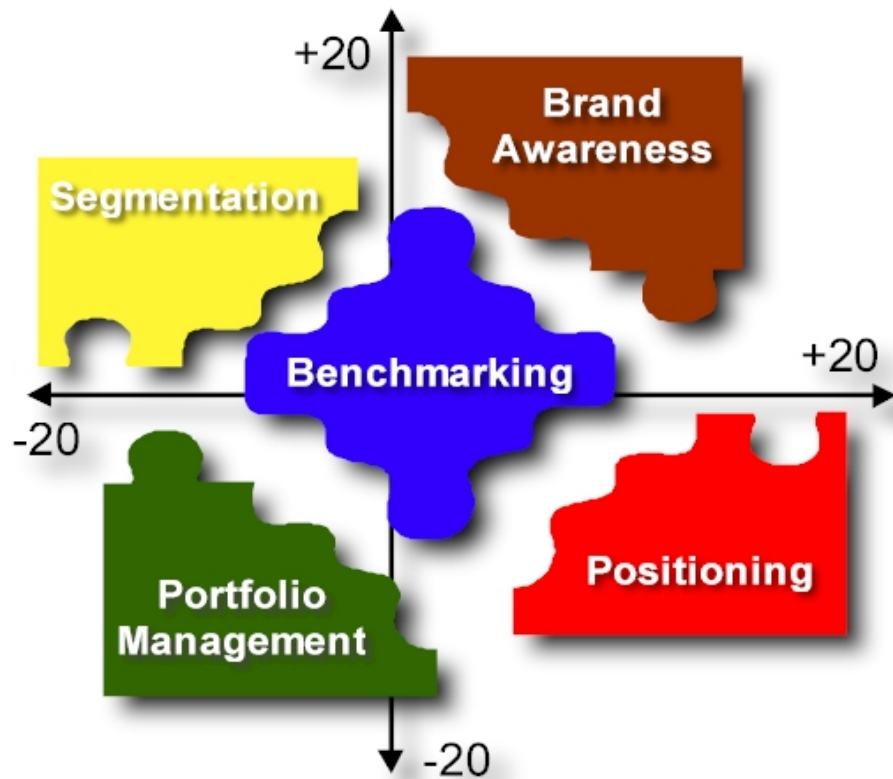


# MARKSTRAT<sup>®</sup>3 for Executives

*the fastest way to discover MARKSTRAT<sup>®</sup>3*



**STRATX Licensing Division**

Boston - London - Paris

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*MARKSTRAT3* is the latest version of the *MARKSTRAT*<sup>1</sup> simulation. Used in combination with more traditional training methods such as conceptual sessions or case studies, *MARKSTRAT3* is a highly effective tool to learn strategic marketing concepts, such as brand portfolio strategy or segmentation and positioning strategy, as well as operational marketing.

Typically, *MARKSTRAT3*-based training programs are used to build a critical mass of market-oriented managers across all parts of an organization, such as a division of a large company. Becoming market-led often involves changing the attitudes of the managers and employees in the company. *MARKSTRAT3* will help develop these new attitudes and help managers view the change as an opportunity rather than as a threat. It allows managers to develop new marketing strategy skills in a risk-free environment. The marketing simulation, similar to a flight simulator, allows managers to practice their new skills in an intensive time frame before trying them out in their real business environment.

The mathematical model of the *MARKSTRAT* and *MARKSTRAT3* simulations is based on solid theoretical foundations, and the underlying formulas have been extensively tested. Both simulations have been used to successfully train a large number of executives from many organizations, covering many industrial sectors.

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<sup>1</sup> The original *MARKSTRAT* simulation was developed more than twenty years ago by Jean-Claude Larréché, Alfred H. Heineken Professor of Marketing at INSEAD, and Hubert Gatignon, Professor of Marketing and Associate Dean of Faculty at INSEAD

**STRATX** is a marketing and business management development consulting firm founded in 1984 by Jean-Claude Larréché. STRATX specializes in improving client companies' performance by developing their managers' ability to formulate and implement successful market-led strategies. Working with many of the world's leading corporations, STRATX brings about change in three essential ways: (1) providing *training programs* to build a critical mass of market-oriented managers across all parts of the client organization; (2) furnishing *marketing audit* services to help clients identify specific areas for improvement; (3) supplying *process consulting* services to help clients formulate and implement specific strategic objectives.

Our capabilities allow us to work with our clients to identify key business issues, assess current level of marketing understanding and measure gaps in skills that may exist to achieve strategic priorities. From this analysis, we provide recommendations for bridging the identified gaps through a development program designed to achieve the client's strategic priorities.

The format and content of a strategic marketing development program is of course tailored to the specific client situation. The program may include the design of sessions or an entire workshop to better suit the client's learning objectives and challenge the level and experience of participants. Consultants in our Boston, London, Munich or Paris offices will be able to help discern the best course of action.

STRATX also has an in-house Research and Development department who develops new simulations and continuously improves existing ones. MARKSTRAT3 and MARKPRO Business-to-Business are the latest developed simulations; they include all the core concepts that have made the success of previous simulations, while providing the user-friendliness and graphic capabilities of the Windows-based software.

# 1. Overview of the MARKSTRAT World

## 1.1 Your Role

You and the other members of your team have just been recruited by a large corporation to manage the Marketing department of one of its divisions. Coming from a different industry, the new team has no experience of the MARKSTRAT3 world. In the upcoming years, you will compete with several other firms to market two types of durable goods to consumers. During this exercise, you will be responsible for formulating and implementing the long-term marketing strategy of your division. In particular, you and your team members will have to:

- target selected segments and position your products in a highly competitive market;
- interface with the R&D department to design and develop new products;
- prepare the launch of new products, improve, maintain or withdraw existing ones;
- interface with the Production department to specify production planning;
- make marketing mix decisions, such as pricing or advertising budget, for each brand in your portfolio;
- decide on the size and priorities of your sales force;
- order market research studies that provide up-to-date information for decision making.

## 1.2 Overview of the MARKSTRAT Industry

The MARKSTRAT world is a fictitious industrialized country of 250 million inhabitants whose monetary unit is the MARKSTRAT dollar (\$). In this country both inflation and GNP growth are fairly stable, and no major political, social or economic event is anticipated in the near future. The MARKSTRAT world does not intend to represent any particular country, market or industrial sector. However, it roughly behaves like most markets, and the general management and marketing knowledge that you have acquired through business experience or formal education applies to this new world.

In the MARKSTRAT3 world, there are a handful of competing companies that manufacture and market consumer durable goods. These goods are comparable to electronic products such as hi-fi systems, telephone sets or computers as well as office equipment, cars, books, or any other consumer durable goods. Initially each firm starts in a different situation in terms of product specifications, target customer groups, brand awareness levels, market share, distribution coverage, profitability, R&D expertise, etc. Consequently, the marketing strategy of each firm should be adapted to its particular situation within the industry.

Nevertheless, no firm has a relative advantage over the others and initially many characteristics are common to all firms. For instance, the initial brand portfolio of all companies is comprised of two brands. As mentioned before, each firm will have the opportunity to design and develop new R&D projects and to introduce new products or upgrade existing ones. All R&D departments have the same capabilities to develop new projects, in their range of experience. Similarly, all sales forces are equally qualified to handle distributor relationships.

## 1.3 Sonite Products

At the beginning of the simulation, all rival firms market two *Sonite* brands. *Sonite* products have existed for several years and the market has grown quite consistently since the introduction of the first *Sonite* brand. It is now a well-established market, with several strong brands at different price points covering a wide range of needs. Analysts believe that the *Sonite* market will continue to grow over the next five years.

A Sonite is a complex piece of equipment made up of several components. Although they can be evaluated along more than fifty attributes, Sonite brands are primarily differentiated in terms of the five most important physical characteristics listed in the table below. The *base cost* is also an important parameter; this is the cost at which each unit will be produced, based on an initial production batch of 100,000 units. The base cost is decided jointly by the Marketing department – which is mainly concerned by margin and profitability– and by the R&D department –which is mainly concerned with product feasibility. Only the following characteristics will be considered during the course of the simulation:

Characteristic	Unit	Feasible range
Weight	Kgs	10 – 20
Design	Index	3 – 10
Volume	dm <sup>3</sup>	20 – 100
Maximum frequency (refers to the band width)	KHertz	5 – 50
Power	Watts	5 – 100
Base cost	\$	10 +

Note that design is not related to the product esthetic but to the type of raw materials used (wood, plastic, metal, ...) or to the aspect of its various components. Therefore, a product rated 8 on the design scale is not better or easier-to-use than one rated 4 on the same scale.

All brands marketed in a given period will be listed in the corresponding Newsletter, in a table similar to Figure 1.

### 1.4 Vodite Products

Recently, there has been industry speculation that a new type of electronic product might emerge, the *Vodite*. Although no Vodite brands are available at the start of the simulation, industry experts have a pretty good idea of what future Vodite products might resemble.

Vodite products will satisfy entirely different needs from that of Sonite products so that demand for the two products will be completely independent. Furthermore, they will not be complementary in any way and there will not be any substitution from one to the other. The expertise required of

**CHARACTERISTICS OF MARKETED SONITE BRANDS**

Firm	Brand	New or modified	Physical characteristics					Base cost (\$)	Retail price (\$)
			Weight (Kg)	Design (Index)	Volume (Dm3)	Max Freq (KHz)	Power (W)		
A	SAMA	No	18	3	75	25	12	73	195
	SALT	No	13	8	40	40	75	169	420
	SACK	New	13	8	40	40	75	169	300
E	SEMI	No	18	3	75	25	12	73	238
	SELF	No	13	8	40	40	75	169	400
	SEXY	New	18	3	75	25	12	73	280
	SEAL	New	18	3	75	25	12	73	175
	SELL	New	13	8	40	40	75	169	351
I	SIRO	No	18	3	75	25	12	73	210
	SIBI	No	13	8	40	40	75	169	398
O	SOLD	No	18	3	75	25	12	73	225
	SONO	No	13	8	40	40	75	169	385
U	SUSI	No	18	3	75	25	12	73	200
	SULI	No	13	8	40	40	75	169	345
	SUCK	New	13	8	40	40	75	169	330

**Figure 1 – A typical list of marketed brands**

potential suppliers is similar for both markets in terms of technology, manufacturing, marketing and distribution. Therefore, your division and your competitors are the most likely suppliers of Vodites. Although the Sonite and Vodite technologies are similar, all firms will have to engage substantial R&D resources in order to develop their first Vodite product; recent estimations anticipate investments of about 10 million dollars may be required.

Experts tend to agree that the main physical characteristics of a Vodite will be the ones described in the table below. Finally, it is anticipated that the Vodite market could be quite attractive if the right products were made available at the right price.

Characteristics	Unit	Feasible range
Autonomy	metres	5 – 100
Maximum frequency	KHertz	5 – 20
Diameter	mms	10 – 100
Design	index	3 – 10
Weight	gs	10 – 100
Base cost	\$	10 +

## 1.5 Naming Conventions

In MARKSTRAT3, brand names are made up of four characters, as shown in the figure below. The first letter must be an 'S' for a Sonite, or a 'V' for a Vodite. The second letter identifies the firm marketing the brand and must be a vowel (A, E, I, O, U or Y). Finally, the last two characters can be letters or numbers, and can be freely chosen by each firm to generate different brand names.



For instance, brands SIBI and SIRO would be Sonites marketed by firm I, and brand VAIN would be a Vodite marketed by company A. All new brands must follow these conventions, and must have different names. However, the selected name has no influence on the market response to the brand.

## 1.6 Sonite Customers

Sonite customers are adults who purchase the products for personal or professional use. Market research studies show that the Sonite market can be divided into five major groups of customers, or segments, having similar needs and purchasing behavior.

- **Bufs (Bu)** – People in this segment show a high level of interest in Sonites and other similar products. They are extremely knowledgeable about Sonite technology and the different characteristics of the existing brands. Bufs were probably among the first to use Sonite products. They demand high-performance products, but are less concerned by the convenience of the products. However, they are quite price-sensitive, since they use Sonite products for their personal use and do not necessarily have high incomes.
- **Singles (Si)** – As the name of this segment indicates, Singles live alone. They demand average levels of both performance and convenience in Sonite products. Like Bufs, they use Sonite products for personal purposes and are quite price-sensitive.
- **Professionals (Pr)** – Individuals in this segment may use Sonite products for both personal and professional reasons. As a consequence, they are looking for high quality, high-performance and easy-to-use products. They can afford expensive products and often view price as an indication of quality.



- **High earners (Hi)** – This group is characterized by their high incomes, using Sonite products on a private basis. Studies show that they usually buy fairly expensive products, which they can afford, and that their purchase is partially motivated by social status. Although they tend to use their Sonites less than the average consumer, they demand performance and convenience from the products.
- **Others (Ot)** – This segment includes all consumers who do not belong to any of the above groups. Although this segment is the largest and is composed of several sub-groups, most customers have similar needs. They are looking for cheap, low-performance products with average convenience. Experts believe that the penetration of this segment is not as high as the other segments. As a consequence, its future growth rate could exceed forecasts.

Each segment has specific needs in terms of physical characteristics and price. Awareness levels and purchase intentions vary significantly for existing products from one group to the other. Market forecast studies show that the sizes and growth rates of the five segments are significantly different. This is explained in part by the development stage of each segment, by the varying product offerings, and by the intensity of marketing effort targeted at each segment.

## 1.7 **Vodite Consumers**

While potential consumers for Vodites are the same individuals as those who buy Sonites, a different segmentation scheme is likely to be valid for Vodites. Further studies need to be completed, but marketing experts believe that it will be more effective to group consumers according to how they adopt new products. In this light, three groups might be considered for Vodites.

- **Innovators (In)** – These consumers will be the first users of Vodite products. People in this segment tend to be adventurous and are willing to try new ideas at some risk. Although this segment will probably be the largest one in the early days, it represents only a small percentage of the total potential consumers. However, they demonstrate both a high desire and interest for Vodite products and their income levels are above average.
- **Early adopters (Ad)** – Consumers in this segment will not adopt Vodite products as quickly as innovators but will certainly do so before a majority of people have accepted the new technology. As this group is usually much larger than the previous one, its influence on other consumers is fairly high. Early adopters tend to be opinion leaders and helpful in 'advertising' the new product to other potential buyers. They are critical to the adoption process, and should not be neglected by marketers. They have an average income level.
- **Followers (Fo)** - These individuals represent the bulk of potential consumers. Because they perceive more risk in buying new products, they adopt a product innovation only after a large number of consumers have tried it. Innovators and early adopters particularly influence followers. Their income level is usually below average.

## 1.8 **Distribution Channels**

Sonite consumers tend to shop in the following three distribution channels and the same is likely to hold for Vodites:

- **Specialty stores** – These stores are usually small and do not belong to organized chains. They are geographically close to their customers and can provide a high level of service and technical support. As they do not distribute many different product categories, Sonite products account for a large proportion of their sales. These stores usually carry a broad product line for each category, including the most expensive and/or high-performance products. Because of their high level of technological expertise, specialty stores are likely to be the preferred distribution channel for Vodite products.
- **Department stores** – Department stores are characterized by the wide product assortment they offer. They usually have a department carrying Sonites. They provide extensive customer service, but their technological expertise is lower than that of specialty stores.

Department stores are often organized in chains that have a degree of power in negotiating margins with manufacturers.

- **Mass Merchandisers** – These stores operate on a low-price, high-volume basis and try to minimize overheads. As a consequence, the level of service offered is lower than that of the two other channels. While mass merchandisers carry many different product categories, the depth of each product line is usually restricted to a few units. They often distribute the cheaper, low-performance products. Their lack of technical expertise and the low level of service may well prevent them from distributing Vodites in the early years.

As far as the Sonite market is concerned, market research studies show that all three distribution channels are important, therefore each of them should be visited by the companies' sales forces. There are approximately 30,000 specialty stores, 7,000 department stores belonging to 15 different chains, and 10,000 mass merchandisers belonging to 8 different chains.

Differences between margins obtained by the stores in each of the three channels are mainly due to differences in the level of service and volume sold. These margins are applied to retail prices and are approximately constant across brands for a given channel. In MARKSTRAT the distributor margins are: 40% for specialty stores; 30% for department stores; and 30% for mass merchandisers.

## 2. Managing your Firm

The Marketing department for which you and your team will be working is responsible for the design and implementation of the marketing strategy of your division. You will have to decide the overall orientation of the company regarding:

- the *product portfolio strategy* – which brands the company is going to develop and market;
- the *segmentation and positioning strategy* – which market segments will be targeted and how products will be positioned;
- the *marketing mix strategy* – the day-to-day operational marketing decisions such as pricing, production, communication and distribution.

You will manage the Marketing department as a profit center, and your performance will be measured by the following indicators: net contribution generated, brand market shares, your ability to grow the firm revenues, quality of R&D projects successfully completed, etc. Finally, the best measure of your company's success will be its *share price index*, a measure that takes all of the above indicators into account.

This chapter describes the decisions you will have to make each period. Before making dramatic changes, you should try to get a feel for the behavior of the market. Do not jump hastily to conclusions and bear in mind that obvious solutions may be based upon an incomplete analysis. To reach more robust decisions, use the information from market research studies to analyze your situation and past competitive behavior.

### 2.1 Production

Each period, you are responsible for submitting a production plan for each of your marketed brands. In the case of a relatively unsuccessful brand you may also decide to decrease the inventory, by selling all or part of it to a trading company.

The Production department is working for several divisions of your company, and can thus be viewed as a highly flexible external supplier. As a consequence, you are not concerned about manufacturing investments, fixed costs or capacity utilization. From one period to the next, you are completely free to increase or decrease the production planning of a given product, without any penalty. The Production department will always manufacture the required quantities in the best possible conditions.

In a given period, the actual production level for each product is automatically adjusted in response to actual demand for that product, within plus or minus 20% of the production plan submitted by Marketing. The table below gives a few examples for varying situations of inventory, production plan and market demand (all numbers are in units).

	<b>Beginning Inventory</b>	<b>Production Plan</b>	<b>Potential Sales</b>	<b>Actual Production</b>	<b>Actual Sales</b>	<b>Lost Sales</b>	<b>Ending Inventory</b>
A	8 000	100 000	112 000	104 000	112 000	0	0
B	8 000	120 000	154 000	144 000	152 000	2 000	0
C	25 000	100 000	95 000	80 000	95 000	0	10 000
D	0	80 000	54 000	64 000	54 000	0	10 000

The flexibility of the Production department goes beyond automatic adjustment of production plans. The units produced are charged to the Marketing department only when they are sold to distributors. The price paid to production is called the *transfer cost*; it incorporates all costs associated with this high level of flexibility, including depreciation and fixed costs. Units produced in

excess are kept in inventory, and inventory-holding costs are charged to the Marketing department. Inventory costs per unit are calculated as a percentage of the transfer cost that can be found in the Newsletter.

The transfer cost of a given product increases with inflation. On the other hand, it decreases over time because of experience effects and economies of scale. As a rule of thumb, you can expect the transfer cost to be reduced by about 15% each time the cumulative production of a given product is doubled.

## 2.2 Pricing

In MARKSTRAT3, you must set the *recommended retail price* for each marketed brand. The retail price is the list price for consumers. The *average selling price* is the price at which you sell your product to distributors. It varies by distribution channel since different margins hold in each of the three channels, as explained in section 1.8.

Specialty and department stores tend to respect the recommended retail prices set by the firms. However, mass merchandisers use promotions or special offers to sell products that, on average, are equivalent to a discount rate of 10% off the list price. As a consequence, in absolute terms, mass merchandisers' margins are lower than those of the other two channels because the percentage margin applies to discounted prices. The table below provides a summary of retail prices, margins and discounts:

		Recommended Retail Price = \$ 400		
		Specialty Stores	Department stores	Mass Merchandisers
Actual Retail Price	\$	400	400	360
Distribution margin	%	40%	30%	30%
	\$	160	120	108
Selling price	\$	240	280	252
Transfer cost	\$	123	123	123
Unit contribution before marketing	\$	117	157	129

Dumping is strictly forbidden in the MARKSTRAT3 world, therefore the recommended retail price must be set such that the lowest selling price of a product is higher than its transfer cost. Finally, price increases or decreases greater than 30% in one period are highly discouraged as they often result in negative market reactions. On one hand, an excessive price increase is usually not accepted by consumers who may react strongly and stop purchasing this brand. On the other hand, an excessive price decrease will result in a proportional cut in the distributors' margin, and your salespeople may have a hard time finding distributors for the brand. A message will warn you when such decisions are made. *If you ignore the warning, the recommended retail price will be automatically adjusted up or down to stop such adverse reactions.*

## 2.3 Communication

You must make several communication decisions each period. Firstly, you should determine the advertising budget allocated to each brand. This budget will be used to purchase media space and time. Secondly, you must specify the budget allocated to advertising research. This finances the creative work, media selection, or other activities conducted by advertising agencies which improve the quality of your message. In past years, companies have devoted on average 7% of their total communication expenditures to advertising research. Advertising research will usually make your advertising more effective, and is especially important when you introduce a new brand or when you look to reposition an existing one. In these last two instances, higher percentages are recommended (in the range of 15 to 20%).

Thirdly, you are required to specify which segments should be targeted with your advertising. In this way, the advertising agency will select the most appropriate media vehicle for the targeted segments.

Finally, you must define perceptual advertising objectives for each brand. This enables you to convey a *perceptual message* and emphasize, for instance, how light a given brand is, or how powerful another one is. Section 5.3 is devoted to brand positioning through advertising and explains how to set perceptual objectives.

## 2.4 Sales Force

Your sales force is organized in three groups, each group is specialized to call on the stores of a single distribution channel. The Marketing department must specify the number of salespeople in each group. Salespeople may be reallocated from one distribution channel to another at no cost. However, hiring or firing costs will be automatically charged to your department when the total number of salespeople increases or decreases.

Each of your sales representatives carries the entire line of products marketed by your firm. However, you must instruct them on how to allocate their time and efforts across the various brands in your portfolio.

## 2.5 Ordering Market Research Studies

One of your decisions will be to order market research studies. All studies are ordered at the beginning of a period and are conducted by a specialized research firm during that period. The results are delivered with your annual report at the end of the period.

All studies you purchase will be made available on paper and/or on screen. The information provided is relevant to the market situation during the analyzed period, with the exception of the market-forecast study. The list of available studies is given below and all studies are detailed further in section 3.3.

- Consumer survey
- Consumer panel
- Distribution panel
- Semantic scales
- Multidimensional scaling
- Competitive advertising estimates
- Competitive sales force estimates
- Industry benchmarking
- Advertising experiment
- Sales force experiment
- Market forecast
- Conjoint analysis

All studies except *Industry benchmarking* apply specifically to either the Sonite or Vodite market. Consequently, a maximum of 23 different studies may be ordered each period.

## 2.6 Research and Development

The Marketing department is responsible for initiating research and development projects. Making R&D decisions is a crucial task because: (1) existing products will probably have to be improved during their lifetime, so as to suit the changing needs of consumers; (2) new products may have to be designed in order to target untapped segments in existing or new markets.

When launching a new R&D project, the Marketing department must specify the desired characteristics for the new or improved product, including the target transfer cost. You must also allocate a budget to each project. Then, the R&D department is responsible for conducting the actual research and development work. Section 5.5 is devoted to the interface between the Marketing and Research & Development departments.

## 2.7 Marketing Budget

Each period, the Marketing department is allocated a budget to cover its expenses as shown in the table below:

ADVERTISING	SALES FORCE	R & D	MARKET RESEARCH
↓	↓	↓	↓
<ul style="list-style-type: none"> <li>• Advertising Media</li> <li>• Advertising Research</li> </ul>	<ul style="list-style-type: none"> <li>• Operating Cost</li> <li>• Hiring &amp; Training Costs</li> </ul>	<ul style="list-style-type: none"> <li>• Development Budgets</li> </ul>	<ul style="list-style-type: none"> <li>• Study Costs</li> </ul>

	• Firing Costs		
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Your marketing budget is linked to the success of the department, being equal to 40% of the net contribution generated in the previous period. However, there is a maximum level above which resources are reallocated to other divisions of the company, so as to maximize the return on investment at the corporate level. Similarly, there is a minimum budget level for each period, whereby headquarters may effectively subsidize your division, if you are not generating sufficient contribution internally, so as to let your division continue operations.

In general, your budget for a given period will be between \$7,000,000 and \$20,000,000. You will have to work within this given budget! If total spending exceeds the allocated budget for a period, expenses will be automatically cut, starting with advertising expenditures.

Note that if your objective is to maximize your return on investment, you should not necessarily spend your entire budget in every situation. If you perform outstandingly, you may be granted a large budget; however, spending it completely may be a waste of money.

## 3.

## Your Annual Report

You will receive your annual report at the beginning of each decision round. The annual report provides you with the results of the period that has just ended. For instance, you will be making decisions for period 5 based on the annual report of period 4. The annual report is composed of three separate documents: the *Industry Newsletter*, the *Company Report* and the *Market Research Studies*. While reading this chapter, we suggest that you refer to the sample annual report included in chapter 7 of this manual.

### 3.1 Industry Newsletter

The Industry Newsletter provides general and financial data on the industry, on the competing firms and on marketed brands. This is publicly held information; i.e. all competing firms have access to the same Industry Newsletter. The Newsletter consists of three or four sections, depending on the availability of Vodite brands.

- **Stock market and key performance indicators** – This section provides comparative charts with various financial and marketing performance indicators such as: market shares, sales, contributions, stock price indices and return on investment ratios. All numbers are given in absolute values and in percentage change from the previous period.
- **Economic variables and costs** – The evolution of economic variables such as the inflation rate and GNP growth rate are highlighted in this part of the Newsletter. Various costs relative to the market research studies, salespeople, and inventory are also provided.
- **Information on Sonite market** – This section details the physical characteristics and price of all marketed Sonite products, and it indicates which brands have been recently improved upon or introduced. It also provides the market shares, in units and in dollar value, the volume sold and the retail sales of all Sonite products. Volumes and retail sales are given in absolute values and in percentage change from the previous period.
- **Information on Vodite market** – The same data as above is provided for any Vodite products on the market.

### 3.2 Company Report

The Company Report provides confidential company information. You and your team members are the only ones who have access to the information disclosed in your Company Report, with the exception of data given in the *Industry Benchmarking* study. The company report is comprised of the following five sections:

- **Company results** – The *Company Scorecard* is included in this section. It provides various financial and marketing performance indicators such as: market shares, sales, contributions, stock price index and return on investment ratios. All numbers are given in absolute values, in percentage change from the previous period and in percentage change since period 0, when you started managing the company. This section also incorporates the *Company Performance* statement, illustrated in Figure 2.

## Company Performance

	Unit	Total	Sonite market	Vodite market
<b>Sales</b>				
<b>Units sold</b>	<b>U</b>	<b>431 617</b>	<b>405 606</b>	<b>26 011</b>
Average retail price	\$	454	407	1 191
Average selling price	\$	300	270	768
<b>Revenues</b>	<b>K\$</b>	<b>129 662</b>	<b>109 686</b>	<b>19 976</b>
<b>Production</b>				
Units produced	U	585 328	505 328	80 000
Cost of goods sold	K\$	-59 998	-51 519	-8 479
Inventory holding cost	K\$	-2 783	-1 375	-1 408
Inventory disposal loss	K\$	-9 616	-1 198	-8 418
<b>Contribution before marketing</b>	<b>K\$</b>	<b>57 263</b>	<b>55 593</b>	<b>1 670</b>
<b>Marketing</b>				
Advertising expenditures	K\$	-7 000	-5 000	-2 000
Advertising research expenditures	K\$	-700	-600	-100
Sales force	K\$	-1 900	-1 601	-298
<b>Contribution after marketing</b>	<b>K\$</b>	<b>47 663</b>	<b>48 392</b>	<b>-728</b>
<b>Other expenses</b>				
Market research studies	K\$	-1 038	-538	-462
Research and development	K\$	-950	-450	-500
Interest paid	K\$	0		
Exceptional cost or profit	K\$	-3 100		
<b>Net contribution</b>	<b>K\$</b>	<b>42 575</b>		
<b>Next period budget</b>	<b>K\$</b>	<b>17 050</b>		

**Notes:**

- *Average retail price*: Average price paid by consumers.
- *Average selling price*: Average retail price – distributors' margins.
- *Revenues*: Number of units sold x Average selling price.
- *Units produced*: Number of units manufactured by the Production department.
- *Cost of goods sold*: Number of units sold x Average unit transfer cost.
- *Inventory holding cost*: Units in inventory x Unit transfer cost x Inventory holding cost in %.
- *Inventory disposal loss*: Loss incurred when selling inventory to a trading company.
- *Contribution before marketing (CBM)*: Revenues – cost of goods sold – inventory costs – inventory disposal loss.
- *Contribution after marketing (CAM)*: CBM – (advertising + advertising research + sales force expenditures).
- *Interest paid*: Interest paid on loans granted in previous periods.
- *Exceptional cost or profit*: Exceptional items such as brand withdrawal costs.
- *Net contribution*: CAM – (market research studies + R&D + interest + exceptional cost or profit).
- *Next period budget*: 40% of net contribution; minimum = M\$ 7; maximum = M\$ 20.

**Figure 2 – Calculation of Company Performance**



- **Brand results** – This section provides the *Contribution by Brand* chart, detailed in **Figure 3**. It also gives the total market share of each brand, and its distribution coverage, i.e. the number of stores carrying the brand.

<b>Contribution by Brand</b>					
<i>(Sonite brands)</i>					
Sonite Brands	Unit	Total	SEAL PSPR2	SEXY PSBU1	SEFA PSHI2
<b>Base R&amp;D project</b>					
<b>Sales</b>					
Units sold	U	405 606	225 328	35 685	144 593
Average retail price	\$	407	394	341	444
Average selling price	\$	270	262	220	296
Revenues	K\$	109 684	59 035	7 850	42 799
<b>Production</b>					
Units produced	U	505 328	225 328	120 000	160 000
Current unit transfer cost	\$	-	121	165	125
Average unit transfer cost	\$	127	121	165	127
Cost of goods sold	K\$	-51 518	-27 264	-5 888	-18 366
Units in inventory	U	110 547	0	84 315	26 232
Inventory holding cost	K\$	-1 374	0	-1 112	-262
Inventory disposal loss	K\$	-1 198	0	-1 198	0
Contribution before marketing	K\$	55 593	31 771	-348	24 170
<b>Marketing</b>					
Advertising expenditures	K\$	-5 000	-500	-2 250	-2 250
Advertising research expenditures	K\$	-600	-50	-50	-500
Sales force	K\$	-1 600	-809	-197	-594
Contribution after marketing	K\$	48 391	30 411	-2 846	20 826

**Notes.**

- *Average retail price*: Average price paid by consumers.
- *Average selling price*: Average retail price – distributors' margins.
- *Revenues*: Number of units sold x Average selling price.
- *Unit transfer cost*: Price paid by Marketing to Production for each unit sold.
- *Cost of goods sold*: Number of units sold x Average unit transfer cost.
- *Units in inventory*: Number of units produced but not sold at end of a period.
- *Inventory holding cost*: Units in inventory x Unit transfer cost x Inventory holding cost in %.
- *Inventory disposal loss*: Loss incurred when selling inventory to a trading company.
- *Contribution before marketing (CBM)*: Revenues – cost of goods sold – inventory holding costs – inventory disposal loss.
- *Contribution after marketing (CAM)*: CBM – (advertising + advertising research + sales force).

**Figure 3 – Calculation of Brand Contributions**

- **Research & Development results** – This section gives the list of all R&D projects launched in the previous periods and provides the following details for each project.
  - The physical characteristics of the future product. This data is given in the relevant units for each characteristic: kilograms for weight, watts for power, etc.
  - The *current* and the *minimum realistic base cost*. The base cost is the transfer cost at which the future product will be manufactured. It is calculated on the basis of an initial production batch of 100,000 units. The actual transfer cost will be higher than the base cost if the cumulated production is below 100,000 units, and lower than the base cost if the cumulated production is above 100,000 units. The minimum realistic base cost is the cost below which it is *impossible* to manufacture the future product (at least the first batch of 100,000 units). This minimum cost takes into account the purchase of raw materials, the labor required to manufacture the product and the depreciation of investments to be made in production processes.
  - The total cumulative budget invested so far in the project. Note that a project may be completed over several periods as explained in chapter 4.8.
  - The budget required to finish the project. This information is only relevant if the project is not completed. It indicates the additional budget that must be invested to ensure that the project will be completed in the following period. Note that you may attempt to finish the project with a lower budget, but its successful completion is not guaranteed.
  - The period at which the project was completed (if it was).
- **Cumulative results** – Cumulative results on sales, production and marketing are provided in this section. It includes cumulative data since period 0, when you started managing your firm, for all brands introduced and marketed since that time. Cumulative company performance results are also provided in the same format as the one illustrated in figure 4.
- **Decision summary** – This section recalls the decisions that your team took at the beginning of the current period: brand management, sales force management, R&D projects and the market research studies purchased. In period 0, the previous management team made these decisions.

### 3.3 Market Research Studies

You may purchase up to 23 Market Research Studies each period. The list below provides a brief summary of the information provided by each study.

**Industry benchmarking** – The benchmarking report compiles general information from annual reports about each of the MARKSTRAT competitors. The same data is provided in a common format for all companies, in such a way as to allow you to compare competitive performance. The data provided includes sales, production costs, marketing expenditures and other expenses.

**Consumer survey** – The consumer survey provides information on: (1) the level of *brand awareness* – percentage of potential consumers in each segment who spontaneously recall a given brand name; (2) *brand purchase intentions* – percentage of potential consumers in each segment who intended to buy a given brand; (3) *shopping habits* – percentage of potential consumers in each segment who prefer to shop in a given distribution channel.

**Consumer panel** – This study provides the total unit sales for each segment; the relative size of each segment ; and the market shares, based on units sold, for each brand in each segment.

**Distribution panel** – The distribution panel gives information on the total sales in units in each distribution channel; the relative size of each channel; and the market shares, based on units sold, for each brand in each channel. A second chart provides the distribution coverage for each brand in each channel, i.e. the percentage of stores carrying a given brand.

**Semantic scales** – Semantic scales describe how consumers *perceive* the marketed brands. Respondents are asked to rate each brand along each physical characteristic on a scale from 1 to 7 according to the way they perceive the brand. For instance, a brand rated 2.3 on the Power scale is perceived as being less *powerful* than a brand rating 5.5 on the same scale. The study also

provides the *ideal* ratings of each segment on each physical characteristic. Finally, it provides the importance of each characteristic, in other words, the weight each characteristic takes in the buying decision. Additional charts and graphs are available on-line. For instance, one can obtain a graph representing the relationship between physical characteristics and perceptions, or a graph representing the evolution of customer needs since the beginning of the simulation.

**Multidimensional scaling of brand similarities and preferences** (Perceptual Map)– This is one of the most important studies that may be purchased. It provides a map showing the similarities and differences between marketed brands on three different dimensions. Two brands close to one another on the map are perceived as being similar. Inversely, two brands located in different quadrants are perceived as being significantly different; for instance, one may be perceived as less economical or as more convenient. Further information on perceptual maps and on their interpretation will be given in chapter 5.

**Competitive advertising estimates** – The competitive advertising study estimates total advertising expenditures for each competitive brand by segment. (This study also provides the average advertising spending by brand and by firm, in total and for each segment).

**Competitive sales force estimates** – This study estimates the number of salespeople allocated to each competitive brand, by distribution channel and in total. (It also provides the average sales force size by brand and by firm, in total and for each channel).

**Advertising experiment** – This study estimates the effects of increasing your advertising budget by a given percentage. It projects brand awareness and market share for each of your brands, if for example the advertising budget had been increased by 20% – assuming no change in other competitive actions. The resulting change in *contribution after marketing* is also provided. An increase in contribution for a given brand shows that you would have benefited from a higher level of advertising spending for this brand.

**Sales force experiment** – The sales force experiment predicts the increased distribution coverage and market share for each of your brands, if the number of salespeople had been increased. For example, you may test the impact of adding 10 more salespeople – assuming no change in other competitive actions. The resulting change in *contribution after marketing* is also provided. An increase in contribution for a given brand shows that you would have benefited from allocating more salespeople to this brand.

**Market forecast** – This research study estimates the expected size in units and the growth rate of each segment for the next period as well as in five years time. These estimates are based on the current market situation and assume that no substantial changes such as brand introductions, or significant price increases or decreases will take place in the future. Consequently, depending on what actions are actually taken by your firm and your competitors, the resulting market size will either be higher or lower. For the new Vodite market, the estimates are based on interviews of potential consumers and are less accurate and often turn out to be optimistic.

**Conjoint analysis** – This study is rather complex and expensive and is therefore not always made available to students. It provides the *utilities* – a real number between from 0 to 1 – of various levels for each of the four most important physical characteristics and for each segment. High utilities, for instance close to 1, demonstrate high consumer preferences for the corresponding physical levels.

## 4.

## Making Decisions

### 4.1 The Simulation Process

At the beginning of each decision round, you will be given your firm's annual *Company Report*, the *Industry Newsletter* and the *Market Research Studies* ordered in the previous period. The team should start by analyzing this information and agree on a strategy for the company. Once you have determined your marketing objectives, you will make decisions for the next period.

At the end of the decision round, your decisions will be submitted to the program administrator, together with the decisions of your competitors. The MARKSTRAT3 software model will compile the input and generate the results of that period. These results will be reflected in your next *Company Report*, a new *Industry Newsletter* and new *Market Research Studies*.

After examining this new set of information, the team will review the objectives and decide whether to maintain or adapt the strategy. Your team will then make decisions for the next period, following this cycle of decisions and results for six to twelve simulated years.

### 4.2 Group Dynamics

During the first set of decisions, it is essential that you rapidly develop a good working relationship within your group. In the early stages it is important that each team member be involved in the discussion of all issues and that everyone develops a grasp of the business situation. For these reasons, try to avoid the inclination for each member to concentrate in his or her area of expertise.

Later in the simulation, everybody will have developed a common understanding of the strategic issues. At the same time, the management of the firm will become more complex in terms of the number of brands, the R&D interface, the market developments, and the intensity of competition. Period 3 or 4 is usually a good time for each individual to start concentrating on some specific area of responsibility. In this way, the group will learn to work efficiently, and each of its members will benefit equally from the MARKSTRAT3 experience.

### 4.3 MARKSTRAT3 Main Screen

The MARKSTRAT3 main screen is shown in Figure 4. The six large buttons in the *top bar* labeled *Decisions*, *Report*, ..., *Interface* give you access to the six MARKSTRAT3 modules.

The three modules *Report*, *Newsletter* and *Mkt. Studies* provide the same information as that printed in your annual report, plus a few additional graphs. The *Analysis* module provides a comprehensive set of graphs and tools to help you analyze the market and competitive offerings. The *menu bar*, located just below the top bar, allows access to menus specific to each module.

With the *Interface* module you may open, close, save, backup or restore files. You should use this module to load the latest results from the instructor or to save your decisions on diskette for the instructor. (Furthermore, you may interface with the Bank or with the Corporate finance department to get loans or budget increases).

The *Decisions* module gives you access to the five main *dialogue boxes* which you should use to make your decisions: *Brand Portfolio*; *Production, Price & Advertising*; *Sales Force & Distribution*; *Market Research Studies*; and *Research & Development*. Each dialogue box can be activated by first clicking on *Decisions* and by then clicking on the corresponding button.

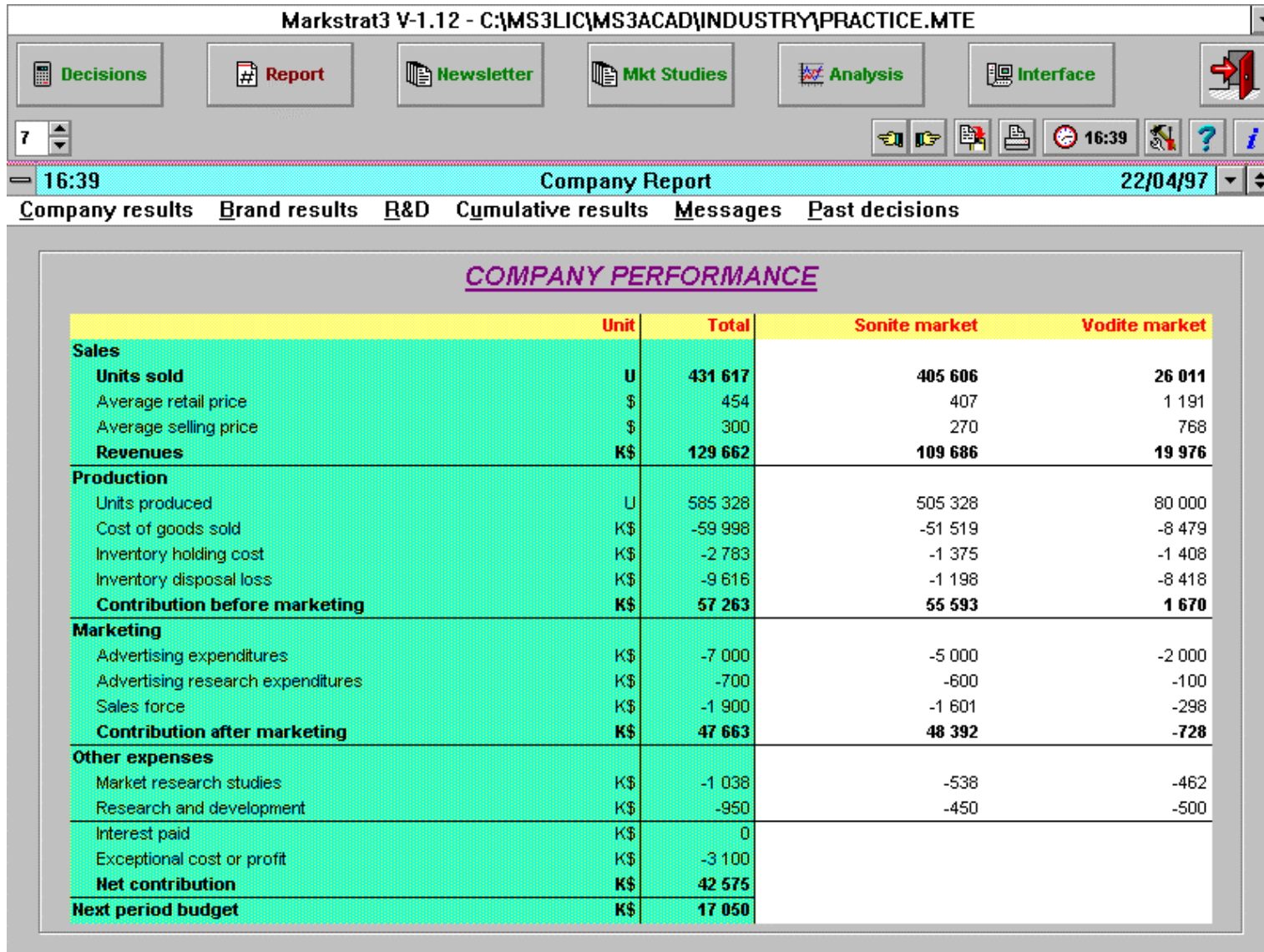


Figure 4 – MARKSTRAT3 Main Screen

## 4.4 Brand Portfolio Decisions

The Brand portfolio dialogue box is displayed in Figure 5. It enables you to introduce new brands and to modify or withdraw existing ones.

### Introducing a new brand

After clicking on the *Introduce new brand* button, a dialogue box appears that will help you bring a new Sonite and Vodite brand to market. The name of the new brand must be entered using the naming conventions discussed in section 1.5. The name of a completed R&D project –giving the technical specifications for producing the brand– must be entered in the column *R&D project*, or it can be selected directly in the list of available R&D projects, which is provided for reference. Note that the specifications of each project can be obtained by clicking on the *View R&D report* button.

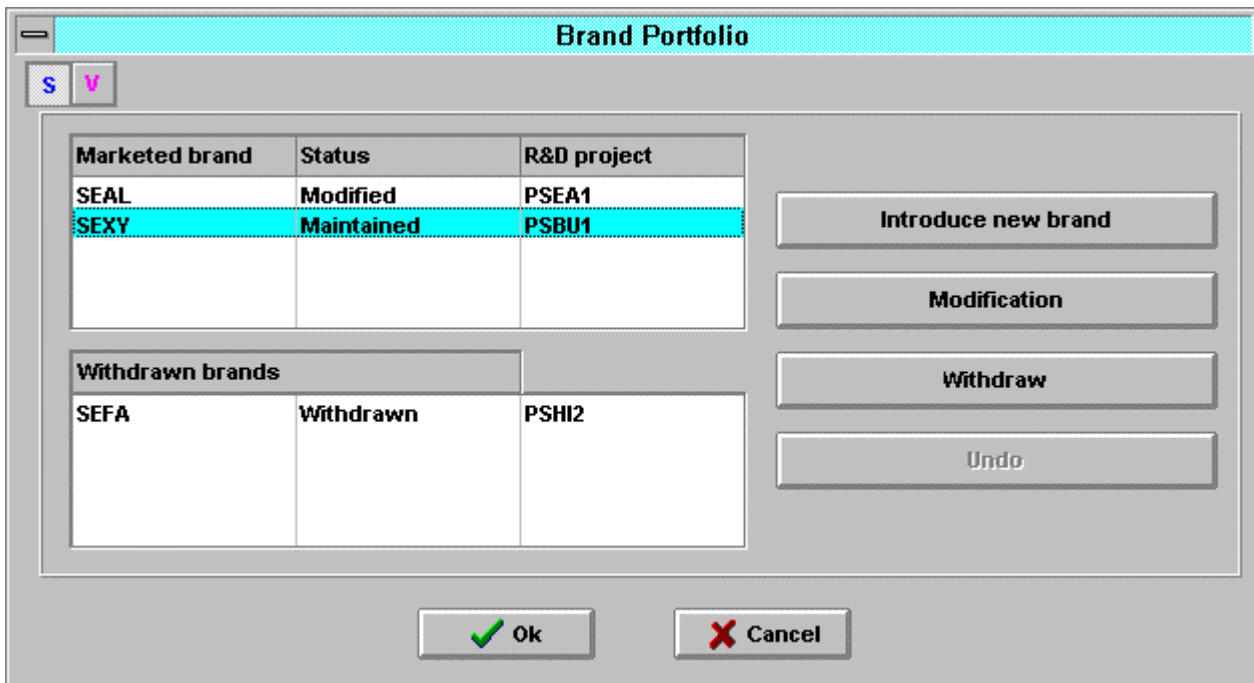


Figure 5 – Brand Portfolio dialogue box

The *Undo* button can be used to remove a new brand added to the portfolio that you subsequently decide not to launch. Select the new brand and click on the *Undo* button to remove it from the *Marketed brands* list.

### Modifying an existing brand

After selection of the brand to be modified, click on the *Modification* button and a dialogue box appears. The R&D project name corresponding to the new product specification must be selected among the available R&D projects completed in prior periods. Naturally, the name of a modified brand does not change; otherwise, it would be a brand introduction.

The *Undo* button can be used to cancel the change made to a brand using the *Modification* button. Select the modified brand and click on the undo button to retrieve the project on which the brand was based in the previous period.

### Withdrawing a brand

The *Withdraw* option removes a brand that was marketed in the previous period. The brand will no longer be marketed or distributed to consumers. Select the brand to be removed in the *Marketed brands* list and click on the *Withdraw* button; the brand moves to the *Withdrawn brands* list.

If inventories remain when a brand is withdrawn from the market, they are sold to a trading company at a given percentage of the transfer cost and a loss is incurred. A brand that was marketed in the past and withdrawn from the market may not be reintroduced later in the simulation.

The *Undo* option enables the team to cancel a brand withdrawal. Select the name of the withdrawn brand and then click on *Undo*.

## 4.5 Production, Price & Advertising

The Production, Price & Advertising dialogue box is displayed in Figure 6. Clicking on the S or V button top left switches between Sonite brands and Vodite brands. The brands that you have chosen to market next period are listed on the tabs at the bottom of the screen. Click on the tab of the brand to be displayed and enter your decisions on production, price, and advertising.

**Production, Price and Advertising**

S V **Production, Price & Advertising - SEAL** ?

Product specifications	Last period	This period	% Change
Base R&D project	PSPR2	PSPR2	
Brand production level (KU)	200	150	-25
Inventory sold to trading Co (KU) (current inventory : 0 KU)	0	0	

**Pricing**

Parameter	Last period	This period	% Change
Recommended retail price (\$)	400	419	4.8

**Advertising**

Parameter	Last period	This period	% Change
Advertising media budget (K\$)	500	750	50
Advertising research budget (K\$)	50	100	100

**Targeted segments (%)**

Total	Bufs	Singles	Pros	HiEarner	Others
100	5	5	80	5	5

**Perceptual objectives**

No objectives  
 MDS dimensions  
 Semantic scales

Dimension 1	Objective	Dimension 2	Objective
Performance	12	Convenience	-5

SEAL SEXY SEFA

Figure 6 – Production, Price & Advertising dialogue box

- **Production** – Enter a production plan based on your sales forecasts for the upcoming period, taking into account any units left in inventory. The production department will adjust your plan by plus or minus 20% to respond to actual market demand. If you are holding a high level of inventory, you can set the production plan to 0; but in this case, no automatic adjustment is possible.

Alternatively, you can decide to sell part of the inventory to a trading company which will buy it at a given percentage of its value; this percentage can be found in the Newsletter and is usually between 20% and 50%. This operation will generate a loss equal to the remaining value of the stock sold to the trading company.

- **Price** – Enter the *recommended retail price* in dollars. The list price of the brand, this corresponds to the price usually paid by consumers, except for shoppers using mass merchandisers which practice a 10% discount.
- **Advertising** – Enter the *Advertising media budget*, to purchase media space, and the *Advertising research budget*, to improve the quality and the effectiveness of your advertising. Both budgets must be given in thousands of dollars. Then, allocate your advertising budget to the various market segments, by indicating the proportion of the budget targeted to each segment. The percentages must, of course, add to 100%.
- **Perceptual objectives** – When looking to reposition a brand with advertising, as explained in section 5.3, you need to inform the advertising agency of the desired perceptual objectives for the brand. This is a complex decision that you will certainly not have to make in the first period. You can skip this paragraph until you have reviewed the appropriate conceptual session with your Instructor, or until you have read and understood chapter 5.

If the advertising objective is simply to raise brand awareness without changing the perception of the brand, simply check the *No objectives* option.

Perceptual objectives may be chosen on any two communication dimensions. They may be provided either in terms of semantic scales or in terms of the composite dimensions given by the multidimensional scaling study. Just click on the scale of your choice: *MDS dimensions* or *Semantic scales*. Then, your chosen dimensions can be selected in boxes *Dimension 1* and *Dimension 2*. Finally, the levels objective for each desired position on each dimension must be entered. For the scales based on the multidimensional scaling study, these numbers should be between -20 and +20. For the semantic scales, the range is from 1 to 7, with one decimal point.

These perceptual objectives convey primarily qualitative information for the design of the advertising platform and copy (for example, to emphasize the light weight nature of the product). The numeric representation of these perceptual objectives is used only for communication purposes.

The communication may also be focused on a single dimension (a unique selling proposition). In this case, pick *None* in the list box of *Dimension 2* to indicate that the communication is on a single dimension indicated in the box of *Dimension 1*.

## **4.6 Market Research Studies**

The Market Research Studies dialogue box is displayed in Figure 7. Simply checking the boxes corresponding to the studies desired may purchase market studies. The cost of these studies appears as the boxes are checked.

When you order a study, the research is performed during the next simulated period and the results are made available at the end of the period. This information is available for the following period's decisions.



Study Titles	Order	Cost (K\$)
Industry benchmarking	<input checked="" type="checkbox"/> All markets	39
Consumer survey	<input checked="" type="checkbox"/> Sonite <input type="checkbox"/> Vodite	78
Consumer panel	<input checked="" type="checkbox"/> Sonite <input type="checkbox"/> Vodite	130
Distribution panel	<input checked="" type="checkbox"/> Sonite <input type="checkbox"/> Vodite	78
Semantic scales	<input type="checkbox"/> Sonite <input checked="" type="checkbox"/> Vodite	13
Multidimensional scaling	<input checked="" type="checkbox"/> Sonite <input type="checkbox"/> Vodite	46
Market forecast	<input checked="" type="checkbox"/> Sonite <input checked="" type="checkbox"/> Vodite	52
Competitive advertising	<input checked="" type="checkbox"/> Sonite <input type="checkbox"/> Vodite	39
Competitive sales force	<input checked="" type="checkbox"/> Sonite <input type="checkbox"/> Vodite	20
Advertising experiment	<input checked="" type="checkbox"/> Sonite <input type="checkbox"/> Vodite	33
Sales force experiment	<input type="checkbox"/> Sonite <input type="checkbox"/> Vodite	0
Conjoint analysis	<input checked="" type="checkbox"/> Sonite <input type="checkbox"/> Vodite	46
<b>Total cost (K\$)</b>		<b>574</b>

Buttons:

**Figure 7 – Market Research Study dialog box**

Some of the studies may apply only if there are brands marketed during the period (e.g., the consumer panel for the Vodite market). You can use the Benchmarking study to anticipate whether competition will launch new brands. Moreover, if you order these studies and if no brands were marketed in the period, you will not be charged for them.

## 4.7 Sales Force and Distribution

The Sales Force & Distribution dialog box is displayed in Figure 8. Your company's sales force is organized by distribution channel. You have to make two decisions: (1) how many salespeople to assign to each distribution channel; and (2) how to allocate the sales force effort across brands.

- **Number of salespeople** – Enter the number of salespeople assigned to each distribution channel. Changes in the number of salespersons are expected to have an influence on the distribution coverage of your brands. Since your sales force is knowledgeable about all your products, you can modify the allocation of salespeople across distribution channels at no cost.
- **Percentage of efforts** – Instruct your salespeople in a given channel on how to allocate their efforts between your firm's brands. This decision is important since some brands are targeted to segments which are more likely to purchase goods in certain distribution channels. Entering percentages in the appropriate cells makes the allocation; the percentages must add up to 100%.

The *Assistant* button can help you allocate the sales force efforts automatically, according to four predefined rules. *Equal allocation across all brands* allocates an equal percentage of effort to each brand within a channel. The three other options, *Proportional to last period's unit sales*, *retail sales* or *contribution*, are based on the previous period's results. Note that using this

	Specialty stores	Dept. stores	Mass Merchandis.	Sales Force cost
Number of salespeople	20	25	30	
SEAL	33	45	47	K\$ 834
SEXY	14	8	10	K\$ 204
SEFA	19	27	43	K\$ 612
VETI	34	20	0	K\$ 308
Total	100%	100%	100%	K\$ 1 957

Buttons:  Assistant...

**Figure 9 – Sales Force and Distribution dialog box**

feature, no sales effort will be allocated to new brands introduced during the current period. Clearly, you will need to enter some figures so that a certain amount of effort is devoted to new brands.

Lastly, the *Normalize* button automatically adjusts your inputs pro rata to total 100% in each channel.

## 4.8 Research and Development

Research and Development decisions are quite complex. It is unlikely that these decisions will be necessary during your first period. You can skip this section until you have attended the appropriate conceptual session with your Instructor, or until you have read and understood chapter 5.

The Research and Development dialog box is displayed in Figure 10. Buttons at the bottom of the window are used to *start* new R&D projects; *shelve* an incomplete project; or *continue* a project which had been temporarily suspended. The projects that your R&D department will work on next period are listed on the tabs at the bottom of the screen. Clicking on the S or V button at the top displays either Sonite or Vodite projects.

For each project, the values of the five physical characteristics for the desired future product must be entered in the corresponding cells. The range of technically feasible characteristics for each dimension is indicated in brackets. The *requested base cost* is the transfer cost that will be charged to the Marketing department for each unit of the future product, assuming a production batch of 100,000 units. You can ask the R&D department to seek the minimum transfer cost technically feasible by checking the box *Develop project at minimum base cost*. The allocated budget corresponds to the budget devoted to the project over the next period. The cumulative R&D budget is also indicated.

You can order a *feasibility study* from the R&D department for \$100,000. This study will tell you the minimum cost at which the product can realistically be manufactured, and the R&D budget required

Figure 10 – Research & Development dialog box

guaranteeing its completion at the currently requested base cost. A feasibility study takes one period, the information being provided at the end of the upcoming period in the R&D section of the company report.

Alternatively, you can initiate up to five *on-line queries*, which will give the same information as the corresponding feasibility studies, at no charge. However, these immediate results are often over-estimated by as much as 50%.

## 4.9 Checking your Decisions

Before submitting your decisions to the Instructor, it is advisable to check that the program has not discovered any mistakes in your inputs. Three sets of charts will help you verify your decisions.

- **Budget** – The budget charts provide details on how you have decided to spend your marketing budget in the upcoming period. At any time you can check your expenditures against your allocated budget. A warning message will appear if the budget is exceeded. This message should not be ignored; otherwise, the simulation will arbitrarily cut your expenditures, starting with advertising.
- **Summary** – The *Summary* button leads to five charts that provide a detailed description of all decisions made by your team.
- **Errors and Warnings** – Errors indicate corrections that should be made because of inconsistent decisions, while warnings draw attention to possible problems. In these instances, you should check your decisions carefully to make sure that all entries are correct.



## 5. Positioning and R&D

As you may expect, the market environment will change during the course of the simulation. For instance, the needs of customers will probably evolve over time. (i.e. some segments may want more powerful brands while others may expect prices to fall). To respond to these changes, companies will have to introduce new Sonite or Vodite brands, and reposition or withdraw existing ones. As marketing resources are limited, it is extremely important to adopt optimal segmentation and positioning strategies, especially because a MARKSTRAT company cannot market more than five brands in a given period in each market. Your department will be faced with the following strategic issues on market segmentation and product positioning:

- Which segments to target?
- How to design products satisfying the needs of these segments?
- How to position new brands effectively?
- How to reposition existing brands to better fit customers' needs?

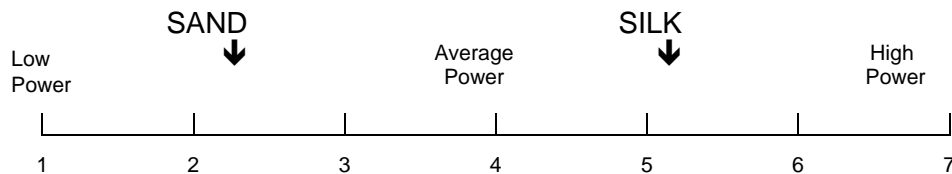
The goal of this chapter is to describe the various approaches that can be used in MARKSTRAT3 to address these issues.

### 5.1 Semantic Scales & Multidimensional Scaling

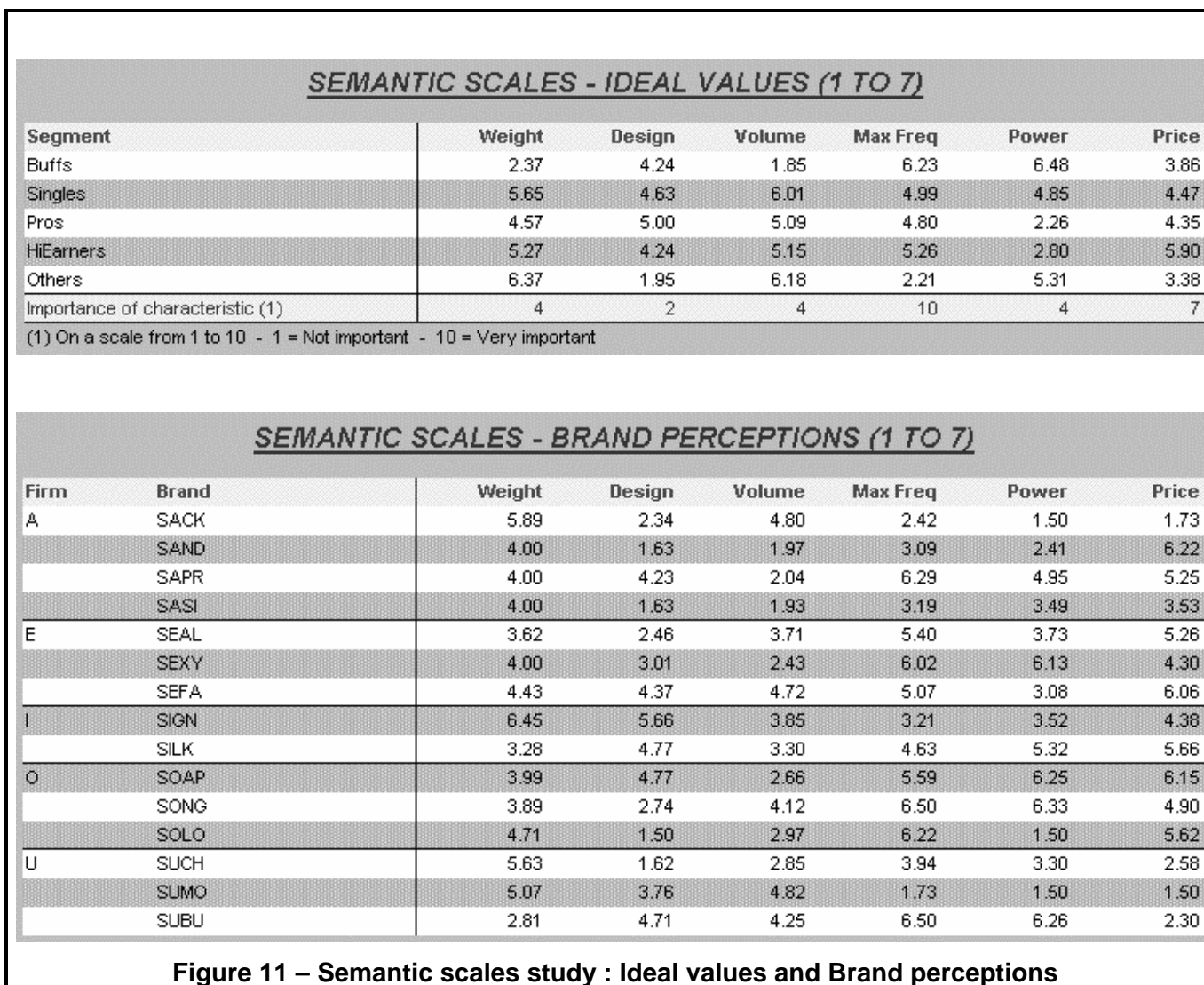
Technical experts can easily classify the marketed brands based on objective data like technical attributes and prices. However, consumers who are about to make a purchase decision are influenced by their perceptions of the brands available on the market rather than by the actual features and properties of these brands.

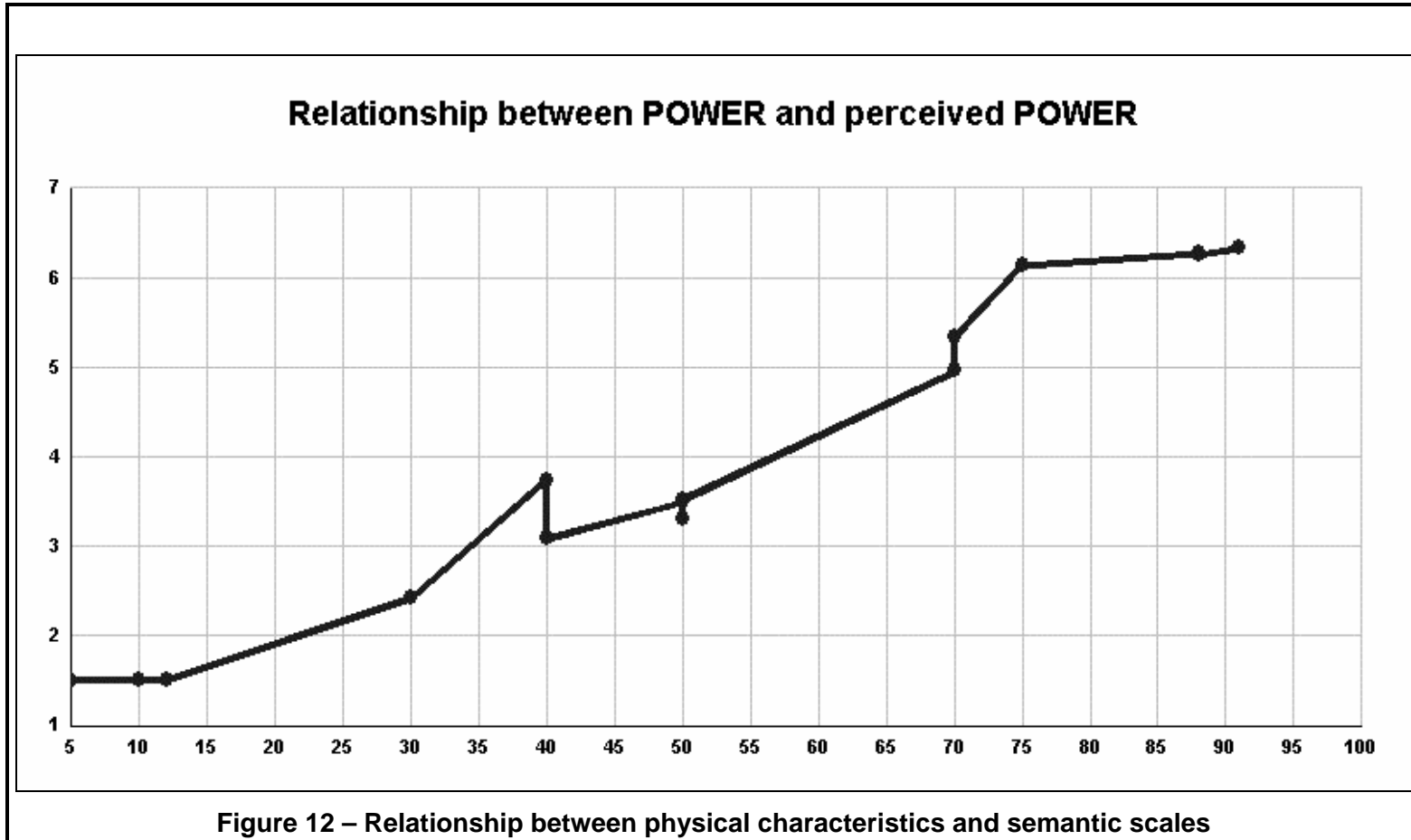
Perceptions are by definition subjective and can therefore be distorted from reality. The MARKSTRAT3 simulation provides two market research studies to assess consumers' needs and to estimate how brands are perceived: the *Semantic scales* study and the *Multidimensional scaling* study.

**Semantic scales** – This study describes how consumers perceive the marketed brands. Respondents are asked to rate the physical characteristics of each brand on a scale from 1 to 7. For instance, consumers have rated brand SAND at 2.41 on the Power scale shown below because they perceive it as being less *powerful* than brand SILK, rated at 5.32 on the same scale.



The study also provides the *ideal* rating for each characteristic and each segment. The results of this study are shown in Figure 11. By comparing the perceived ratings of your brand with the ideal ones for a given segment, you can determine if this brand fits the needs of customers in that segment. If not, you can compare its physical characteristics with those of the most preferred brands, and see how large the technical gap is. In order to bridge a significant technical gap, you will need to launch a new R&D project.





Note that even the most preferred brand may not be ideally positioned. In this case, you need to extrapolate what may be the ideal physical attributes (power, weight, ..., price) for the target customer group. The graph shown in Figure 12 is provided on-line for each physical attribute when you purchase the Semantic scales study. *Perceptions are plotted against actual attributes for all marketed brands. A graphical interpolation on this graph will let you calculate accurately which physical level is required to reach a given perceived level.*

**Multidimensional scaling of brands similarities and preferences** – This study provides a three-dimensional map showing the similarities and differences between marketed brands. This map is built through a complex process. Firstly, respondents are asked to rate pairs of marketed brands according to the similarities or differences between two brands. Secondly, complex mathematical formulas are applied to these ratings so as to build a three-dimensional map where the distance between two brands is small for similar brands –brands are close to each other on the map– and large for dissimilar brands –brands are far from each other on the map. The map is a graphical representation of the respondents’ ratings. Thirdly, experts provide an interpretation for each of the three axis. Each axis is usually attached to a composite dimension like Convenience or Performance, i.e. a combination of several physical characteristics. Finally, respondents are asked to indicate what would be their ideal position on the map.

The result of this long process is shown in Figure 13. Note that only two dimensions out of the three can be represented simultaneously. The circles *Bu*, *Si*, *Pr*, *Hi*, and *Ot* on the graph represent the ideal points of the five segments. Each circle only represents the *center of gravity* of the whole segment. The various geometric shapes (square, triangle, star...) correspond to the positioning of the brands as they are perceived by the market at the time of the study. Each brand name is clearly labeled. One specific color and shape is attributed to each firm (for example, all brands marketed by firm A are represented by red stars).

For the Sonite market, the best interpretation of the three axis are given in the table below.

Axis	Composite dimension	Relative importance	Influence of physical characteristics					
			Weight	Design	Volume	Max Freq.	Power	Price
1	Economy	High	Slight	Slight	Slight	Slight	Slight	<b>Strong</b>
2	Performance	Medium	Slight	Slight	Slight	Moderate	<b>Strong</b>	Slight
3	Convenience	Low	Moderate	<b>Strong</b>	Moderate	Slight	Slight	Slight

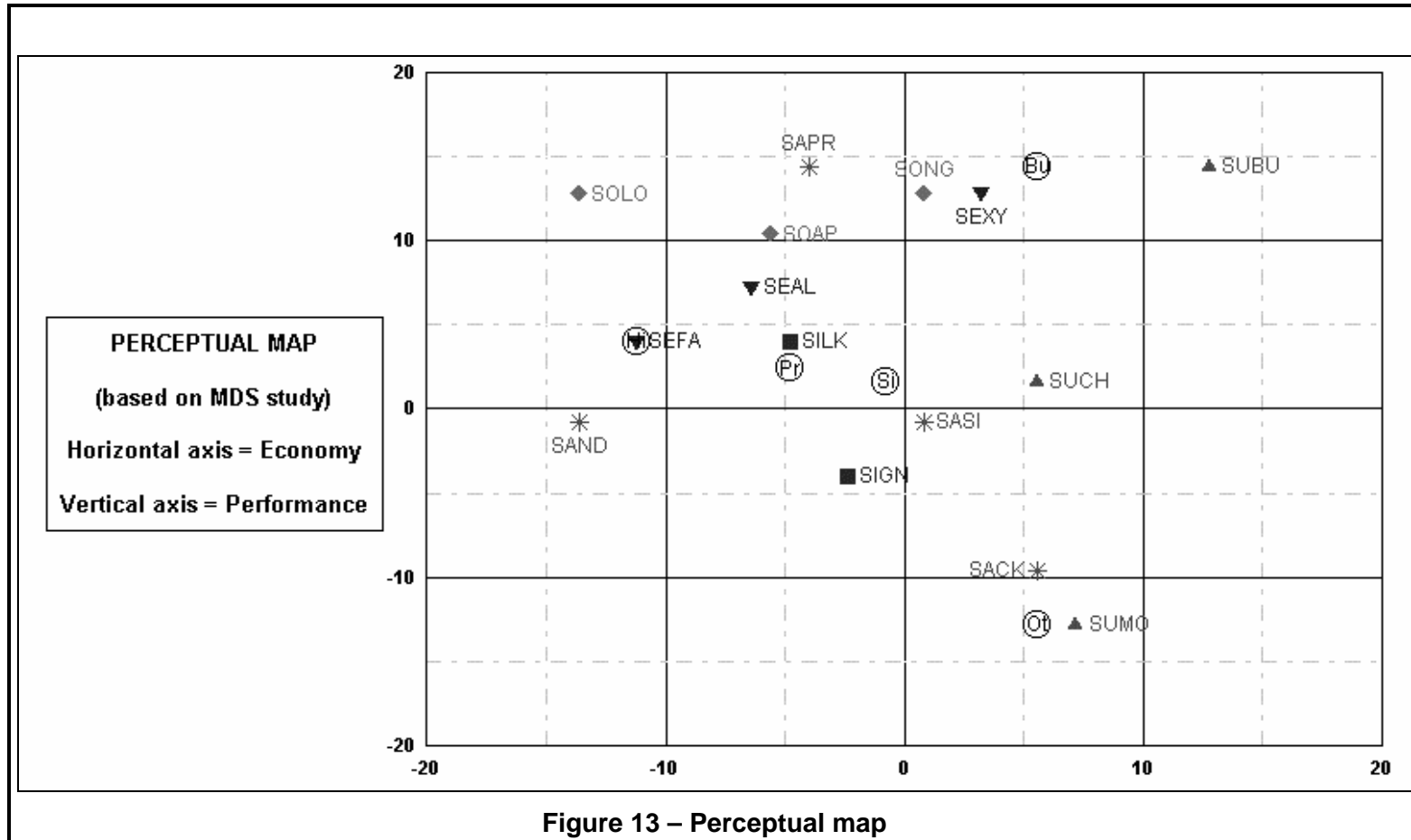
Note that for Weight, Volume, Diameter and Price, the relationship between the corresponding composite dimension and the attribute is an *inverse* function. For instance, the lower the weight, the higher the perceived convenience or flexibility.

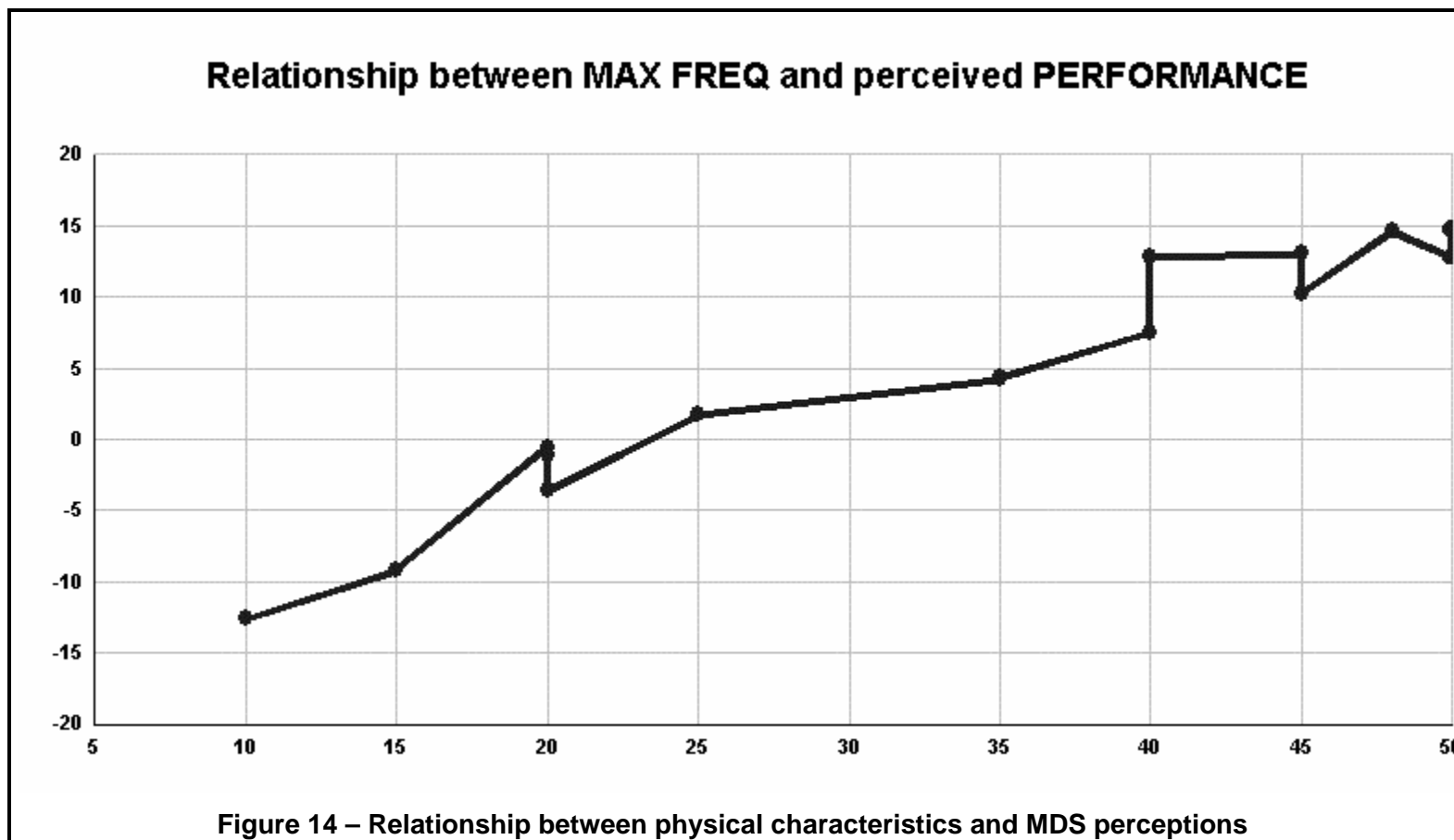
Experts have attempted to build the same table for the Vodite market and have come up with the following results, which should be used with care since no brands are marketed yet.

Axis	Composite dimension	Relative importance	Influence of physical characteristics					
			Autonomy	Max Freq.	Diameter	Design	Weight	Price
1	Efficacy	High	Slight	Strong	Slight	Moderate	Slight	Slight
2	Flexibility	Medium	<b>Strong</b>	Slight	Moderate	Slight	Moderate	Slight
3	Economy	Low	Slight	Slight	Slight	Slight	Slight	<b>Strong</b>



Finally, this complex task cannot be achieved unless a significant number of brands are marketed. The MDS study is therefore not available for the Vodite market until a sufficient number of brands are marketed.





## 5.2 Repositioning Strategies

Ideal points on the perceptual map, or on the semantic scales' chart, reflect the needs of consumers, or the price that they are ready to pay to get a product fitting these needs. *For a given brand and a given segment, the optimal position on the map is as close as possible to the ideal point of that segment.* However, there are several reasons why brands are not always ideally positioned.

- **Changing segment needs.** Segment needs evolve over time. This may be due to changes in the environment or in the consumers' value and behavior. Consequently, a brand which was well positioned when it was introduced on the market, may now be perceived as *low-performance* or as *having an unnecessarily high frequency* a few periods later. Period after period, the distance on the map between the brand and the ideal point becomes greater and greater.
- **Price pressure.** This situation is similar to the previous one. As price is the most important dimension in the Sonite market, manufacturers should expect pressure from consumers to lower prices, especially in the low-end segments. Again, if brand prices are not adjusted accordingly, the distance between the brand and the ideal point along the price or economy axis is likely to increase.
- **New target segments.** For a new market in its early stages, a good strategy may be to serve several segments with a single brand. This situation may occur if the needs of two segments are fairly similar or if one segment is too small to allow the necessary economies of scale. Then, as these needs change, or as the segment size increases, it may become necessary to position one brand closer to each ideal point.
- **Competitor entry.** In the absence of competition, one firm may successfully serve consumers with a product that is not exactly adapted to their needs. Then, if a competitor introduces a new brand that fits these needs better, it may become necessary to reposition the old brand closer to the ideal point.

In all the above situations, brands must be repositioned to adapt to new environmental conditions. Note that a brand does not always need to be repositioned on all dimensions. For instance, a two or three year old brand may now be perceived as low-performance, but as having the right convenience level. In this case, there is no reason to change the perception along the convenience dimension. Repositioning can be achieved by changing the brand's price, through advertising or via R&D.

## 5.3 Positioning with Advertising

Advertising in MARKSTRAT3 is mainly used to build brand awareness and to inform them about its physical characteristics. Advertising can also be used to reposition a brand. Although consumers' perceptions are linked to the brand's physical characteristics, they can be slightly influenced by communication. But the repositioning effect is limited; this is especially true when the brand awareness level is high, because a brand which consumers are extremely familiar with is more difficult to reposition. Beyond a certain level, brand repositioning can no longer be done by advertising alone, and it therefore becomes necessary to complete an R&D project with physical characteristics matching consumers' needs, and then to upgrade the brand. R&D projects will take at least one period to complete, while repositioning through advertising has an immediate effect.

Using advertising to reposition a product is a four step process:

1. Identify the target position on the perceptual map or on the semantic scales' chart.
2. Specify perceptual objectives for the brand when making *Production, Price & Advertising* decisions, as explained in section 4.5. You can choose to set perceptual objectives either on semantic scales or on MDS dimensions. For example, to reposition a brand closer to the *Singles* segment along dimensions Weight and Power, you must first try to estimate the future ideal

positions of that segment on these two dimensions, by looking at the chart *Ideal value evolution* in the semantic scales study; then you must select the two chosen dimensions and enter the coordinates of the point that you want to reach on the semantic scales' chart. A maximum of two dimensions may be specified to keep the message simple and effective.

3. Allocate an advertising media budget for the brand, to buy media space and time, and an advertising research budget. The effect of advertising research is two-fold. First, it makes your advertising campaign more effective, by a better selection of media and a better design of the advertising copy. Second, the repositioning impact will be higher in terms of reaching the perceptual objectives, although there will naturally be a limit as to how far and how fast advertising can change perceptions.
4. Indicate the percentages allocated to the *Targeted segments*. Obviously, the targeted segments must be coherent with the perceptual objectives. However, this decision alone is not sufficient to reposition a brand. Targeting specific segments is mainly done by selecting the most appropriate media to communicate the message, but it has little effect on the *content* of the message.

Finally, note that you will have to implement the same type of advertising program when you change the physical characteristics of a brand –by implementing a new R&D project– or when you increase or decrease its price significantly, to inform the consumers about these new characteristics and price.

## 5.4 Positioning through Research & Development

As explained before, a brand must be repositioned through R&D when the distance on the perceptual map –or on the semantic scales' chart– between the brand and the target segment's ideal position is too large. Research and development must also be used to introduce new brands, since all marketed brands must be based on R&D projects.

Using R&D to reposition a product or to introduce a new one is a four step process:

1. Identify the target position on the perceptual map or on the semantic scales' chart.
2. Estimate the physical characteristics that correspond to this target position. This can be done in at least three different ways.
  - The best solution is to use one of the two charts plotting the relationships between physical attributes (power, weight, ..., price) and semantic scales or coordinates on the perceptual map. These two charts are provided on-line, one with the semantic scales study (see Figure 12), and the other one with the MDS study (see Figure 14). A simple graphical interpolation on the appropriate chart will let you calculate quite accurately which physical level is required to reach a given semantic scale or a given MDS position.
  - These charts may not be available when only a few brands are marketed. This is likely to be true in the early stages of the Vodite market. In this case, the best solution is to simply estimate the optimal physical characteristic for a given segment from the closest brand available in the market. For instance, on the map in Figure 13, brand SUCH appears to have the appropriate Performance level for the Singles segment, and brand SUMO for Others segment.
  - The perceptual map is not available when no brands are marketed. However, you may still obtain information on segment needs from the semantic scales study. Consumers may for instance indicate that they are looking for brands with a high autonomy, rated 5.5 on the 1 to 7 scale. Your best option is to assume that there exists a *linear* relationship between autonomy in meters and semantic scales, i.e. that the lowest autonomy (5 meters) would be rated 1, and that the highest autonomy (100 meters) would be rated 7. In this case, the conversion formulas are:

$$S = [(X - LB) / (UB - LB)] \times 6 + 1 \quad \text{or} \quad X = [(S - 1) / 6] \times (UB - LB) + UB$$

where  $S$  is the target semantic scale,  $X$  is the corresponding physical level, and  $LB$  and  $UB$  are the lower and upper limits of the physical characteristic's feasible range. In the previous example, the autonomy corresponding to 5.5 is  $[(5.5 - 1) / 6] \times (100 - 5) + 5 \approx 76$ .

This method, although imperfect, allows you to make approximations until more data becomes available over time.

3. Develop an R&D project with the physical characteristics calculated above. This is done in cooperation with the R&D department as explained below.
4. Introduce a new brand or modifying an existing one. Completed R&D projects can be used to reposition existing brands by modifying the physical characteristics that are the basis of consumers' perceptions. They can also be used to introduce new brands. In both cases, a coherent advertising campaign will have to be implemented at the same time to inform consumers about these changes.

Note that this process will take at least one period.

## 5.5 Research and Development

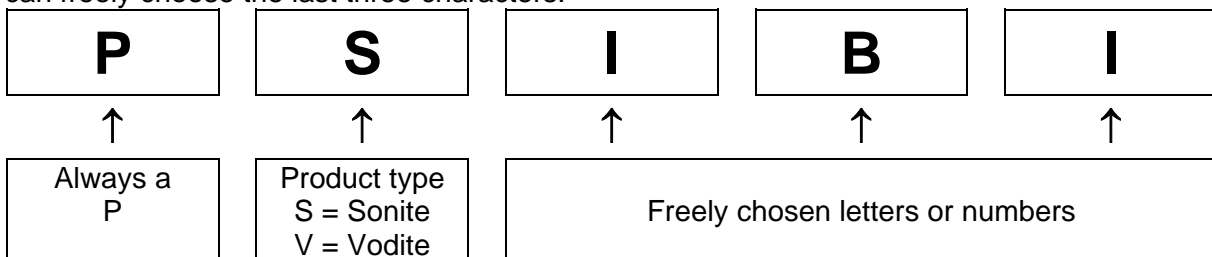
The Marketing department (you) may ask the R&D department to develop specific projects in order to improve existing products or to introduce new ones. The R&D department of the firm works for all the divisions, including yours, and operates as a profit center. Up to ten R&D projects may be ordered each period for the two markets, five Sonite projects and five Vodite projects. Over the course of the simulation, a maximum of thirty Sonite and thirty Vodite projects can be developed.

In the past, each firm has successfully completed two R&D projects on which the brands marketed in Period 0 are based. The project name starts with the letter  $P$  followed by the corresponding brand name. For instance, the R&D project corresponding to the existing brand  $SAMA$  was called  $PSAMA$ . To order a new project, the Marketing department must specify the following information:

- project name;
- technical specifications of the desired product;
- target manufacturing unit cost;
- allocated development budget.

### Project name

The names of R&D projects are made up of five characters. The first letter is always a  $P$  for project. The second letter identifies the type of product being developed,  $S$  for Sonite and  $V$  for Vodite. The firm can freely choose the last three characters.



The name of a completed project can never be reused for a new project, even if it is a minor modification of the older project.

### Technical specifications

The Marketing department must provide the physical characteristics of the desired product. Each of the five attributes must be specified, and the levels must be within the feasible range. For instance, a

Sonite project must include specifications for Weight, Design, Volume, Maximum Frequency and Power. Section 5.4 explains how to estimate the physical characteristics for product development.

## Target manufacturing unit cost

The Marketing department must also provide the target manufacturing unit cost of the desired product. Because this cost decreases over time with experience and volume of production, you initially need to specify the transfer cost of the first 100,000 units of the new product. This cost is called the *Base cost*.

Base costs have no upper limit. If you indicate a high base cost, the R&D department will have more flexibility in finding the appropriate materials and manufacturing processes. As a consequence, the project is easier to develop, and is less expensive in terms of the total development budget.

The lower limit of the base cost for a given project depends on its technical specifications: the more sophisticated a product is, the higher the minimum base cost will be. High levels of design, maximum frequency, power and autonomy increase the base cost. Similarly, low levels of weight, diameter, and volume increase the base cost. This is understandable since a small, light and powerful Sonite is more complex than a big, heavy and low power Sonite.

There are many ways to estimate the base cost of a product.

- One solution is to start from the *ideal* price of the targeted segment, i.e. the price that consumers in this segment are willing to pay for a product fitting their needs. The base cost is then obtained by subtracting the average distributors' margin, plus the minimum margin that will make the future product economically attractive for you to market. This cost will be higher than the minimum one in many cases, but at least, this method provides the highest base cost economically achievable.
- Another method is to request that the R&D department develop the project at the minimum base cost. This solution is highly attractive in terms of margins, but may be more expensive overall since the development budget is likely to be much higher than the one required with the previous solution.
- A third procedure is to do an on-line query or a feasibility study, as explained in section 4.8. On-line queries and feasibility studies provide an estimate of the base cost and of the required development budget. On-line queries are free of charge and provide results instantaneously but they generally overestimate budget requirements. Feasibility studies cost \$100,000 and take one period to complete but give fairly accurate results.

## R&D expenditures

An R&D project includes the research work necessary to develop a prototype of the desired product, and the development work necessary to find potential suppliers and set up manufacturing processes. Your department must allocate a budget to each project to cover these R&D expenses. When the project is completed, the Production department is ready to produce the first units of the product, at the transfer cost specified in the R&D report, assuming a first production batch of 100.000 units.

The budget required for the completion of a project is a function of several parameters. The budget depends on the requested physical characteristics: the more sophisticated the future product, the higher the budget. It also depends on the experience of the firm with comparable products, i.e. on the number of projects completed in the past with similar characteristics. Finally, the development budget depends on the base cost requested, as explained in the previous section. Note that the R&D department is managed as a profit center, and will not reimburse you if you allocate exceedingly high budgets.

## Responses from the R&D department

All the R&D projects which the firm has worked on in the previous periods are listed in the R&D section of the company report. The report details completed and uncompleted projects, including the two projects which existed at the beginning of the simulation. A typical report is shown in the table below.

Name	Physical Characteristics					Base Cost \$		Allocated Budget K\$	
	Weight (Kg)	Design (Index)	Volume (Dm3)	Max Freq. (KHz)	Power (W)	Current	Minimum realistic	Cumulative	Req. for completion
PSEAL	13	7	40	40	75	203	177	1 500	Avail. in P0
PSEXY	15	4	40	45	90	253	188	2 000	Avail. in P0
PSEA1	13	7	40	40	75	178	177	400	Avail. in P2
PSEX1	15	4	40	45	90	188	188	600	Avail. in P2
PSPR1	15	4	40	40	80	172	171	1 000	Avail. in P3
PSHI1	15	4	40	35	50	129	128	1 100	Avail. in P4
PSPR2	15	4	60	40	40	175	114	500	Avail. in P5
<b>PSBU1</b>	<b>15</b>	<b>7</b>	<b>40</b>	<b>40</b>	<b>75</b>	<b>177</b>	<b>177</b>	<b>850</b>	<b>Avail. in P6</b>
PSHI2	15	7	70	35	40	164	120	500	Avail. in P5
PSHI3	15	7	70	35	40	121	120	100	440
PSPR3	15	4	60	40	40	114	114	350	420

(\*) Projects written in bold font have just been completed this period.

Let's use the following example to illustrate the possible responses from the R&D department. The table below summarizes the responses for a new project with identical physical characteristics but with four different requested levels of base cost and allocated budget.

	Unit	Case A	Case B	Case C	Case D
<b>Project specifications</b>					
Weight	<b>Kg</b>	<b>17</b>	17	17	17
Design	<b>Index</b>	<b>6</b>	6	6	6
Volume	<b>Dm3</b>	<b>85</b>	85	85	85
Max Freq.	<b>KHz</b>	<b>35</b>	35	35	35
Power	<b>W</b>	<b>70</b>	70	70	70
Requested base cost	<b>\$</b>	<b>80</b>	80	<b>130</b>	130
Allocated budget	<b>K\$</b>	<b>1 000</b>	<b>300</b>	<b>1 000</b>	<b>300</b>
<b>Parameters calculated by R&amp;D at early stage of project</b>					
Normal budget for completion	<b>K\$</b>	<b>800</b>	800	<b>550</b>	550
Minimum Base Cost	<b>\$</b>	<b>110</b>	110	110	110
<b>Response from R&amp;D at end of period</b>					
Project successful	<b>Y/N</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>	<b>No</b>
Current base cost	<b>\$</b>	<b>110</b>	110	<b>130</b>	130
Minimum base cost	<b>\$</b>	<b>110</b>	110	110	110
Additional budget for completion	<b>K\$</b>	<b>N/A</b>	<b>500</b>	<b>N/A</b>	<b>250</b>

Note that the *Minimum base cost* is the same in all cases because it only depends on the technical specifications. Similarly, the *Normal budget for completion* is the same in case A and B, or in cases C and D, because it depends on the technical specifications and on the requested base cost. The project is completed only in cases A and C. For the later one, the Marketing department could decide to immediately launch a cost reduction project, so as to complete a new project with the same physical characteristics and a base cost of \$110.



Uncompleted R&D projects may be continued the following period, or may be suspended for one or several periods before being continued. If you choose to never continue the project, the budget allocated so far is lost. The technical characteristics of a continued project may not be changed from their original values. However the base cost may be changed without having to start a new project or sacrificing the money invested in the first project.

## **Brand introduction, modification or withdrawal**

R&D projects may be used as soon as they are completed to launch new brands or to modify existing ones. They may also be shelved for future use. Brand portfolio decisions are summarized below and are detailed in section 4.4.

A new brand is introduced on the market by entering a brand name which has not been used in the past. This brand name is completely independent of the code used for the R&D project. An existing brand is modified by keeping its current name and using the physical characteristics corresponding to a new completed project. Using a new brand name will facilitate the product's positioning, but the brand awareness will have to be completely built from scratch. Using an existing brand name makes its repositioning more difficult, since consumers are familiar with the brand at its previous position. However, as the awareness level is maintained, the brand's purchase intentions are likely to be higher than with a new brand.

The same product can be marketed under different names. The presence of multiple brands targeted at the same segment is a good strategy to build barriers to entry of new brands by competitors. A company may also market multiple brands based on the same project to different segments which are willing to pay different prices while having similar technical needs.

When a brand is modified, the Production department will immediately start producing the new version of the product. Obsolete inventories are sold by the Production department to a trading company at a fixed percentage of their value, usually 80%. This company will then export the old products outside the MARKSTRAT3 world. Consequently, a loss of x% (100% - the given percentage) of the inventory value is charged to the Marketing department. The same rule applies if inventories remain when a brand is withdrawn from the market. For example, if the Marketing department decides to modify or withdraw brand SEXY in **Figure 3**, the loss would be calculated as follows:

$$84\,315 \text{ units} \times \$165 \times (100\% - 80\%) = \text{K\$ } 2\,782$$

## 6. SAMPLE DECISION FORM

The following pages provide a sample decision form. As MARKSTRAT3 includes a user-friendly windows-based decision support system, you will not have to fill in decision forms during the course. However, having a quick look at these two pages will allow you to anticipate the scope of all mandatory decisions.

The decisions you will have to key in are written in a script type like 115, 32 580, Flexibility, Yes, etc.

### BRAND MANAGEMENT – SONITE BRANDS

Sonite Brands Base R&D project		SEAL PSPR2	SEXY PSBU1	SEFA PSHI2
Production planning	KU	200	150	200
Inventory sold to trading company	KU	0	38	0
Recommended retail price	\$	400	350	450
Advertising budget	K\$	500	2 250	2 250
Advertising research budget	K\$	50	50	500
Targeted segments in %	Bufs	5	100	0
	Singles	5	0	0
	Professionals	80	0	5
	High earners	5	0	95
	Others	5	0	0
Perceptual Objectives	Dimension 1	Economy	Economy	Performanc e
	Objective 1 [1,7] or [-20,+20]	-5.0	5.0	4.0
	Dimension 2	Convenie nce	Performan ce	Convenienc e
	Objective 2 [1,7] or [-20,+20]	1.0	15.0	-5.0

### BRAND MANAGEMENT – VODITE BRANDS

Vodite Brands Base R&D project		VETI PVETA
Production planning	KU	100
Inventory sold to trading company	KU	142
Recommended retail price	\$	1 200
Advertising budget	K\$	2 000
Advertising research budget	K\$	100
Targeted segments in %	Innovators	0
	Early Adopters	100
	Followers	0
Perceptual Objectives	Dimension 1	Efficacy
	Objective 1 [1,7] or [-20,+20]	1.0
	Dimension 2	Flexibili ty
	Objective 2 [1,7] or [-20,+20]	3.0

### SALES FORCE MANAGEMENT

Distribution Channels		Specialty stores	Depart. stores	Mass Merchants.
Number of salespeople		20	25	30
Sales force effort allocation by brand (%)	SEAL	33	45	47
	SEXY	14	8	10
	SEFA	19	27	43
	VETI	34	20	0
	<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>

### SONITE R&D PROJECTS

Project	Expenditures K\$	Product Characteristics					
		Weight Kg	Design Index	Volume Dm3	Max Freq. KHz	Power W	Base cost \$
PSHI3	100	15	7	70	35	40	10
PSPR3	350	15	4	60	40	40	10

### VODITE R&D PROJECTS

Project	Expenditures K\$	Product Characteristics					
		Autonomy M	Max Freq. KHz	Diameter Mm	Design Index	Weight g	Base cost \$
PVET1	500	60	10	50	5	50	10

### MARKET RESEARCH STUDIES

Study	Market covered by study		
	All markets	Sonite	Vodite
Industry benchmarking	Yes	-	-
Consumer survey	-	Yes	Yes
Consumer panel	-	Yes	Yes
Distribution panel	-	Yes	Yes
Semantic scales	-	Yes	Yes
Multidimensional scaling	-	Yes	No
Market forecast	-	Yes	Yes
Competitive advertising	-	Yes	Yes
Competitive sales force	-	No	Yes
Advertising experiment	-	No	No
Sales force experiment	-	Yes	Yes
Conjoint analysis	-	No	No

## **7. SAMPLE ANNUAL REPORT**

The following pages provide a sample annual report, composed of a Newsletter, a Company Report and Market Research Studies. To keep things simple, only Sonite studies have been included and the conjoint analysis results have not been given.

The annual report that you will receive in period 0 will be simpler. It will only include the Newsletter, the Company Report and a few Market Research Studies. In addition, your company will not have marketed any Vodite brands, making the report even shorter.

The data included in the following report is only for illustration purposes. It should not be used in making your decisions.

# COMPANY REPORT

## INDUSTRY PRACTICE - FIRM E

Based on scenario

### PERIOD 7

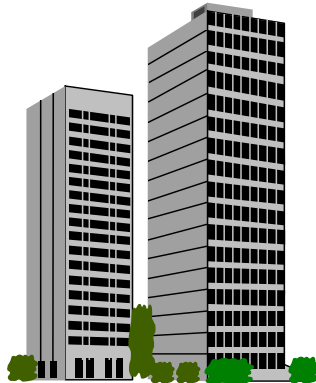
*Professor XYZ*

*Strategic Marketing Course*

*From 083/01/99 to 08/31/99*

*Green Forest University*

*Fontainebleau - France*



STRATX

The Key to Strategic Excellence

BOSTON - LONDON - PARIS

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## COMPANY RESULTS

### COMPANY SCORECARD

	Unit	Annual results			Evolution since P0	
		Period 6	Period 7	%change	Ratio P7/P0	Average growth
<b>Market share</b>						
Total	%\$	17.2%	14.9%	-13.3%	× 0.78	-3.4%
Sonite market	%\$	23.6%	26.6%	12.5%	× 1.40	4.9%
Vodite market	%\$	5.8%	4.5%	-22.4%	-	-
<b>Retail sales</b>						
Total	K\$	164,596	196,797	19.6%	× 3.67	20.4%
Sonite market	K\$	144,448	165,203	14.4%	× 3.08	17.4%
Vodite market	K\$	20,148	31,594	56.8%	-	-
<b>Contribution</b>						
Before marketing	K\$	36,892	57,992	57.2%	× 4.64	24.5%
After marketing	K\$	24,547	48,392	97.1%	× 6.67	31.2%
Net	K\$	20,545	43,297	110.7%	× 6.18	29.7%
Cumulative net	K\$	67,721	111,018	63.9%	× 15.85	48.4%
<b>Shareholder value</b>						
Stock price index	Base 1000	1,741	2,081	19.6%	× 2.08	11.0%
Current return on investment	Ratio	1.27	3.74	194.7%	× 2.92	16.6%
Cumulative return on investment	Ratio	1.00	1.40	39.9%	× 1.10	1.3%

### COMPANY PERFORMANCE

	Unit	Total	Sonite market	Vodite market
<b>Sales</b>				
<b>Units sold</b>	<b>U</b>	<b>432,124</b>	<b>405,603</b>	<b>26,521</b>
Average retail price	\$	455	407	1,191
Average selling price	\$	301	270	768
<b>Revenues</b>	<b>K\$</b>	<b>130,036</b>	<b>109,665</b>	<b>20,371</b>
<b>Production</b>				
Units produced	U	585,300	505,300	80,000
Cost of goods sold	K\$	-60,040	-51,405	-8,635
Inventory holding cost	K\$	-2,767	-1,374	-1,393
Inventory disposal loss	K\$	-9,237	-1,193	-8,045
<b>Contribution before marketing</b>	<b>K\$</b>	<b>57,992</b>	<b>55,694</b>	<b>2,299</b>
<b>Marketing</b>				
Advertising expenditures	K\$	-7,000	-5,000	-2,000

Advertising research expenditures	K\$	-700	-600	-100
Sales force	K\$	-1,900	-1,601	-299
<b>Contribution after marketing</b>	<b>K\$</b>	<b>48,392</b>	<b>48,493</b>	<b>-100</b>
<b>Other expenses</b>				
Market research studies	K\$	-1,039	-538	-462
Research and development	K\$	-950	-450	-500
Interest paid	K\$	0		
Exceptional cost or profit	K\$	-3,106		
<b>Net contribution</b>	<b>K\$</b>	<b>43,297</b>		
<b>Next period budget</b>	<b>K\$</b>	<b>17,300</b>		

## INSTRUCTOR AND SIMULATION MESSAGES

### Messages

The brand SECU was withdrawn from the market this period. The obsolete inventories were sold to a trading company at 80.0 % of transfer cost. The difference was charged as an exceptional cost of K\$3106.

The physical characteristics of brand SEXY were modified this period. The obsolete inventory (37625 units) was sold to a trading company at 80.0 % of transfer cost.

The difference was charged as an inventory disposal loss of K\$1193.

The physical characteristics of brand VETI were modified this period. The obsolete inventory (135941 units) was sold to a trading company at 80.0 % of transfer cost.

The difference was charged as an inventory disposal loss of K\$8045.

## BRAND RESULTS

### CONTRIBUTION BY BRAND

Sonite Brands	Unit	Total	SEAL	SEXY	SEFA
Base R&D project			PSPR2	PSBU1	PSHI2
<b>Sales</b>					
Units sold	U	405,603	225,325	35,687	144,591
Average retail price	\$	407	394	341	444
Average selling price	\$	270	262	220	296
<b>Revenues</b>	<b>K\$</b>	<b>109,665</b>	<b>58,986</b>	<b>7,845</b>	<b>42,834</b>
<b>Production</b>					
Units produced	U	505,300	225,300	120,000	160,000
Current unit transfer cost	\$	-	121	165	125
Average unit transfer cost	\$	127	121	165	127
Cost of goods sold	K\$	-51,405	-27,171	-5,881	-18,352
Units in inventory	U	110,551	4	84,313	26,233
Inventory holding cost	K\$	-1,374	0	-1,112	-262
Inventory disposal loss	K\$	-1,193	0	-1,193	0
<b>Contribution before marketing</b>	<b>K\$</b>	<b>55,694</b>	<b>31,815</b>	<b>-341</b>	<b>24,220</b>
<b>Marketing</b>					
Advertising expenditures	K\$	-5,000	-500	-2,250	-2,250
Advertising research expenditures	K\$	-600	-50	-50	-500
Sales force	K\$	-1,601	-809	-198	-594
<b>Contribution after marketing</b>	<b>K\$</b>	<b>48,493</b>	<b>30,455</b>	<b>-2,838</b>	<b>20,876</b>

### CONTRIBUTION BY BRAND

Vodite Brands	Unit	Total	VETI
Base R&D project			PVETA
<b>Sales</b>			
Units sold	U	26,521	26,521
Average retail price	\$	1,191	1,191
Average selling price	\$	768	768
<b>Revenues</b>	<b>K\$</b>	<b>20,371</b>	<b>20,371</b>
<b>Production</b>			
Units produced	U	80,000	80,000
Current unit transfer cost	\$	-	326
Average unit transfer cost	\$	326	326
Cost of goods sold	K\$	-8,635	-8,635
Units in inventory	U	53,479	53,479
Inventory holding cost	K\$	-1,393	-1,393



Inventory disposal loss	K\$	-8,045	-8,045
<b>Contribution before marketing</b>	<b>K\$</b>	<b>2,299</b>	<b>2,299</b>
<b>Marketing</b>			
Advertising expenditures	K\$	-2,000	-2,000
Advertising research expenditures	K\$	-100	-100
Sales force	K\$	-299	-299
<b>Contribution after marketing</b>	<b>K\$</b>	<b>-100</b>	<b>-100</b>

## MARKET SHARES AND DISTRIBUTION COVERAGE

Sonite Brands	Unit	Total	SEAL	SEXY	SEFA
<b>Market shares</b>	%U	25.3%	14.0%	2.2%	9.0%
	;%\$	26.6%	14.3%	2.0%	10.3%
<b>Distribution coverage in %</b>					
Specialty stores (11,091 outlets)	%		30.6%	15.4%	21.9%
Depart. stores (4,033 outlets)	%		41.1%	10.8%	32.7%
Mass Merchandis. (11,379 outlets)	%		30.3%	10.8%	29.9%

## MARKET SHARES AND DISTRIBUTION COVERAGE

Vodite Brands	Unit	Total	VETI
<b>Market shares</b>	%U	4.4%	4.4%
	;%\$	4.5%	4.5%
<b>Distribution coverage in %</b>			
Specialty stores (11,091 outlets)	%		28.6%
Depart. stores (4,033 outlets)	%		28.8%
Mass Merchandis. (11,379 outlets)	%		1.0%

**RESEARCH & DEVELOPMENT RESULTS**

**SONITE R&D PROJECTS**

Name	Physical Characteristics					Base Cost \$		Allocated Budget K\$	
	Weight (Kg)	Design (Index)	Volume (Dm3)	Max Freq (KHz)	Power (W)	Current	Minimum realistic	Cumulative	Req. for completion
PSEAL	13	7	40	40	75	203	177	1,500	Avail. in P-1
PSEXY	15	4	40	45	90	253	188	2,000	Avail. in P-1
PSEA1	13	7	40	40	75	178	177	400	Avail. in P2
PSEX1	15	4	40	45	90	188	188	600	Avail. in P2
PSPR1	15	4	40	40	80	172	171	1,000	Avail. in P3
PSHI1	15	4	40	35	50	129	128	1,100	Avail. in P4
PSPR2	15	4	60	40	40	175	114	500	Avail. in P5
PSBU1	15	7	40	40	75	177	177	850	Avail. in P6
PSHI2	15	7	70	35	40	164	120	500	Avail. in P5
PSHI3	15	7	70	35	40	121	120	100	440
PSPR3	15	4	60	40	40	114	114	350	420

(\*) *Projects written in bold font have just been completed this period.*

**VODITE R&D PROJECTS**

Name	Physical Characteristics				Base Cost \$		Allocated Budget K\$		
	Autonomy (M)	Max Freq (KHz)	Diameter (Mm)	Design (Index)	Weight (g)	Current	Minimum realistic	Cumulative	Req. for completion
PVENI	10	10	30	4	30	276	275	100	3,050
PVEDI	90	15	90	8	90	222	222	100	4,040
PVICI	50	10	50	7	50	271	270	100	1,760
PVETI	40	10	75	6	35	327	262	8,000	Avail. in P4
PVETA	60	10	50	5	50	318	270	2,500	Avail. in P6
PVET1	60	10	50	5	50	271	270	500	100

(\*) *Projects written in bold font have just been completed this period.*

## CUMULATIVE RESULTS

### CUMULATIVE BRAND RESULTS

Brand	Results since period	Sales		Production		Marketing		Contrib. after mktg.	
		Units sold	Retail sales	Revenues	Cost of goods sold	Inventory costs	Advertising		Sales force
		KU	K\$	K\$	K\$	K\$	K\$	K\$	
SEAL	0	992	417,127	274,511	134,632	7,330	13,733	7,235	111,582
SEXY	0	279	118,608	77,403	53,634	6,900	12,598	2,602	1,668
SEFA	4	291	129,108	86,050	39,966	9,361	9,414	2,160	25,149
SECU	5	26	7,922	5,288	3,258	1,923	2,600	589	-3,082
VETI	5	51	60,265	38,763	16,375	14,491	5,400	786	1,711
<b>Total Sonite</b>		<b>1,588</b>	<b>672,765</b>	<b>443,252</b>	<b>231,490</b>	<b>25,515</b>	<b>38,345</b>	<b>12,586</b>	<b>135,317</b>
<b>Total Vodite</b>		<b>51</b>	<b>60,265</b>	<b>38,763</b>	<b>16,375</b>	<b>14,491</b>	<b>5,400</b>	<b>786</b>	<b>1,711</b>
<b>Total all markets</b>		<b>1,638</b>	<b>733,031</b>	<b>482,015</b>	<b>247,865</b>	<b>40,006</b>	<b>43,745</b>	<b>13,372</b>	<b>137,027</b>

### CUMULATIVE COMPANY PERFORMANCE

	Unit	Total	Sonite market	Vodite market
<b>Sales</b>				
Units sold	KU	1,638	1,588	51
Retail sales	K\$	733,031	672,765	60,265
Revenues	K\$	482,015	443,252	38,763
<b>Production</b>				
Cost of goods sold	K\$	-247,865	-231,490	-16,375
Inventory holding and disposal cost	K\$	-40,006	-25,515	-14,491
<b>Marketing</b>				
Total advertising expenditures	K\$	-43,745	-38,345	-5,400
Sales force expenditures	K\$	-13,372	-12,586	-786
<b>Contribution after marketing</b>	<b>K\$</b>	<b>137,027</b>	<b>135,317</b>	<b>1,711</b>
<b>Other expenses</b>				
Market research studies	K\$	-5,383	-3,345	-1,794
Research and development	K\$	-16,700	-5,400	-11,300
Interest paid	K\$	-821		
Exceptional cost or profit	K\$	-3,106		
<b>Net contribution</b>	<b>K\$</b>	<b>111,018</b>		

# INDUSTRY NEWSLETTER

## INDUSTRY PRACTICE

Based on scenario

### PERIOD 7

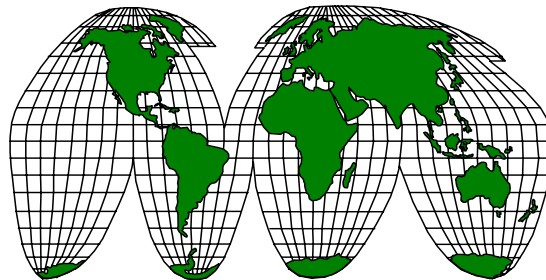
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## STOCK MARKET AND KEY PERFORMANCE INDICATORS

### STOCK MARKET

Firm	Stock price index	Market capitalization	Net contribution (K\$)	
	base 1000	K\$	Period 7	Cumulative
A	3,839	1,158,048	171,372	649,065
U	2,467	536,399	60,186	251,616
E	2,081	295,195	43,297	111,018
I	1,977	731,519	104,486	341,788
O	1,279	206,231	16,937	136,443

### COMPANY KEY PERFORMANCE INDICATORS

(period 7 values)

	Unit	A	E	I	O	U
<b>Market share</b>						
Total	%\$	34.0%	14.9%	25.3%	8.5%	17.3%
Sonite market	%\$	24.4%	26.6%	20.7%	18.1%	10.2%
Vodite market	%\$	42.5%	4.5%	29.5%	0.0%	23.6%
<b>Retail sales</b>						
Total	K\$	449,000	196,797	334,803	112,625	228,517
Sonite market	K\$	151,817	165,203	128,506	112,625	63,642
Vodite market	K\$	297,182	31,594	206,297	0	164,874
<b>Contribution</b>						
Before marketing	K\$	195,483	57,992	127,135	27,640	80,697
After marketing	K\$	172,246	48,392	105,226	16,937	65,678
Net	K\$	171,372	43,297	104,486	16,937	60,186
Cumulative net	K\$	649,065	111,018	341,788	136,443	251,616
<b>Shareholder value</b>						
Stock price index	Base 1000	3,839	2,081	1,977	1,279	2,467
Current return on investment	Ratio	7.11	3.74	4.68	1.58	2.95
Cumulative return on investment	Ratio	5.07	1.40	3.49	1.86	2.60

## COMPANY KEY PERFORMANCE INDICATORS

(% change from period 6 to period 7)

	A	E	I	O	U
<b>Market share</b>					
Total	0.2%	-13.3%	48.5%	-27.0%	-14.4%
Sonite market	-14.0%	12.5%	18.0%	-0.9%	-16.2%
Vodite market	-2.6%	-22.4%	81.3%	-	-31.4%
<b>Retail sales</b>					
Total	38.3%	19.6%	104.8%	0.8%	18.1%
Sonite market	-12.6%	14.4%	19.9%	0.8%	-14.8%
Vodite market	96.8%	56.8%	266.4%	-	38.7%
<b>Contribution</b>					
Before marketing	30.7%	57.2%	96.1%	-25.1%	8.6%
After marketing	30.3%	97.1%	112.0%	-35.4%	8.9%
Net	36.1%	110.7%	125.1%	-31.2%	14.9%
Cumulative net	35.9%	63.9%	44.0%	14.2%	31.4%
<b>Shareholder value</b>					
Stock price index	21.4%	19.6%	34.2%	-7.6%	-3.2%
Current return on investment	34.0%	194.7%	85.5%	-21.2%	22.1%
Cumulative return on investment	10.3%	39.9%	11.2%	-2.5%	3.7%

## ECONOMIC VARIABLES AND COSTS

### ECONOMIC VARIABLES

	Unit	Actual value	Forecast value	% change
		Period 7	Period 8	
GNP growth rates	%	3.0%	3.0%	0.0%
Inflation rate	%	3.0%	3.0%	0.0%
<b>Production</b>				
Inventory holding cost per annum	% transf. cost	8.0%	8.0%	0.0%
Loss incurred for inventory disposal	% transf. cost	20.0%	20.0%	0.0%
<b>Sales force</b>				
Salesperson operating cost	\$	25,335	26,095	3.0%
Salesperson hiring and training cost	\$	3,800	3,914	3.0%
Salesperson firing cost	\$	6,334	6,524	3.0%

**COST OF MARKET RESEARCH STUDIES NEXT PERIOD**

(all numbers in K\$)

Study	Market covered by study		
	All markets	Sonite	Vodite
Industry benchmarking	39		
Consumer survey		78	52
Consumer panel		130	91
Distribution panel		78	65
Semantic scales		13	13
Multidimensional scaling		46	46
Market forecast		26	26
Competitive advertising		39	39
Competitive sales force		20	20
Advertising experiment		33	33
Sales force experiment		46	46
Conjoint analysis		46	46
<b>Total market</b>	<b>39</b>	<b>555</b>	<b>477</b>
<b>Total if all studies ordered</b>	<b>1,071</b>		

**INFORMATION ON SONITE MARKET**

**CHARACTERISTICS OF MARKETED SONITE BRANDS**

Firm	Brand	New or modified	Physical characteristics					Base cost (\$)	Retail price (\$)
			Weight (Kg)	Design (Index)	Volume (Dm3)	Max Freq (KHz)	Power (W)		
A	SACK	No	18	5	70	15	10	60	180
	SAND	No	15	4	35	20	30	93	525
	SAPR	No	15	7	35	50	70	206	410
	SASI	No	15	4	35	20	50	144	300
E	SEAL	No	15	4	60	40	40	175	400
	SEXY	Modified	15	7	40	40	75	177	350
	SEFA	No	15	7	70	35	40	164	450
I	SIGN	Modified	19	8	60	20	50	151	380
	SILK	No	14	7	50	35	70	190	500
O	SOAP	No	15	7	40	45	88	232	520
	SONG	Modified	13	7	33	45	91	242	380
	SOLO	No	16	3	47	50	5	114	490
U	SUCH	No	18	4	40	25	50	121	260
	SUMO	No	15	7	70	10	12	66	150
	SUBU	New	13	7	75	48	88	193	237

**INFORMATION ON SONITE MARKET - SALES AND MARKET SHARES**

Firm	Brand	Volume sold				Retail sales			
		Period 6	Period 7	Change	Share	Period 6	Period 7	Change	Share
		U	U	%	%U	K\$	K\$	%	%\$
A	SACK	75,832	74,427	-1.9%	4.6%	12,610	12,402	-1.6%	2.0%
	SAND	220,341	209,496	-4.9%	13.1%	114,979	109,467	-4.8%	17.6%
	SAPR	51,545	15,025	-70.8%	0.9%	20,921	6,106	-70.8%	1.0%
	SASI	87,084	83,062	-4.6%	5.2%	25,113	23,843	-5.1%	3.8%
E	SEAL	207,371	225,325	8.7%	14.0%	81,713	88,790	8.7%	14.3%
	SEXY	27,502	35,687	29.8%	2.2%	9,402	12,164	29.4%	2.0%
	SEFA	109,175	144,591	32.4%	9.0%	48,494	64,250	32.5%	10.3%
I	SIGN	38,688	120,000	210.2%	7.5%	14,146	43,801	209.6%	7.0%
	SILK	189,637	173,157	-8.7%	10.8%	93,022	84,705	-8.9%	13.6%
O	SOAP	122,588	106,910	-12.8%	6.7%	62,989	54,948	-12.8%	8.8%
	SONG	98,157	92,225	-6.0%	5.7%	36,671	34,456	-6.0%	5.5%
	SOLO	24,838	47,665	91.9%	3.0%	12,097	23,221	91.9%	3.7%
U	SUCH	240,230	160,779	-33.1%	10.0%	66,354	41,403	-37.6%	6.7%
	SUMO	70,816	48,589	-31.4%	3.0%	8,351	6,603	-20.9%	1.1%
	SUBU	0	67,454	-	4.2%	0	15,635	-	2.5%
<b>Total Sonite market</b>		<b>1,578,801</b>	<b>1,604,392</b>	<b>1.6%</b>	<b>100.0%</b>	<b>622,506</b>	<b>621,793</b>	<b>-0.1%</b>	<b>100.0%</b>

**INFORMATION ON VODITE MARKET**

**CHARACTERISTICS OF MARKETED VODITE BRANDS**

Firm	Brand	New or modified	Physical characteristics					Base cost (\$)	Retail price (\$)
			Autonomy (M)	Max Freq (KHz)	Diameter (Mm)	Design (Index)	Weight (g)		
A	VAZY	Modified	50	18	50	5	50	290	1,299
	VAZA	Modified	70	15	50	7	50	306	1,199
	VAZF	New	35	10	75	9	75	348	999
E	VETI	Modified	60	10	50	5	50	318	1,200
I	VIZU	No	45	13	55	8	45	348	1,500
	VIXI	No	45	15	55	8	45	437	1,300
U	VUAD	No	50	15	50	6	50	284	937



**INFORMATION ON VODITE MARKET - SALES AND MARKET SHARES**

Firm	Brand	Volume sold				Retail sales			
		Period 6	Period 7	Change	Share	Period 6	Period 7	Change	Share
		U	U	%	%U	K\$	K\$	%	%\$
A	VAZY	63,335	120,000	89.5%	19.9%	91,840	151,855	65.3%	21.7%
	VAZA	47,384	117,209	147.4%	19.5%	59,196	136,080	129.9%	19.4%
	VAZF	0	9,767	-	1.6%	0	9,248	-	1.3%
E	VETI	16,904	26,521	56.9%	4.4%	20,148	31,594	56.8%	4.5%
I	VIZU	18,290	83,425	356.1%	13.9%	26,988	122,897	355.4%	17.6%
	VIXI	23,076	65,296	183.0%	10.8%	29,317	83,400	184.5%	11.9%
U	VUAD	88,725	180,000	102.9%	29.9%	118,854	164,874	38.7%	23.6%
<b>Total Vodite market</b>		<b>257,713</b>	<b>602,219</b>	<b>133.7%</b>	<b>100.0%</b>	<b>354,588</b>	<b>699,947</b>	<b>97.4%</b>	<b>100.0%</b>

# MARKET RESEARCH STUDIES

## INDUSTRY PRACTICE - FIRM E

### PERIOD 7

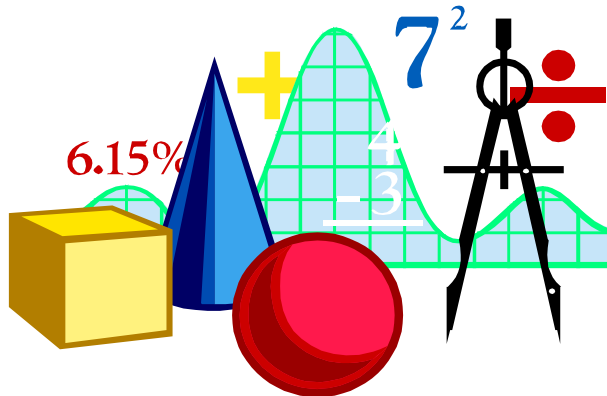
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**INDUSTRY BENCHMARKING**

**BENCHMARKING - ESTIMATED OVERALL PERFORMANCE**

	Unit	A	E	I	O	U
<b>Sales</b>						
Retail sales	K\$	449,000	196,797	334,803	112,625	228,517
Revenues	K\$	295,464	130,036	217,403	72,821	148,757
<b>Production</b>						
Cost of goods sold	K\$	-94,706	-60,040	-87,643	-43,399	-65,497
Inventory holding cost	K\$	-5,266	-2,767	-1,886	-1,781	-2,563
Inventory disposal loss	K\$	-8	-9,237	-739	-2	0
<b>Contribution before marketing</b>	<b>K\$</b>	<b>195,483</b>	<b>57,992</b>	<b>127,135</b>	<b>27,640</b>	<b>80,697</b>
<b>Marketing</b>						
Advertising expenditures	K\$	-17,800	-7,000	-17,300	-7,500	-7,500
Advertising research expenditures	K\$	-2,650	-700	-1,900	-1,100	-450
Sales force	K\$	-2,787	-1,900	-2,708	-2,103	-7,069
<b>Contribution after marketing</b>	<b>K\$</b>	<b>172,246</b>	<b>48,392</b>	<b>105,226</b>	<b>16,937</b>	<b>65,678</b>
<b>Other expenses</b>						
Market research studies	K\$	-874	-1,039	0	0	-684
Research and development	K\$	0	-950	-420	0	-4,710
Interest paid	K\$	0	0	-320	0	-98
Exceptional cost or profit	K\$	0	-3,106	0	0	0
<b>Net contribution</b>	<b>K\$</b>	<b>171,372</b>	<b>43,297</b>	<b>104,486</b>	<b>16,937</b>	<b>60,186</b>
Next period budget	K\$	25,350	17,300	25,350	8,850	24,050

**BENCHMARKING - ESTIMATED PERFORMANCE IN SONITE MARKET**

	Unit	A	E	I	O	U
<b>Sales</b>						
Retail sales	K\$	151,817	165,203	128,506	112,625	63,642
Revenues	K\$	100,694	109,665	85,186	72,821	41,806
<b>Production</b>						
Cost of goods sold	K\$	-25,271	-51,405	-34,647	-43,399	-27,098
Inventory holding cost	K\$	-3,263	-1,374	-1	-1,781	-2,563
Inventory disposal loss	K\$	0	-1,193	-739	-2	0
<b>Contribution before marketing</b>	<b>K\$</b>	<b>72,161</b>	<b>55,694</b>	<b>49,799</b>	<b>27,640</b>	<b>12,145</b>
<b>Marketing</b>						
Advertising expenditures	K\$	-8,800	-5,000	-9,300	-7,500	-5,500
Advertising research expenditures	K\$	-850	-600	-900	-1,100	-350
Sales force	K\$	-1,376	-1,601	-1,851	-2,103	-4,854
<b>Contribution after marketing</b>	<b>K\$</b>	<b>61,135</b>	<b>48,493</b>	<b>37,748</b>	<b>16,937</b>	<b>1,441</b>

**BENCHMARKING - ESTIMATED PERFORMANCE IN VODITE MARKET**

	Unit	A	E	I	O	U
<b>Sales</b>						
Retail sales	K\$	297,182	31,594	206,297	0	164,874
Revenues	K\$	194,769	20,371	132,217	0	106,950
<b>Production</b>						
Cost of goods sold	K\$	-69,435	-8,635	-52,996	0	-38,398
Inventory holding cost	K\$	-2,003	-1,393	-1,885	0	0
Inventory disposal loss	K\$	-8	-8,045	0	0	0
<b>Contribution before marketing</b>	<b>K\$</b>	<b>123,322</b>	<b>2,299</b>	<b>77,336</b>	<b>0</b>	<b>68,552</b>
<b>Marketing</b>						
Advertising expenditures	K\$	-9,000	-2,000	-8,000	0	-2,000
Advertising research expenditures	K\$	-1,800	-100	-1,000	0	-100
Sales force	K\$	-1,411	-299	-857	0	-2,215
<b>Contribution after marketing</b>	<b>K\$</b>	<b>111,111</b>	<b>-100</b>	<b>67,479</b>	<b>0</b>	<b>64,237</b>

**CONSUMER SURVEY - SONITE MARKET**

**CONSUMER SURVEY - BRAND AWARENESS BY SEGMENT**

Firm	Brand	Bufs	Singles	Pros	HiEarners	Others	Total
A	SACK	38.2%	42.7%	63.4%	32.9%	61.7%	39.7%
	SAND	52.3%	45.3%	78.6%	68.1%	52.4%	58.1%
	SAPR	20.9%	18.1%	83.0%	37.9%	21.1%	29.3%
	SASI	12.5%	33.7%	44.8%	11.0%	13.2%	18.8%
E	SEAL	51.6%	43.7%	73.5%	51.8%	49.8%	49.7%
	SEXY	52.2%	30.1%	61.1%	31.7%	37.4%	35.4%
	SEFA	18.1%	17.5%	73.6%	31.2%	22.3%	25.5%
I	SIGN	44.0%	53.6%	66.6%	39.2%	54.5%	46.0%
	SILK	62.8%	53.5%	88.3%	64.8%	59.9%	61.3%
O	SOAP	52.8%	43.1%	85.5%	62.9%	47.2%	54.8%
	SONG	64.9%	49.0%	66.6%	45.5%	44.8%	49.7%
	SOLO	19.4%	15.3%	56.0%	42.2%	17.0%	29.2%
U	SUCH	52.8%	66.2%	72.4%	57.0%	52.4%	59.0%
	SUMO	44.5%	45.8%	69.5%	34.3%	73.1%	43.2%
	SUBU	33.2%	14.6%	33.5%	15.0%	15.3%	18.0%

**CONSUMER SURVEY - PURCHASE INTENTIONS**

Firm	Brand	Bufs	Singles	Pros	HiEarners	Others	Total
A	SACK	1.1%	3.0%	1.4%	0.8%	55.5%	8.9%
	SAND	1.8%	3.5%	6.4%	19.4%	1.6%	8.8%
	SAPR	4.7%	1.0%	3.1%	2.4%	0.3%	2.0%
	SASI	0.8%	25.2%	6.0%	0.8%	0.9%	8.9%
E	SEAL	5.5%	6.6%	14.4%	22.0%	1.2%	11.5%
	SEXY	22.4%	2.4%	2.2%	1.4%	0.7%	4.9%
	SEFA	1.0%	1.7%	12.4%	21.3%	0.5%	8.8%
I	SIGN	1.9%	17.3%	6.9%	3.2%	5.0%	7.9%
	SILK	6.6%	7.9%	30.3%	9.1%	1.6%	7.8%
O	SOAP	8.4%	3.9%	7.5%	8.5%	0.9%	5.9%
	SONG	21.7%	3.8%	2.9%	2.5%	0.8%	5.7%
	SOLO	1.0%	0.6%	1.7%	5.3%	0.3%	2.3%
U	SUCH	3.3%	20.6%	3.2%	2.5%	3.5%	8.7%
	SUMO	1.1%	2.0%	1.2%	0.6%	27.0%	4.7%
	SUBU	18.6%	0.4%	0.5%	0.3%	0.2%	3.1%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**CONSUMER SURVEY - SHOPPING HABITS**

Segment	Specialty stores	Depart. stores	Mass Merchandis.	Total
Bufs	50.0%	20.0%	30.0%	100.0%
Singles	30.0%	30.0%	40.0%	100.0%
Professionals	35.0%	25.0%	40.0%	100.0%
High earners	40.0%	50.0%	10.0%	100.0%
Others	10.0%	30.0%	60.0%	100.0%
Total	35.9%	37.6%	26.6%	100.0%

**CONSUMER PANEL - SONITE MARKET**

**CONSUMER PANEL - MARKET SHARES BASED ON UNIT SALES**

Firm	Brand	Bufs	Singles	Pros	HiEarners	Others	Total
A	SACK	0.5%	1.6%	0.6%	0.2%	46.7%	4.6%

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	SAND	2.3%	4.4%	6.8%	24.4%	2.1%	13.1%
	SAPR	2.1%	0.4%	1.2%	1.0%	0.2%	0.9%
	SASI	0.5%	16.5%	3.4%	0.4%	0.8%	5.2%
E	SEAL	6.2%	8.1%	15.2%	22.6%	1.9%	14.0%
	SEXY	10.9%	1.2%	1.0%	0.5%	0.4%	2.2%
	SEFA	1.0%	1.8%	11.0%	17.6%	0.8%	9.0%
I	SIGN	1.7%	18.2%	6.2%	2.5%	7.4%	7.5%
	SILK	9.4%	11.5%	38.7%	10.9%	2.8%	10.8%
O	SOAP	9.5%	4.2%	7.1%	8.3%	1.1%	6.7%
	SONG	23.6%	3.9%	2.7%	2.3%	0.9%	5.7%
	SOLO	1.2%	0.7%	1.6%	5.6%	0.3%	3.0%
U	SUCH	4.3%	25.7%	3.4%	3.2%	4.4%	10.0%
	SUMO	0.5%	1.2%	0.6%	0.1%	29.9%	3.0%
	SUBU	26.4%	0.6%	0.6%	0.3%	0.4%	4.2%
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Total sales (U)</b>		<b>232,426</b>	<b>466,612</b>	<b>36,449</b>	<b>731,390</b>	<b>137,515</b>	<b>1,604,392</b>
<b>Total sales (% Total)</b>		<b>14.5%</b>	<b>29.1%</b>	<b>2.3%</b>	<b>45.6%</b>	<b>8.6%</b>	<b>100.0%</b>

***DISTRIBUTION PANEL - SONITE MARKET***

**DISTRIBUTION PANEL - MARKET SHARES BASED ON UNIT SALES**

Firm	Brand	Specialty stores	Depart. stores	Mass Merchandis.	Total
A	SACK	0.7%	2.3%	15.6%	4.6%
	SAND	14.2%	17.7%	2.8%	13.1%
	SAPR	1.2%	1.0%	0.4%	0.9%
	SASI	3.7%	3.8%	10.1%	5.2%
E	SEAL	13.0%	17.6%	9.4%	14.0%
	SEXY	3.1%	1.1%	2.6%	2.2%
	SEFA	7.8%	12.3%	5.1%	9.0%
I	SIGN	4.7%	6.8%	13.3%	7.5%
	SILK	12.1%	9.7%	10.6%	10.8%
O	SOAP	9.1%	6.1%	3.5%	6.7%
	SONG	8.8%	3.6%	4.4%	5.7%
	SOLO	3.7%	3.5%	0.8%	3.0%

U	SUCH	11.6%	11.7%	4.3%	10.0%
	SUMO	0.1%	0.4%	12.9%	3.0%
	SUBU	6.2%	2.3%	4.2%	4.2%
Total		100.0%	100.0%	100.0%	100.0%
<b>Total sales (U)</b>		<b>608,924</b>	<b>640,815</b>	<b>354,653</b>	<b>1,604,392</b>
<b>Total sales (% Total)</b>		<b>38.0%</b>	<b>39.9%</b>	<b>22.1%</b>	<b>100.0%</b>

**DISTRIBUTION PANEL - DISTRIBUTION COVERAGE BY CHANNEL**

<b>Firm</b>	<b>Brand</b>	<b>Specialty stores</b>	<b>Depart. stores</b>	<b>Mass Merchandis.</b>
A	SACK	4.9%	7.5%	15.2%
	SAND	49.5%	54.6%	11.2%
	SAPR	17.3%	19.0%	5.0%
	SASI	13.1%	15.2%	14.7%
E	SEAL	30.6%	41.1%	30.3%
	SEXY	15.4%	10.8%	10.8%
	SEFA	21.9%	32.7%	29.9%
I	SIGN	22.8%	35.2%	32.3%
	SILK	52.7%	43.1%	37.2%
O	SOAP	48.7%	33.1%	17.4%
	SONG	46.6%	30.9%	17.1%
	SOLO	49.4%	42.8%	15.8%
U	SUCH	55.7%	59.1%	1.6%
	SUMO	0.3%	0.6%	39.3%
	SUBU	56.1%	48.9%	34.3%
<b>Total number of outlets</b>		<b>11,091</b>	<b>4,033</b>	<b>11,379</b>

**SEMANTIC SCALES - SONITE MARKET**

**SEMANTIC SCALES - IDEAL VALUES (1 TO 7)**

Segment	Weight	Design	Volume	Max Freq	Power	Price
Bufs	2.37	4.24	1.85	6.23	6.48	3.86
Singles	5.65	4.63	6.01	4.99	4.85	4.47
Pros	4.57	5.00	5.09	4.80	2.26	4.35
HiEarners	5.27	4.24	5.15	5.26	2.80	5.90
Others	6.37	1.95	6.18	2.21	5.31	3.38
Importance of characteristic (1)	4	2	4	10	4	7

(1) On a scale from 1 to 10 - 1 = Not important - 10 = Very important

**SEMANTIC SCALES - BRAND PERCEPTIONS (1 TO 7)**

Firm	Brand	Weight	Design	Volume	Max Freq	Power	Price
A	SACK	5.89	2.34	4.80	2.42	1.50	1.73
	SAND	4.00	1.63	1.97	3.09	2.41	6.22
	SAPR	4.00	4.23	2.04	6.29	4.95	5.25
	SASI	4.00	1.63	1.93	3.19	3.49	3.53
E	SEAL	3.62	2.46	3.71	5.40	3.73	5.26
	SEXY	4.00	3.01	2.43	6.02	6.13	4.30
	SEFA	4.43	4.37	4.72	5.07	3.08	6.06
I	SIGN	6.45	5.66	3.85	3.21	3.52	4.38
	SILK	3.28	4.77	3.30	4.63	5.32	5.66
O	SOAP	3.99	4.77	2.66	5.59	6.25	6.15
	SONG	3.89	2.74	4.12	6.50	6.33	4.90
	SOLO	4.71	1.50	2.97	6.22	1.50	5.62
U	SUCH	5.63	1.62	2.85	3.94	3.30	2.58
	SUMO	5.07	3.76	4.82	1.73	1.50	1.50
	SUBU	2.81	4.71	4.25	6.50	6.26	2.30



**MULTIDIMENSIONAL SCALING - SONITE MARKET**

**MULTIDIMENSIONAL SCALING - IDEAL VALUES (-20 TO +20)**

Segment	Economy	Performance	Convenience
Bufs	5.6	14.7	8.1
Singles	-0.5	1.6	-6.4
Pros	-5.1	2.2	-0.6
HiEarners	-11.3	4.4	-5.5
Others	5.5	-12.6	-15.2

**MULTIDIMENSIONAL SCALING - BRAND PERCEPTIONS (-20 TO +20)**

Firm	Brand	Economy	Performance	Convenience
A	SACK	5.3	-9.2	-12.2
	SAND	-13.5	-1.1	-4.7
	SAPR	-3.9	14.7	0.5
	SASI	1.2	-0.6	-4.7
E	SEAL	-6.4	7.5	-1.3
	SEXY	2.9	12.7	-2.0
	SEFA	-11.4	4.2	-1.3
I	SIGN	-2.8	-3.7	-8.1
	SILK	-5.1	4.3	4.9
O	SOAP	-5.5	10.2	1.6
	SONG	0.5	13.0	-2.0
	SOLO	-13.3	12.8	-9.3
U	SUCH	5.2	1.6	-12.4
	SUMO	6.9	-12.7	-5.5
	SUBU	12.5	14.6	7.0

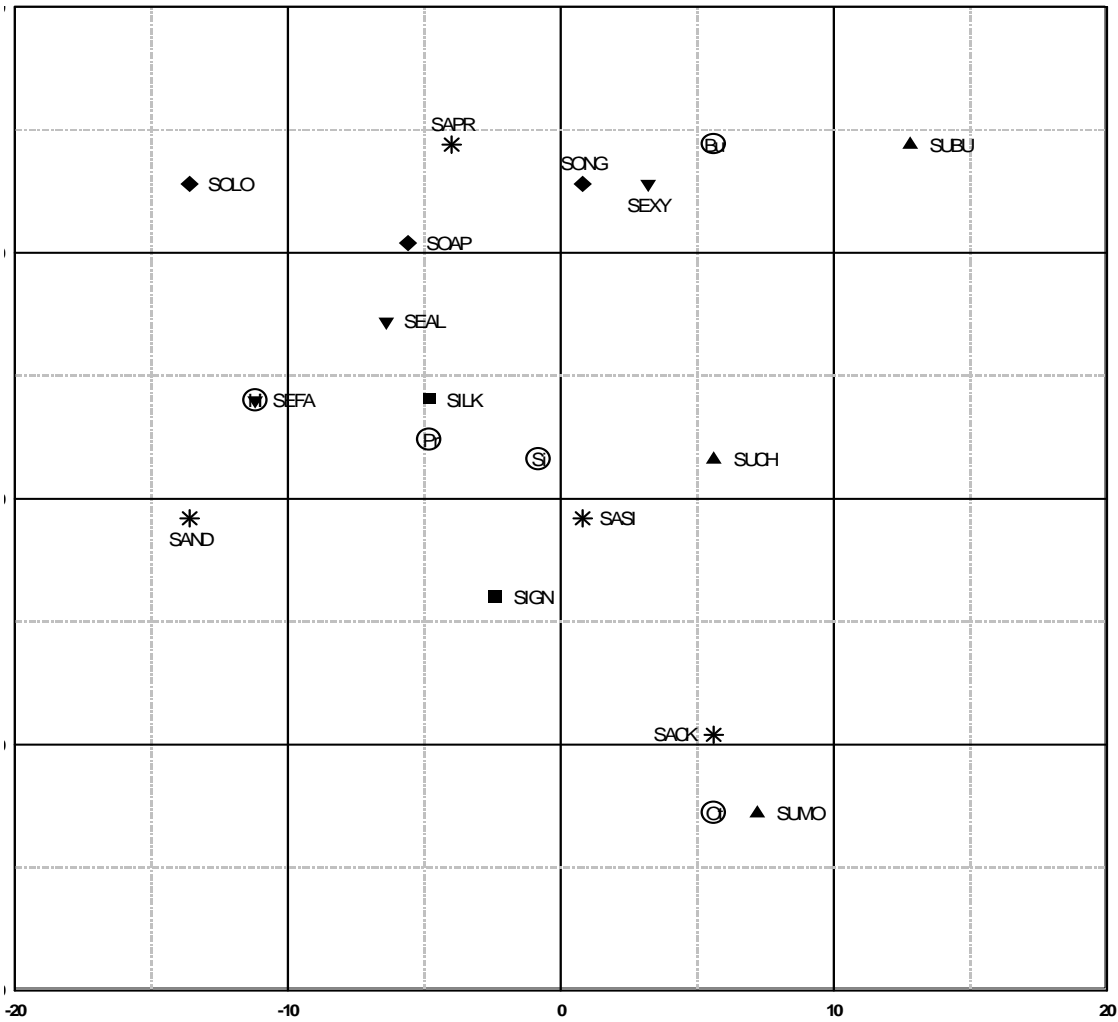
**MULTIDIMENSIONAL SCALING**

**INFLUENCE OF PRODUCT CHARACTERISTICS ON MDS DIMENSIONS**

	Weight (Kg)	Design (Index)	Volume (Dm3)	Max Freq (KHz)	Power (W)	Price (\$)
Economy	Slight	Slight	Slight	Slight	Moderate	Moderate
Performance	Slight	Slight	Moderate	<b>Strong</b>	Slight	Slight
Convenience	Moderate	Moderate	Slight	Slight	Slight	Slight

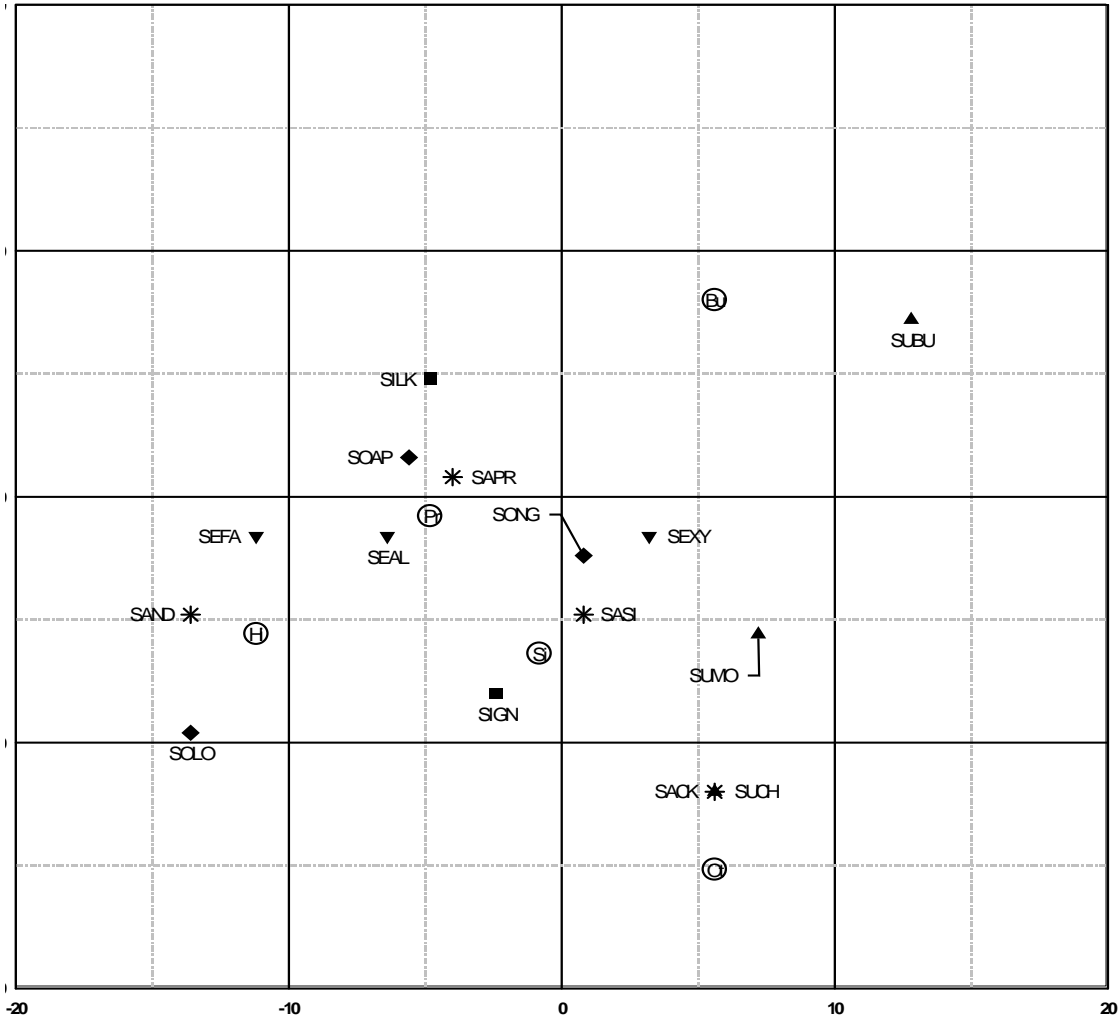
**MULTIDIMENSIONAL SCALING - PERCEPTUAL MAP**  
**ECONOMY X PERFORMANCE**

Horizontal axis : Economy (perceived economy, increasing from left to right)  
 Vertical axis : Performance (perceived performance, increasing from bottom to top)



**MULTIDIMENSIONAL SCALING - PERCEPTUAL MAP**  
**ECONOMY X CONVENIENCE**

Horizontal axis : Economy (perceived economy, increasing from left to right)  
 Vertical axis : Convenience (perceived convenience, increasing from bottom to top)



## MARKET FORECAST - SONITE MARKET

### MARKET FORECAST - SEGMENT SIZES AND GROWTH RATES

Segment	Bufs	Singles	Pros	HiEarners	Others	Total
<b>Segment sizes in KU</b>						
Actual size this period	232	467	36	731	138	<b>1,604</b>
Forecasted size next period	215	505	34	829	135	<b>1,717</b>
Forecasted size in five periods	159	690	25	1,366	123	<b>2,363</b>
<b>Relative segment sizes in %</b>						
Actual size this period	14.5%	29.1%	2.3%	45.6%	8.6%	<b>100.0%</b>
Forecasted size next period	12.5%	29.4%	2.0%	48.3%	7.8%	<b>100.0%</b>
Forecasted size in five periods	6.7%	29.2%	1.1%	57.8%	5.2%	<b>100.0%</b>
<b>Forecasted growth rates in %</b>						
Next period	-7.3%	8.2%	-7.3%	13.3%	-2.2%	<b>7.0%</b>
Total over next five periods	-31.5%	48.0%	-31.5%	86.7%	-10.3%	<b>47.3%</b>
Average over next five periods	-7.3%	8.2%	-7.3%	13.3%	-2.1%	<b>8.1%</b>

## COMPETITIVE ADVERTISING - SONITE MARKET

### COMPETITIVE ADVERTISING - ESTIMATED TOTAL EXPENDITURES

(all numbers in K\$)

Firm	Brand	Bufs	Singles	Pros	HiEarners	Others	Total
A	SACK	150	350	150	150	850	1,650
	SAND	450	450	450	2,000	450	3,800
	SAPR	200	200	800	800	200	2,200
	SASI	200	1,300	200	200	200	2,100
	<b>TOTAL</b>	<b>1,000</b>	<b>2,300</b>	<b>1,600</b>	<b>3,150</b>	<b>1,700</b>	<b>9,750</b>
E	SEAL	50	50	300	50	50	500
	SEXY	1,450	200	200	200	200	2,250
	SEFA	250	250	300	1,700	250	2,750
	<b>TOTAL</b>	<b>1,750</b>	<b>500</b>	<b>800</b>	<b>1,950</b>	<b>500</b>	<b>5,500</b>
I	SIGN	800	2,600	500	500	1,100	5,500
	SILK	700	400	2,250	950	400	4,700
	<b>TOTAL</b>	<b>1,500</b>	<b>3,000</b>	<b>2,750</b>	<b>1,450</b>	<b>1,500</b>	<b>10,200</b>
O	SOAP	250	250	1,000	1,000	250	2,750
	SONG	650	250	100	100	100	1,200

	SOLO	400	400	400	2,950	400	4,550
	<b>TOTAL</b>	<b>1,300</b>	<b>900</b>	<b>1,500</b>	<b>4,050</b>	<b>750</b>	<b>8,500</b>
U	SUCH	150	1,000	150	150	150	1,600
	SUMO	150	150	150	150	1,000	1,600
	SUBU	1,700	250	250	250	250	2,700
	<b>TOTAL</b>	<b>2,000</b>	<b>1,400</b>	<b>550</b>	<b>550</b>	<b>1,400</b>	<b>5,900</b>
<b>TOTAL</b>		<b>7,550</b>	<b>8,100</b>	<b>7,200</b>	<b>11,150</b>	<b>5,850</b>	<b>39,850</b>
AVERAGE BY BRAND		503	540	480	743	390	2,657
AVERAGE BY FIRM		1,510	1,620	1,440	2,230	1,170	7,970

### COMPETITIVE SALES FORCE - SONITE MARKET

#### COMPETITIVE SALES FORCES - ESTIMATED SIZES

(in number of sales people)

Firm	Brand	Specialty stores	Depart. stores	Mass Merchandis.	Total
A	SACK	1	1	3	5
	SAND	14	19	2	35
	SAPR	2	3	1	6
	SASI	2	2	4	8
	<b>TOTAL</b>	<b>19</b>	<b>25</b>	<b>10</b>	<b>54</b>
E	SEAL	7	11	14	32
	SEXY	3	2	3	8
	SEFA	4	7	13	23
	<b>TOTAL</b>	<b>13</b>	<b>20</b>	<b>30</b>	<b>63</b>
I	SIGN	4	8	12	25
	SILK	17	11	20	48
	<b>TOTAL</b>	<b>21</b>	<b>19</b>	<b>33</b>	<b>72</b>
O	SOAP	15	8	5	28
	SONG	15	8	5	28
	SOLO	13	10	5	27
	<b>TOTAL</b>	<b>43</b>	<b>25</b>	<b>15</b>	<b>83</b>
U	SUCH	30	45	0	75
	SUMO	0	0	45	45

SUBU	30	18	18	66
<b>TOTAL</b>	<b>59</b>	<b>63</b>	<b>63</b>	<b>185</b>
<b>TOTAL</b>	<b>156</b>	<b>152</b>	<b>150</b>	<b>458</b>
AVERAGE BY BRAND	10	10	10	31
AVERAGE BY FIRM	31	30	30	92

**ADVERTISING EXPERIMENT - SONITE MARKET**

**EXPECTED RESULTS WITH INCREASED ADVERTISING BUDGET**

	SEAL	SEXY	SEFA
<b>Change in awareness (%)</b>			
Buffs	0.1%	1.6%	0.4%
Singles	0.0%	0.2%	0.2%
Professionals	1.0%	1.2%	1.0%
High earners	0.1%	0.1%	1.3%
Others	0.0%	0.3%	0.5%
<b>Change in market share (%)</b>			
Buffs	0.0%	1.6%	0.0%
Singles	0.1%	0.0%	0.1%
Professionals	0.4%	0.0%	0.3%
High earners	0.8%	0.0%	2.0%
Others	0.0%	0.1%	0.0%
<b>Change in contribution after marketing (K\$)</b>	<b>922</b>	<b>-202</b>	<b>2,261</b>

*Notes: These results would have been achieved by a given brand if its advertising budget had been increased by 20% and if competitive actions had remained unchanged.*

**SALES FORCE EXPERIMENT - SONITE MARKET**

**EXPECTED RESULTS WITH INCREASED SALES FORCE**

	SEAL	SEXY	SEFA
<b>Change in number of distributors (U)</b>			
Specialty stores	668	464	604
Depart. stores	191	97	214
Mass Merchandis.	248	192	275
<b>Change in market share (%)</b>			
Specialty stores	1.0%	0.6%	1.5%
Depart. stores	0.6%	0.2%	1.7%
Mass Merchandis.	0.3%	0.4%	0.6%
<b>Change in contribution after marketing (K\$)</b>	<b>1,857</b>	<b>352</b>	<b>4,195</b>

*Notes: These results would have been achieved if the number of sales people had been increased by 10 in each channel and if competitive actions had remained unchanged.*