 4.2 | 4.0 | 4.1 | 4.1 | 4.2 | 4.0 | 4.1 | 4.1 | 4.2 | 4.0 | 4.1 | 4.1 | 4.2 | 4.0 | 4.1 |
| KENT | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| KEPI | 4.7 | 4.7 | 4.5 | 4.7 | 4.7 | 4.7 | 4.5 | 4.7 | 4.7 | 4.7 | 4.5 | 4.7 | 4.7 | 4.7 | 4.5 | 4.7 |
| KEEP | 6.0 | 6.0 | 5.8 | 6.0 | 6.0 | 6.0 | 5.8 | 6.0 | 6.0 | 6.0 | 5.8 | 6.0 | 6.0 | 6.0 | 5.8 | 6.0 |
| KELY | 4.0 | 4.1 | 4.0 | 4.0 | 4.0 | 4.1 | 4.0 | 4.0 | 4.0 | 4.1 | 4.0 | 4.0 | 4.0 | 4.1 | 4.0 | 4.0 |
| KETI | 5.2 | 5.2 | 5.0 | 5.3 | 5.2 | 5.2 | 5.0 | 5.3 | 5.2 | 5.2 | 5.0 | 5.2 | 5.2 | 5.2 | 5.0 | 5.3 |
| **KILT** | **2.3** | **2.3** | **2.5** | **2.3** | **2.3** | **2.3** | **2.5** | **2.3** | **2.3** | **2.3** | **2.5** | **2.3** | **2.3** | **2.3** | **2.5** | **2.3** |
| **KISS** | **3.6** | **3.7** | **3.5** | **3.3** | **3.6** | **3.7** | **3.5** | **3.3** | **3.6** | **3.7** | **3.5** | **3.3** | **3.6** | **3.7** | **3.5** | **3.3** |
| **KIDU** | **3.1** | **3.2** | **3.1** | **2.9** | **3.1** | **3.1** | **3.1** | **2.9** | **3.1** | **3.1** | **3.1** | **2.9** | **3.1** | **3.2** | **3.1** | **2.9** |
| **KINE** | **3.3** | **3.4** | **3.3** | **3.1** | **3.3** | **3.4** | **3.3** | **3.1** | **3.3** | **3.4** | **3.3** | **3.1** | **3.3** | **3.4** | **3.3** | **3.1** |
| KOPA | 3.2 | 3.3 | 3.4 | 3.2 | 3.2 | 3.3 | 3.4 | 3.2 | 3.2 | 3.3 | 3.4 | 3.2 | 3.2 | 3.3 | 3.4 | 3.2 |
| KONS | 2.5 | 2.5 | 2.6 | 2.4 | 2.5 | 2.5 | 2.6 | 2.4 | 2.5 | 2.5 | 2.6 | 2.4 | 2.5 | 2.5 | 2.6 | 2.4 |
| KOPS | 4.9 | 4.9 | 4.7 | 5.0 | 4.9 | 4.9 | 4.7 | 5.0 | 4.9 | 4.9 | 4.7 | 5.0 | 4.9 | 4.9 | 4.7 | 5.0 |
| KOOK | 4.3 | 4.3 | 4.2 | 4.3 | 4.3 | 4.3 | 4.2 | 4.3 | 4.3 | 4.3 | 4.2 | 4.3 | 4.3 | 4.3 | 4.2 | 4.3 |
| KOKS | 5.2 | 5.2 | 5.0 | 5.3 | 5.2 | 5.2 | 5.0 | 5.3 | 5.2 | 5.2 | 5.0 | 5.3 | 5.2 | 5.2 | 5.0 | 5.3 |
| KUST | 3.7 | 3.7 | 3.7 | 3.5 | 3.7 | 3.7 | 3.7 | 3.5 | 3.7 | 3.7 | 3.7 | 3.5 | 3.7 | 3.7 | 3.7 | 3.5 |
| KUZZ | 4.2 | 4.3 | 4.1 | 4.2 | 4.3 | 4.3 | 4.1 | 4.3 | 4.3 | 4.3 | 4.1 | 4.2 | 4.2 | 4.3 | 4.1 | 4.2 |
| KUTE | 3.5 | 3.6 | 3.6 | 3.4 | 3.5 | 3.6 | 3.6 | 3.4 | 3.5 | 3.6 | 3.6 | 3.4 | 3.5 | 3.6 | 3.6 | 3.4 |
| KURE | 2.2 | 2.2 | 2.4 | 2.1 | 2.2 | 2.2 | 2.4 | 2.1 | 2.2 | 2.2 | 2.4 | 2.1 | 2.2 | 2.2 | 2.4 | 2.1 |
| KUCO | 2.4 | 2.4 | 2.5 | 2.3 | 2.3 | 2.4 | 2.5 | 2.3 | 2.3 | 2.4 | 2.5 | 2.3 | 2.4 | 2.4 | 2.5 | 2.3 |

# Study 7: Semantic Scales on Product Perception - Korex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

**RESISTANCE**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| KALA | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 |
| KAST | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 |
| KAMI | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 |
| KAPE | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 |
| KENT | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 | 1.8 | 1.7 | 1.8 | 1.8 |
| KEPI | 3.0 | 3.0 | 3.1 | 2.9 | 3.0 | 2.9 | 3.0 | 2.9 | 3.0 | 2.9 | 3.1 | 2.9 | 3.0 | 3.0 | 3.1 | 2.9 |
| KEEP | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 |
| KELY | 2.3 | 2.2 | 2.3 | 2.2 | 2.3 | 2.2 | 2.3 | 2.2 | 2.3 | 2.2 | 2.3 | 2.2 | 2.2 | 2.2 | 2.3 | 2.1 |
| KETI | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 | 2.4 | 2.3 |
| **KILT** | **2.3** | **2.2** | **2.4** | **2.3** | **2.3** | **2.2** | **2.4** | **2.3** | **2.3** | **2.2** | **2.3** | **2.3** | **2.3** | **2.2** | **2.4** | **2.3** |
| **KISS** | **2.5** | **2.4** | **2.6** | **2.5** | **2.5** | **2.4** | **2.6** | **2.5** | **2.5** | **2.4** | **2.5** | **2.5** | **2.5** | **2.4** | **2.6** | **2.5** |
| **KIDU** | **4.1** | **4.2** | **4.1** | **4.2** | **4.1** | **4.2** | **4.1** | **4.2** | **4.1** | **4.2** | **4.1** | **4.2** | **4.1** | **4.2** | **4.1** | **4.2** |
| **KINE** | **2.5** | **2.3** | **2.5** | **2.6** | **2.5** | **2.3** | **2.5** | **2.6** | **2.4** | **2.3** | **2.5** | **2.6** | **2.5** | **2.3** | **2.6** | **2.6** |
| KOPA | 3.1 | 3.1 | 3.2 | 3.0 | 3.1 | 3.1 | 3.2 | 2.9 | 3.1 | 3.1 | 3.2 | 3.0 | 3.1 | 3.1 | 3.2 | 2.9 |
| KONS | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 |
| KOPS | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 |
| KOOK | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 |
| KOKS | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 | 3.9 | 3.9 | 3.9 | 3.8 |
| KUST | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 |
| KUZZ | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.8 | 4.8 | 4.8 | 4.7 | 4.9 |
| KUTE | 2.4 | 2.4 | 2.5 | 2.4 | 2.4 | 2.3 | 2.4 | 2.4 | 2.4 | 2.3 | 2.5 | 2.4 | 2.4 | 2.4 | 2.5 | 2.4 |
| KURE | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 | 4.8 | 4.8 | 4.7 | 4.9 |
| KUCO | 2.4 | 2.4 | 2.5 | 2.4 | 2.4 | 2.4 | 2.4 | 2.3 | 2.4 | 2.4 | 2.4 | 2.4 | 2.5 | 2.4 | 2.5 | 2.4 |

# Study 7: Semantic Scales on Product Perception - Korex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

**SUSPENSION**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| KALA | 5.6 | 5.6 | 5.7 | 5.8 | 5.6 | 5.6 | 5.7 | 5.8 | 5.6 | 5.6 | 5.8 | 5.8 | 5.6 | 5.6 | 5.7 | 5.8 |
| KAST | 3.7 | 3.6 | 3.5 | 3.5 | 3.7 | 3.6 | 3.5 | 3.5 | 3.7 | 3.6 | 3.5 | 3.5 | 3.7 | 3.6 | 3.5 | 3.5 |
| KAMI | 5.6 | 5.6 | 5.7 | 5.8 | 5.6 | 5.6 | 5.7 | 5.8 | 5.6 | 5.6 | 5.8 | 5.8 | 5.6 | 5.6 | 5.7 | 5.8 |
| KAPE | 3.7 | 3.6 | 3.5 | 3.5 | 3.7 | 3.6 | 3.5 | 3.5 | 3.7 | 3.6 | 3.5 | 3.5 | 3.7 | 3.6 | 3.5 | 3.5 |
| KENT | 3.5 | 3.4 | 3.3 | 3.2 | 3.4 | 3.4 | 3.3 | 3.2 | 3.5 | 3.4 | 3.3 | 3.2 | 3.5 | 3.4 | 3.3 | 3.2 |
| KEPI | 3.5 | 3.4 | 3.3 | 3.2 | 3.5 | 3.4 | 3.3 | 3.2 | 3.5 | 3.4 | 3.3 | 3.2 | 3.5 | 3.4 | 3.3 | 3.2 |
| KEEP | 2.9 | 2.7 | 2.6 | 2.6 | 2.8 | 2.7 | 2.6 | 2.6 | 2.9 | 2.7 | 2.6 | 2.6 | 2.9 | 2.7 | 2.6 | 2.6 |
| KELY | 5.5 | 5.5 | 5.6 | 5.7 | 5.5 | 5.5 | 5.6 | 5.7 | 5.5 | 5.5 | 5.6 | 5.7 | 5.5 | 5.5 | 5.6 | 5.7 |
| KETI | 5.4 | 5.5 | 5.5 | 5.6 | 5.4 | 5.5 | 5.5 | 5.6 | 5.4 | 5.5 | 5.5 | 5.6 | 5.4 | 5.4 | 5.5 | 5.6 |
| **KILT** | **6.7** | **6.8** | **6.6** | **6.5** | **6.7** | **6.8** | **6.6** | **6.5** | **6.7** | **6.8** | **6.6** | **6.5** | **6.7** | **6.8** | **6.6** | **6.5** |
| **KISS** | **3.1** | **2.9** | **2.9** | **2.9** | **3.1** | **2.9** | **2.9** | **3.0** | **3.0** | **2.8** | **2.9** | **2.9** | **3.1** | **2.9** | **3.0** | **3.0** |
| **KIDU** | **3.9** | **3.8** | **3.7** | **3.7** | **3.9** | **3.8** | **3.7** | **3.7** | **3.9** | **3.8** | **3.7** | **3.6** | **3.9** | **3.8** | **3.7** | **3.7** |
| **KINE** | **5.4** | **5.4** | **5.4** | **5.3** | **5.4** | **5.4** | **5.4** | **5.3** | **5.4** | **5.4** | **5.4** | **5.4** | **5.4** | **5.4** | **5.4** | **5.3** |
| KOPA | 3.3 | 3.3 | 3.1 | 3.0 | 3.3 | 3.3 | 3.1 | 3.0 | 3.3 | 3.3 | 3.1 | 3.0 | 3.3 | 3.3 | 3.1 | 3.0 |
| KONS | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| KOPS | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| KOOK | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| KOKS | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| KUST | 5.6 | 5.6 | 5.8 | 5.9 | 5.6 | 5.6 | 5.8 | 5.9 | 5.6 | 5.6 | 5.8 | 5.9 | 5.6 | 5.6 | 5.8 | 5.9 |
| KUZZ | 5.6 | 5.6 | 5.7 | 5.8 | 5.6 | 5.6 | 5.7 | 5.8 | 5.6 | 5.6 | 5.7 | 5.8 | 5.6 | 5.6 | 5.7 | 5.8 |
| KUTE | 5.1 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.3 |
| KURE | 5.6 | 5.6 | 5.8 | 5.9 | 5.6 | 5.6 | 5.8 | 5.9 | 5.6 | 5.6 | 5.8 | 5.9 | 5.6 | 5.6 | 5.8 | 5.9 |
| KUCO | 5.1 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.3 |

## Study 8: Perceptual Map of Products - Korex Market

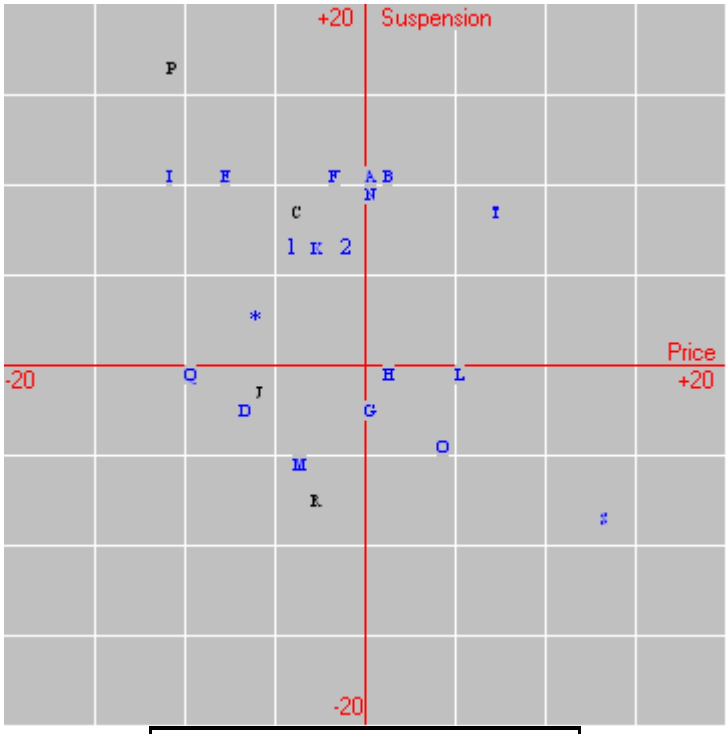
Study based on interviews with 20 companies.
Data gathering and analysis based on a non-metric multidimensional scaling methodology; A maximum of 20 products is used in this study. If more products are on the market, only the first 20 with the largest volume sale are considered in this map. Information on others may be found in study 7.

No significant statistical difference was observed between the perceptions of different decision makers.

Perceptual scales from -20 to +20.

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# * Aggregate Market Analysis




| Ideal Points | Decision Makers | Axis 1 | Axis 2 |
|---|---|---|---|
| 1 | Prod'n | - 4.2 | 7.4 |
| 2 | Eng'ring | - 1.2 | 7.9 |
| 3 | Purch'ing | - 6.1 | 3.3 |
| 4 | General | - 6.1 | 3.4 |

| Perc-eption | Product | Axis 1 | Axis 2 |
|---|---|---|---|
| A | KAMI | 0.7 | 11.5 |
| B | KUZZ | 1.6 | 11.3 |
| C | **KINE** | **- 4.8** | **9.2** |
| D | KAST | - 7.5 | - 2.8 |
| E | KALA | - 8.3 | 11.5 |
| F | KUST | - 2.5 | 11.5 |
| G | KAPE | 0.7 | - 2.8 |
| H | KOOK | 1.8 | 0.0 |
| I | KURE | - 11.8 | 11.5 |
| J | **KIDU** | **- 6.2** | **- 1.6** |
| K | KUTE | - 3.1 | 8.0 |
| L | KOPS | 5.9 | 0.0 |
| M | KOPA | - 4.7 | - 5.6 |
| N | KELY | 0.1 | 10.5 |
| O | KEPI | 4.2 | - 4.2 |
| P | **KILT** | **- 11.1** | **17.7** |
| Q | KONS | - 10.1 | 0.1 |
| R | **KISS** | **- 3.2** | **- 7.1** |
| S | KEEP | 13.2 | - 8.7 |
| T | KETI | 7.8 | 10.0 |

| *Superimposed Points in Graph* | | |
|---|---|---|
| * | means | 34 |

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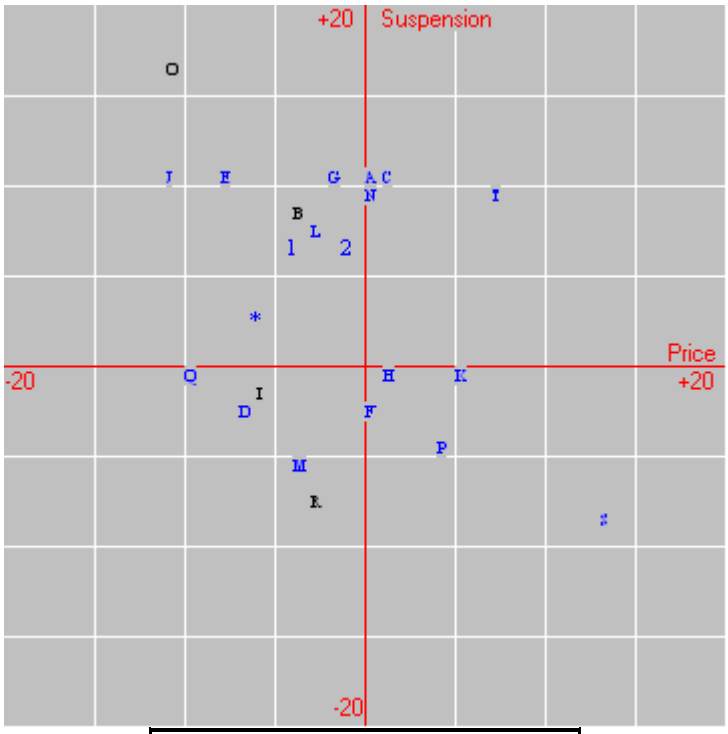
# * Geographical Market Analysis : East




| Ideal Points | Decision Makers | Axis 1 | Axis 2 |
|---|---|---|---|
| 1 | Prod'n | - 4.2 | 7.4 |
| 2 | Eng'ring | - 1.2 | 7.9 |
| 3 | Purch'ing | - 6.1 | 3.3 |
| 4 | General | - 6.1 | 3.4 |

| Perc-eption | Product | Axis 1 | Axis 2 |
|---|---|---|---|
| A | KAMI | 0.7 | 11.5 |
| B | **KINE** | **- 4.8** | **9.2** |
| C | KUZZ | 1.6 | 11.4 |
| D | KAST | - 7.5 | - 2.8 |
| E | KALA | - 8.3 | 11.5 |
| F | KAPE | 0.7 | - 2.7 |
| G | KUST | - 2.5 | 11.5 |
| H | KOOK | 1.8 | 0.0 |
| I | **KIDU** | **- 6.2** | **- 1.5** |
| J | KURE | - 11.8 | 11.6 |
| K | KOPS | 5.9 | 0.0 |
| L | KUTE | - 3.1 | 8.0 |
| M | KOPA | - 4.7 | - 5.6 |
| N | KELY | 0.0 | 10.5 |
| O | **KILT** | **- 11.1** | **17.7** |
| P | KEPI | 4.2 | - 4.3 |
| Q | KONS | - 10.1 | 0.1 |
| R | **KISS** | **- 3.2** | **- 7.0** |
| S | KEEP | 13.2 | - 8.8 |
| T | KETI | 7.8 | 10.0 |

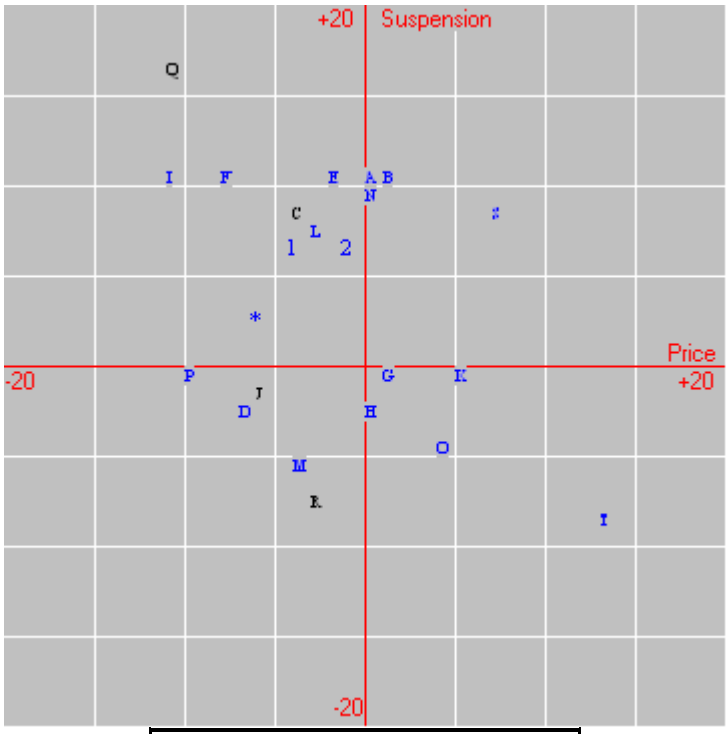
| *Superimposed Points in Graph* | | |
|---|---|---|
| * | means | 34 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**



## * Geographical Market Analysis : Central




| *Superimposed Points in Graph* | | |
|---|---|---|
| * | means | 34 |

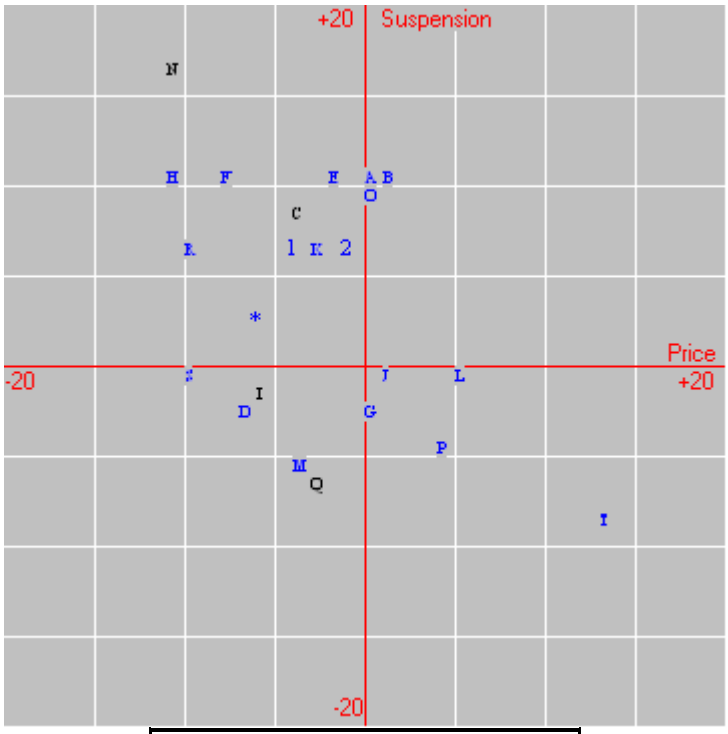
| Ideal Points | Decision Makers | Axis 1 | Axis 2 |
|---|---|---|---|
| 1 | Prod'n | - 4.2 | 7.4 |
| 2 | Eng'ring | - 1.2 | 7.9 |
| 3 | Purch'ing | - 6.1 | 3.3 |
| 4 | General | - 6.1 | 3.4 |

| Perc-eption | Product | Axis 1 | Axis 2 |
|---|---|---|---|
| A | KAMI | 0.7 | 11.5 |
| B | KUZZ | 1.6 | 11.4 |
| C | **KINE** | **- 4.8** | **9.3** |
| D | KAST | - 7.5 | - 2.8 |
| E | KUST | - 2.5 | 11.5 |
| F | KALA | - 8.3 | 11.5 |
| G | KOOK | 1.8 | 0.0 |
| H | KAPE | 0.7 | - 2.7 |
| I | KURE | - 11.8 | 11.6 |
| J | **KIDU** | **- 6.2** | **- 1.8** |
| K | KOPS | 5.9 | 0.0 |
| L | KUTE | - 3.1 | 8.0 |
| M | KOPA | - 4.7 | - 5.6 |
| N | KELY | 0.0 | 10.5 |
| O | KEPI | 4.2 | - 4.2 |
| P | KONS | - 10.1 | 0.1 |
| Q | **KILT** | **- 11.1** | **17.9** |
| R | **KISS** | **- 3.2** | **- 7.5** |
| S | KETI | 7.7 | 10.0 |
| T | KEEP | 13.1 | - 8.7 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**



## * Geographical Market Analysis : West




| Ideal Points | Decision Makers | Axis 1 | Axis 2 |
|---|---|---|---|
| 1 | Prod'n | - 4.2 | 7.4 |
| 2 | Eng'ring | - 1.2 | 7.9 |
| 3 | Purch'ing | - 6.1 | 3.3 |
| 4 | General | - 6.1 | 3.4 |

| Perc-eption | Product | Axis 1 | Axis 2 |
|---|---|---|---|
| A | KAMI | 0.7 | 11.5 |
| B | KUZZ | 1.5 | 11.2 |
| C | **KINE** | **- 4.8** | **9.1** |
| D | KAST | - 7.5 | - 2.8 |
| E | KUST | - 2.5 | 11.5 |
| F | KALA | - 8.3 | 11.5 |
| G | KAPE | 0.7 | - 2.8 |
| H | KURE | - 11.8 | 11.5 |
| I | **KIDU** | **- 6.2** | **- 1.5** |
| J | KOOK | 1.8 | 0.0 |
| K | KUTE | - 3.1 | 7.9 |
| L | KOPS | 5.9 | 0.0 |
| M | KOPA | - 4.7 | - 5.6 |
| N | **KILT** | **- 11.1** | **17.5** |
| O | KELY | 0.1 | 10.5 |
| P | KEPI | 4.3 | - 4.2 |
| Q | **KISS** | **- 3.2** | **- 6.8** |
| R | KUCO | - 10.7 | 7.9 |
| S | KONS | - 10.1 | 0.1 |
| T | KEEP | 13.2 | - 8.7 |

| *Superimposed Points in Graph* | | |
|---|---|---|
| * | means | 34 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Study 9: Market Forecast - Korex Market

Estimates based on econometric analysis of historical data as well as analysis of future market developments. Estimates based on volume.

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | EAST | CENTRAL | WEST |
|---|---|---|---|---|
| Next Year Forecast | | | | |
| Volume ('000) | 477. | 144. | 231. | 99. |
| Growth Rate (%) | - 0.9 | 5.2 | - 3.6 | - 3.6 |
| Fifth Year Forecast | | | | |
| Volume ('000) | 396. | 209. | 138. | 44. |
| Growth Rate (%) | - 3.8 | 8.8 | - 10.5 | - 16.0 |

# Study 10: Product Awareness and Preference Survey - Lomex Market

Telephone survey of 50 companies.

**PRODUCT AWARENESS**

**Percentage having a satisfactory knowledge of product.**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| LENT | 27 | 27 | 26 | 23 | 27 | 27 | 26 | 23 | 27 | 27 | 26 | 23 | 28 | 28 | 26 | 23 |
| LENU | 34 | 34 | 31 | 28 | 34 | 33 | 31 | 28 | 34 | 34 | 31 | 28 | 34 | 34 | 32 | 29 |
| LOTS | 18 | 18 | 19 | 16 | 18 | 18 | 19 | 16 | 18 | 18 | 19 | 16 | 17 | 18 | 19 | 16 |
| LOFT | 19 | 19 | 21 | 17 | 19 | 20 | 21 | 17 | 19 | 19 | 21 | 17 | 18 | 19 | 21 | 17 |

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**PRODUCT PREFERENCE**

Percentage of individuals stating a greater preference for a given product, weighted by the purchase volume of the corresponding client companies.

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| LENT | 30 | 22 | 29 | 38 | 29 | 22 | 29 | 37 | 29 | 22 | 29 | 37 | 30 | 23 | 30 | 38 |
| LENU | 34 | 39 | 31 | 27 | 34 | 39 | 31 | 26 | 34 | 39 | 30 | 26 | 35 | 40 | 31 | 27 |
| LOTS | 13 | 15 | 17 | 12 | 13 | 16 | 17 | 12 | 13 | 16 | 17 | 12 | 12 | 15 | 16 | 11 |
| LOFT | 23 | 23 | 23 | 24 | 24 | 23 | 23 | 24 | 24 | 24 | 24 | 25 | 23 | 22 | 23 | 23 |

# Study 11: Demand Analysis - Lomex Market

Estimates based on statistical sources, interviews in 30 companies, and managerial judgment.

**GEOGRAPHICAL SEGMENTATION**

| | | AGGREGATE | EAST | CENTRAL | WEST |
|---|---|---|---|---|---|
| Number of clients | | 10615 | 2704 | 3119 | 4792 |
| Total Value | ($000) | 27439 | 8087 | 9574 | 9778 |
| Total Volume | ('000) | 38 | 11 | 13 | 13 |
| Average Value/Client | ($000) | 3 | 3 | 3 | 2 |
| Average Volume/Client | | 4 | 4 | 4 | 3 |
| Share of Primary Sourcing | (% value) | 82 | 84 | 82 | 81 |
| Share of Primary Sourcing | (% volume) | 82 | 84 | 82 | 81 |
| Average Suppliers / Client | | 3 | 3 | 3 | 3 |

# Study 12: Market Shares Survey - Lomex Market

Estimates based on survey of 40 companies.

**AGGREGATE MARKET SHARES**

| | % TESTS | % CLIENTS | | % VOLUME | | | % VALUE | | |
|---|---|---|---|---|---|---|---|---|---|
| PRODUCTS | | Suppl. | Primary | Suppl. | Primary | Total | Suppl. | Primary | Total |
| LENT | 10.9 | 90.2 | 33.6 | 30.3 | 31.2 | 31.0 | 24.8 | 25.7 | 25.6 |
| LENU | 11.6 | 92.9 | 32.6 | 30.6 | 31.5 | 31.3 | 33.3 | 34.6 | 34.4 |
| LOTS | 8.5 | 36.6 | 12.4 | 16.4 | 13.6 | 14.1 | 20.2 | 16.9 | 17.5 |
| LOFT | 2.4 | 58.8 | 21.5 | 22.7 | 23.7 | 23.5 | 21.7 | 22.8 | 22.6 |

# Study 12: Market Shares Survey - Lomex Market

Estimates based on survey of 40 companies.

**MARKET SHARES AS PRIMARY SUPPLIER**

**GEOGRAPHICAL SEGMENTATION**

| | EAST | | CENTRAL | | WEST | |
|---|---|---|---|---|---|---|
| PRODUCTS | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE |
| LENT | 31.0 | 25.6 | 30.8 | 25.4 | 31.8 | 26.2 |
| LENU | 31.2 | 34.3 | 31.1 | 34.1 | 32.1 | 35.4 |
| LOTS | 13.8 | 17.1 | 13.9 | 17.2 | 13.2 | 16.3 |
| LOFT | 23.9 | 23.0 | 24.2 | 23.2 | 22.9 | 22.0 |

# Study 12: Market Shares Survey - Lomex Market

Estimates based on survey of 40 companies.

**MARKET SHARES AS SUPPLEMENTARY SUPPLIER**

**GEOGRAPHICAL SEGMENTATION**

| | EAST | | CENTRAL | | WEST | |
|---|---|---|---|---|---|---|
| PRODUCTS | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE |
| LENT | 30.4 | 24.8 | 30.0 | 24.5 | 30.6 | 25.1 |
| LENU | 30.7 | 33.5 | 30.1 | 32.9 | 30.8 | 33.7 |
| LOTS | 16.6 | 20.4 | 16.6 | 20.4 | 16.1 | 19.8 |
| LOFT | 22.3 | 21.3 | 23.3 | 22.2 | 22.5 | 21.5 |

# Study 12: Market Shares Survey - Lomex Market

Estimates based on survey of 40 companies.

**MARKET SHARES TOTALS**

**GEOGRAPHICAL SEGMENTATION**

| | EAST | | CENTRAL | | WEST | |
|---|---|---|---|---|---|---|
| PRODUCTS | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE | % VOLUME | % $ VALUE |
| LENT | 30.9 | 25.4 | 30.7 | 25.2 | 31.5 | 26.0 |
| LENU | 31.2 | 34.2 | 30.9 | 33.9 | 31.9 | 35.0 |
| LOTS | 14.3 | 17.6 | 14.4 | 17.8 | 13.8 | 17.0 |
| LOFT | 23.7 | 22.7 | 24.0 | 23.1 | 22.8 | 21.9 |

# Study 12: Market Shares Survey - Lomex Market

Estimates based on survey of 40 companies.

**PROPORTION OF PRODUCTS IN TESTS**

**GEOGRAPHICAL SEGMENTATION**

| | EAST | CENTRAL | WEST |
|---|---|---|---|
| LENT | 11.2 | 11.4 | 10.5 |
| LENU | 11.8 | 12.0 | 11.1 |
| LOTS | 8.5 | 8.5 | 8.5 |
| LOFT | 2.5 | 2.2 | 2.4 |

# Study 13: Survey of Organisational Buying Processes - Lomex Market

Surveys based on interviews with 20 companies. Numbers below represent the estimated relative weight of different decision makers in buying decisions.

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | EAST | CENTRAL | WEST |
|---|---|---|---|---|
| **MANAGER** | | | | |
| Production | 20.00 | 20.00 | 20.00 | 20.00 |
| Engineering | 21.11 | 21.11 | 21.11 | 21.11 |
| Purchasing | 18.89 | 18.89 | 18.89 | 18.89 |
| General | 40.00 | 40.00 | 40.00 | 40.00 |

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# Study 14: Semantic Scales on Product Perception - Lomex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

Dimension 1 : Price (PRI)
Dimension 2 : Convexity (COV)
Dimension 3 : Conductivity (COD)

## RELATIVE IMPORTANCE OF DIMENSIONS

Relative weight for each dimension : sum over the 3 dimensions is 100.

## GEOGRAPHICAL SEGMENTATION

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| PRI | 34. | 36. | 26. | 44. | 34. | 36. | 26. | 44. | 34. | 36. | 26. | 44. | 34. | 36. | 26. | 44. |
| COV | 36. | 49. | 16. | 32. | 36. | 49. | 16. | 32. | 36. | 49. | 16. | 32. | 36. | 49. | 16. | 32. |
| COD | 30. | 16. | 59. | 23. | 30. | 16. | 59. | 23. | 30. | 16. | 59. | 23. | 30. | 16. | 59. | 23. |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Study 14: Semantic Scales on Product Perception - Lomex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

Dimension 1 : Price (PRI)
Dimension 2 : Convexity (COV)
Dimension 3 : Conductivity (COD)

**IDEAL POINTS**

Most desired combination on 1-7 scales (1=low, 7=high)

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| PRI | 2.7 | 3.7 | 1.9 | 1.5 | 2.7 | 3.7 | 1.9 | 1.5 | 2.7 | 3.7 | 1.9 | 1.5 | 2.7 | 3.7 | 1.9 | 1.5 |
| COV | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 |
| COD | 4.3 | 4.8 | 3.2 | 3.6 | 4.3 | 4.8 | 3.2 | 3.6 | 4.3 | 4.8 | 3.2 | 3.6 | 4.3 | 4.8 | 3.2 | 3.6 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Study 14: Semantic Scales on Product Perception - Lomex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

**PERCEPTIONS OF PRODUCTS**

Perceptions on 1-7 scales (1=low, 7=high)

**PRICE**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| LENT | 2.2 | 2.3 | 2.0 | 1.9 | 2.2 | 2.3 | 2.0 | 1.9 | 2.2 | 2.3 | 2.0 | 1.9 | 2.2 | 2.3 | 2.0 | 1.9 |
| LENU | 3.9 | 4.1 | 3.9 | 3.7 | 4.0 | 4.1 | 3.9 | 3.8 | 4.0 | 4.1 | 3.9 | 3.8 | 3.9 | 4.1 | 3.8 | 3.7 |
| LOTS | 4.9 | 5.1 | 5.0 | 5.0 | 5.0 | 5.1 | 5.0 | 5.0 | 5.0 | 5.1 | 5.0 | 5.0 | 4.9 | 5.1 | 5.0 | 5.0 |
| LOFT | 3.2 | 3.3 | 3.0 | 2.8 | 3.2 | 3.3 | 3.0 | 2.8 | 3.2 | 3.3 | 3.0 | 2.8 | 3.2 | 3.3 | 3.0 | 2.8 |

# Study 14: Semantic Scales on Product Perception - Lomex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

**CONVEXITY**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| LENT | 4.8 | 5.0 | 5.2 | 5.0 | 4.8 | 5.0 | 5.3 | 5.0 | 4.8 | 5.0 | 5.3 | 5.0 | 4.8 | 5.0 | 5.2 | 5.0 |
| LENU | 4.8 | 5.0 | 5.2 | 5.0 | 4.8 | 5.0 | 5.2 | 5.0 | 4.8 | 5.0 | 5.2 | 5.0 | 4.8 | 5.0 | 5.2 | 5.0 |
| LOTS | 4.8 | 5.0 | 5.3 | 5.1 | 4.8 | 5.0 | 5.3 | 5.1 | 4.8 | 5.0 | 5.3 | 5.1 | 4.8 | 5.0 | 5.3 | 5.1 |
| LOFT | 4.8 | 5.0 | 5.3 | 5.1 | 4.8 | 5.0 | 5.3 | 5.1 | 4.8 | 5.0 | 5.3 | 5.1 | 4.8 | 5.0 | 5.3 | 5.1 |

# Study 14: Semantic Scales on Product Perception - Lomex Market

Survey based on interviews with 50 companies. Three dimensions were found to be of determinant importance in explaining the perceptions of products:

**CONDUCTIVITY**

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | | | | EAST | | | | CENTRAL | | | | WEST | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| LENT | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.3 | 5.2 | 5.1 | 5.2 | 5.3 | 5.2 | 5.1 | 5.2 | 5.3 | 5.1 |
| LENU | 5.1 | 5.2 | 5.2 | 5.1 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.3 | 5.1 | 5.1 | 5.2 | 5.2 | 5.1 |
| LOTS | 5.1 | 5.2 | 5.4 | 5.2 | 5.1 | 5.2 | 5.4 | 5.3 | 5.1 | 5.2 | 5.4 | 5.3 | 5.1 | 5.2 | 5.4 | 5.2 |
| LOFT | 5.1 | 5.2 | 5.4 | 5.2 | 5.1 | 5.2 | 5.4 | 5.2 | 5.1 | 5.2 | 5.4 | 5.2 | 5.1 | 5.2 | 5.4 | 5.2 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Study 15: Market Forecast - Lomex Market

Estimates based on econometric analysis of historical data as well as analysis of future market developments. Estimates based on volume.

**GEOGRAPHICAL SEGMENTATION**

| | AGGREGATE | EAST | CENTRAL | WEST |
|---|---|---|---|---|
| Next Year Forecast | | | | |
| Volume ('000) | 101. | 31. | 36. | 34. |
| Growth Rate (%) | 167.1 | 176.7 | 176.7 | 151.6 |
| Fifth Year Forecast | | | | |
| Volume ('000) | 95. | 36. | 42. | 19. |
| Growth Rate (%) | 20.5 | 26.3 | 26.3 | 7.8 |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Study 16: Competitive Information

Estimates obtained from a variety of sources.

**AGGREGATE PRODUCT MANAGEMENT INFORMATION**

| Products | Maximum Price Discount (%) | Promotion ($000) | Sales Commission (%) | Technical Support ($000) | Product Advertising ($000) |
|---|---|---|---|---|---|
| KALA | 5.0 | 0. | 7.0 | 474. | 0. |
| KAST | 4.0 | 0. | 5.0 | 316. | 0. |
| KAMI | 5.0 | 0. | 7.0 | 474. | 0. |
| KAPE | 5.0 | 0. | 5.0 | 316. | 0. |
| KENT | 6.0 | 0. | 2.0 | 275. | 0. |
| KEPI | 4.0 | 0. | 4.0 | 366. | 0. |
| KEEP | 4.0 | 0. | 2.0 | 275. | 0. |
| KELY | 5.0 | 0. | 3.0 | 275. | 0. |
| KETI | 4.0 | 0. | 4.0 | 275. | 0. |
| LENT | 0.0 | 0. | 4.0 | 183. | 0. |
| LENU | 0.0 | 0. | 6.0 | 183. | 0. |
| **KILT** | **10.0** | **100.** | **2.0** | **62.** | **40.** |
| **KISS** | **10.0** | **150.** | **4.0** | **187.** | **60.** |
| **KIDU** | **15.0** | **75.** | **3.0** | **93.** | **40.** |
| **KINE** | **10.0** | **250.** | **4.0** | **280.** | **100.** |
| KOPA | 5.0 | 0. | 6.0 | 131. | 0. |
| KONS | 5.0 | 0. | 3.0 | 393. | 0. |
| KOPS | 3.0 | 0. | 7.0 | 66. | 0. |
| KOOK | 8.0 | 0. | 8.0 | 66. | 0. |
| KOKS | 5.0 | 0. | 5.0 | 393. | 0. |
| LOTS | 0.0 | 0. | 5.0 | 131. | 0. |
| LOFT | 0.0 | 0. | 5.0 | 131. | 0. |
| KUST | 5.0 | 0. | 5.0 | 180. | 0. |
| KUZZ | 5.0 | 0. | 6.0 | 719. | 0. |
| KUTE | 5.0 | 0. | 6.0 | 360. | 0. |

**Firm 3 *(Green)* Industry *(Test)* Period 5**



**CORPORATE INFORMATION**

| | FIRM | | | | |
|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** |
| Sales Force | | | | | |
| Number of Salespersons | 95 | 100 | 30 | 93 | 98 |
| Training Expenditure ($000) | 0. | 0. | 40. | 0. | 0. |
| Technical Force | | | | | |
| Number of Technicians | 40 | 45 | 15 | 34 | 46 |
| Training Expenditure ($000) | 0. | 0. | 45. | 0. | 0. |
| Corporate Marketing ($000) | 0. | 0. | 200. | 0. | 0. |

**Firm 3 *(Green)* Industry *(Test)* Period 5**


# Allocation of Sales and Technical Forces

### ON BASIS OF DECISION-MAKERS

| | SALES FORCE | | | | TECHNICAL FORCE | | | |
|---|---|---|---|---|---|---|---|---|
| FIRM | PRO | ENG | PUR | GAL | PRO | ENG | PUR | GAL |
| 1 | 0.20 | 0.35 | 0.25 | 0.20 | 0.25 | 0.40 | 0.15 | 0.20 |
| 2 | 0.21 | 0.44 | 0.15 | 0.20 | 0.25 | 0.50 | 0.20 | 0.05 |
| 3 | 0.20 | 0.45 | 0.20 | 0.15 | 0.25 | 0.65 | 0.10 | 0.00 |
| 4 | 0.15 | 0.40 | 0.25 | 0.20 | 0.35 | 0.50 | 0.10 | 0.05 |
| 5 | 0.15 | 0.40 | 0.25 | 0.20 | 0.30 | 0.50 | 0.10 | 0.10 |

### ON BASIS OF GEOGRAPHY SEGMENTATION

| | SALES FORCE | | | TECHNICAL FORCE | | |
|---|---|---|---|---|---|---|
| FIRM | EAST | CENTRAL | WEST | EAST | CENTRAL | WEST |
| 1 | 0.30 | 0.45 | 0.25 | 0.30 | 0.45 | 0.25 |
| 2 | 0.29 | 0.50 | 0.21 | 0.29 | 0.50 | 0.21 |
| 3 | 0.40 | 0.30 | 0.30 | 0.40 | 0.30 | 0.30 |
| 4 | 0.30 | 0.50 | 0.20 | 0.30 | 0.50 | 0.20 |
| 5 | 0.25 | 0.50 | 0.25 | 0.20 | 0.30 | 0.50 |

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# Decision Support System: Quick Reference Guide

Often, it is easer for participants to recognize a question or issue than to search through the manual haphazardly and discover an item of interest. If you are having trouble finding information, check the list of questions and issues below:

1. Current Market Opportunities: Which segments/segmentation approaches are most attractive? Which segments are highly competitive? How can I get a general overview of the market?

   Menu option **Tools -> Market Attractiveness** (choose segmentation approach) *Pg: 76*

2. Product Strengths/Weaknesses: How do my products compare with the market leaders? Which products deserve greater resources?

   Click on **Tools -> Business Position** (choose segmentation approach) *Pg: 77*
   Or Click on **Product -> Preference** *Pg:* 108

3. Finding Segment Leaders: What products are market share leaders under different Segmentation approaches?

Click on **Tools -> Customer Need Analysis** (default screen shows top 10 in order) Choose market and segmentation approach from drop-down menus *Pg: 79*

4. Current Brand Characteristics on the Market: What are the current characteristics (price, resistance and suspension for Korex: price, convexity and conductivity for Lomex) of products on the market? How are these products perceived by customers?

Click on **Tools -> Customer Need Analysis** (default screen shows top 10 in order) Choose market and segmentation approach from drop-down menus *Pg: 79*

5. Graphing Product Attributes: How can I visually see where my products are positioned based on price, resistance or suspension for Korex, or price, convexity or conductivity for Lomex? Where are the other products located on a two dimensional map?

   Click on **Tools -> Customer Need Analysis -> Product Perception Plot**
   Choose market and segmentation approach from drop-down menus *Pg: 81*

 

6. Trends in Customer Needs: Are customer needs changing over time?

   Click on **Tools -> Customer Need Analysis -> Ideal Product Trend**
   Choose market and segmentation approach from drop-down menus *Pg: 83*

7. Determining Limits of Technologies: Will Korex technology limitations affect our strategy?

   Click on **Tools -> Customer Need Analysis** -> **Product Perception Plot** *Pg: 81*
   Or Click on **Tools -> Customer Need Analysis** -> **Product Perception Trend** *Pg: 82*
   Or Click on **Tools -> Customer Need Analysis** -> **Ideal Product Trend** *Pg: 83*

Under Technological Bounds, choose the appropriate Technology by clicking on the box.

8. Estimating Ideal Brand Characteristics for each Segment: If my company wants to build a product targeted for a particular segment, what characteristics should we try to develop?

   Click on **Tools -> Customer Need Analysis** -> **Ideal Value Estimate**
   Choose market and segmentation approach from drop-down menus *Pg: 84*

9. Graphing Firm Positioning: How can I visually see how our company is perceived based on technical aspects, commercial aspect and general reputation? Where are the other firms located on a two dimensional map?

   Click on **Tools -> Firm Perception -> Firm Perception Plot**
   Choose market and segmentation approach from drop-down menus *Pg: 87*

10. Experience Curve Analysis: What is the effect (if any) of the experience curve on our brand's costs? Where is our brand on the experience curve? How can we estimate future costs at different production levels?

    Click on **Tools -> Experience Curve** *Pg: 90*

11. Portfolio Analysis: Do we have a well balanced portfolio of products? Which products are likely to be cash cows, dogs, stars and question marks? What strategy alternatives (invest, maintain, harvest, withdrawal) should we consider? What are the margins and marketing expenditures for my products?

    Click on **Tools -> Growth/Share Matrix** (choose segmentation approach)
    *Pg: 92*
    Or Click on **Tools -> GE Nine Cells Matrix** (choose segmentation approach)
    *Pg: 94*

 

12. Market trends: Are there trends in the overall Korex or Lomex markets we should be aware of?

    Click on the menu option: **Market** *Pg: 105*

13. Firm Competitive Analysis: How does my team's performance compare with the competition? Are there any trends in terms of sales, awareness, preference, corporate marketing or sales force we should be tracking?

    Click on the menu option: **Corporate** *Pg: 105*

14. Brand Competitive Analysis: How do my products' performance or tactics compare with the competition? Are there any trends in terms of pricing, advertising, commissions, discounts which are significant?

    Click on the menu option: **Product** *Pg: 107*

 

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