



# PARTICIPANT HANDBOOK

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***How you can save paper.  
Please refer to page 6 before printing this document.***

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# INTRODUCTION

The Markstrat simulation was created more than thirty years ago by Jean-Claude Larréché, Alfred H. Heineken Professor of Marketing at INSEAD, and Hubert Gatignon, The Claude Janssen Chaired Professor of Business Administration and Professor of Marketing at INSEAD, and has been constantly improved since its creation.

Used in combination with traditional training methods such as conceptual sessions or case studies, Markstrat 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. Similar to a flight simulator, this marketing simulation allows students and managers to practice new skills in an intensive time frame and in a risk-free environment before trying them out in their real business environment.

The mathematical model of Markstrat is based on solid theoretical foundations, and the underlying formulas have been extensively tested. These simulations have been used to successfully train a large number of participants and executives from many universities and organizations.

You and your team will be given a company and product portfolio to manage in a dynamic and interactive environment. No previous computer experience is required but it is important to read this handbook prior to your course. If you do not read it carefully, you will run the risk of putting your team at a competitive disadvantage!

## ABOUT STRATX SIMULATIONS

StratX Simulations is a subsidiary of StratX, a unique training and development group founded by INSEAD Marketing Professor, Jean-Claude Larréché. StratX brings together disciplines from leading business schools, management consultants and learning design specialists.

StratX Simulations mission is to develop and market Business Games to the Academic Community. We develop high-tech, sophisticated simulations and tools, in partnership with academic stars such as Jean-Claude Larréché, Huber Gatignon, Chan Kim and Renée Mauborgne, all professors at INSEAD.

StratX Simulations is active in three disciplines: Marketing, Strategy and Management. Our methodology is based on our belief that new skills must be learned through action and experience rather than from books or lectures.

Over the past twenty years, StratX Simulations has designed and developed a portfolio of world-class business simulations, including Markstrat, used in over 500 business schools, or eStrat, used in the L'Oréal E-Strat Challenge for 9 years.

## QUESTIONS & TECHNICAL SUPPORT

We have done our best to make this handbook as clear and complete as possible. But the Markstrat simulation is fairly complex and we know from experience that some topics will require additional explanation. If you have questions regarding this handbook or the simulation we suggest that you review the Frequently Asked Questions (FAQ's), located in the ONLINE DOCS section of your Markstrat Team Software. Other participants may have already asked similar questions and a response may be available in the FAQ's. Save time by checking the site first.

Responses to frequently asked questions do not address specific team situations and do not provide advice or hints on strategy, management, marketing, finances or any other topic. For these subjects, you should only count on your knowledge and your experience.

Here are some examples of questions already addressed in the FAQ's:

- What is the formula for the Stock Price Index?
- How are default decisions calculated?
- Is Markstrat compatible with Windows Vista?
- Can you explain the position of circles on the growth-share matrix?
- Etc ...

If you do not find the response to your question in the FAQ's, please contact your instructor. Do not contact StratX directly as we are not equipped to handle requests from thousands of participants.

# REGISTRATION AND SOFTWARE SETUP

You will have to go through a number of administrative steps before you are able to make your first set of decisions with Markstrat. Please carefully read the following pages as it is important that you perform these steps in the appropriate order and at the right time.

The tasks to perform are listed below and are explained in more detail in the following pages.

- Purchasing your Participant Activation Key (PAK) and a copy of this handbook
- Registering in our database of Markstrat authorized users;
- Downloading and installing the Markstrat Team software;
- Testing your installation and discovering the Markstrat environment with the PRACTICE industry.

## THE REGISTRATION PROCESS

### WHY REGISTER

The use of Markstrat is strictly reserved to registered participants. The registration process will allow you to be uniquely identified in our database. The PAK and registration details that you enter will authenticate you when using the Markstrat software.

Registration is absolutely mandatory, for several reasons.

- As explained in *The Markstrat Overview* section you will have to exchange data back and forth with your instructor during your Markstrat course. All data exchange will take place over the Internet, through a server. For security reasons, you will have to be logged in before you are allowed to transfer data to or from the server.
- The Markstrat software includes a facility allowing your professor to easily send emails to all registered participants, to keep them informed of the latest course news (when will the next decision round start or finish, the latest results, how to better perform in the Vodite market, ...). If you are not a registered user, you will not receive these emails and you might miss some important information.



## HOW TO REGISTER

To register you will need to purchase a Participant Activation Key (PAK) and your own copy of this handbook. Each PAK is valid for the course you link it to when registering and cannot be used for any other course; your registration details are saved for 1 year.

You have several options to obtain a PAK:

- You may purchase your handbook and your PAK through our e-commerce website. You will receive your order by email. Registration in our database will be done automatically upon purchase.
- You may purchase your handbook and PAK in a bookstore. The hardcopy of the handbook will include a sealed envelope with your personal *Markstrat ID Card*, including your PAK. See a sample card in [Figure 1](#). The PAK printed on the front of the card is unique. It is required to register on the Markstrat web site. Keep your personal Markstrat ID Card in a safe place.
- You may also receive a PAK from your professor. This happens if your university purchases PAK directly from StratX in bulk quantity. In this case, you must proceed to the registration process.

To register visit [www.markstrat.com](http://www.markstrat.com) and select the *Registration* section and follow the instructions carefully. You will be asked to enter your PAK, course ID and contact details. The Course ID should be given to you by your instructor. If you do not know your course ID yet, leave the field blank and continue; you will be allowed to enter it later. If the team software has already been installed for you, as is the case in a network installation or for a corporate/executive program you can register directly in the team software, see the *Opening a Markstrat Session* section.

A Markstrat course will usually last several weeks, the best way to remember all of this information is to write them down on the back of the ID card, as shown on the sample card in [Figure 1](#). The additional fields; *Industry name*, *Team name* and *Team Password* will be explained in the next section.



Figure 1 – Sample Markstrat ID card (front & back)

## DOWNLOADING AND INSTALLING THE TEAM SOFTWARE

### HOW TO DOWNLOAD THE SETUP FILE

To download the software, visit our web site at <http://www.markstrat.com>, log in using your PAK and select *Downloads*. Click the Simulation Software link to initiate the download. Your browser may ask you whether you want to execute the file transfer directly from the site or save it to disk. Select the save to disk option and save the file on your local hard drive.

### COMPUTER REQUIREMENTS

The minimum computer configuration required to operate the Markstrat software is the following:

- PC running Windows 95 (or later version) and Internet Explorer 6.0 (or later version);
- Hard disk with at least 20 megabytes of available storage;
- Internet connection ;

### INSTALLING THE SOFTWARE

You should now have on your hard drive a setup file named *Markstrat-Team-Setup-VXX.exe*. Double-click on this file to start the setup. The *Welcome to the InstallShield Wizard for Markstrat* appears, click on the *Next >* button to continue the setup.

A window pops up allowing you specify which folder Markstrat should be installed. We strongly advise you to use the default folder as it will reduce the risk of errors. For instance, reading the FAQ's will be simplified as we will always refer to the default

installation folder. If you need to install Markstrat in another folder, click on the *Browse...* button.

The actual installation starts when you click on the *Next >* button. All files are copied into the folder which you specified. Two of these files are registered automatically in the Windows registry.

The setup utility creates a shortcut called *Markstrat Team* on your desktop. Double-click on this shortcut to launch the application.

## THE PRACTICE INDUSTRY

You can now test your installation as well as your knowledge of the Markstrat environment. All registered users can download a sample data file called PRACTICE. Refer to the Section *Opening a Markstrat Session* for these download instructions. The PRACTICE file is an actual data file, obtained during a past Markstrat course. You will be allowed to browse through all charts and graphs and to make decisions. However, you will not be able to check the results of your decisions as the PRACTICE file will not be run through the Markstrat mathematical model.

## HOW TO PRINT THE PDF VERSION OF THIS HANDBOOK

Paper is too valuable to waste. We advise you to think twice before printing this handbook. The full text is available within the simulation, with a search-engine to help you find the information you need. In addition, context-sensitive help is available on all important forms, such as decision forms.

Should you decide to print this handbook, we advise you to print two pages per sheet, and, if your printer allows it, to print double-sided.

**Figure 2** shows how to print two pages per sheet. Select “Multiple pages per sheet” in the “Page scaling” choice box, and enter 2 in the cell below.

To print double-sided, please refer to your printer documentation.

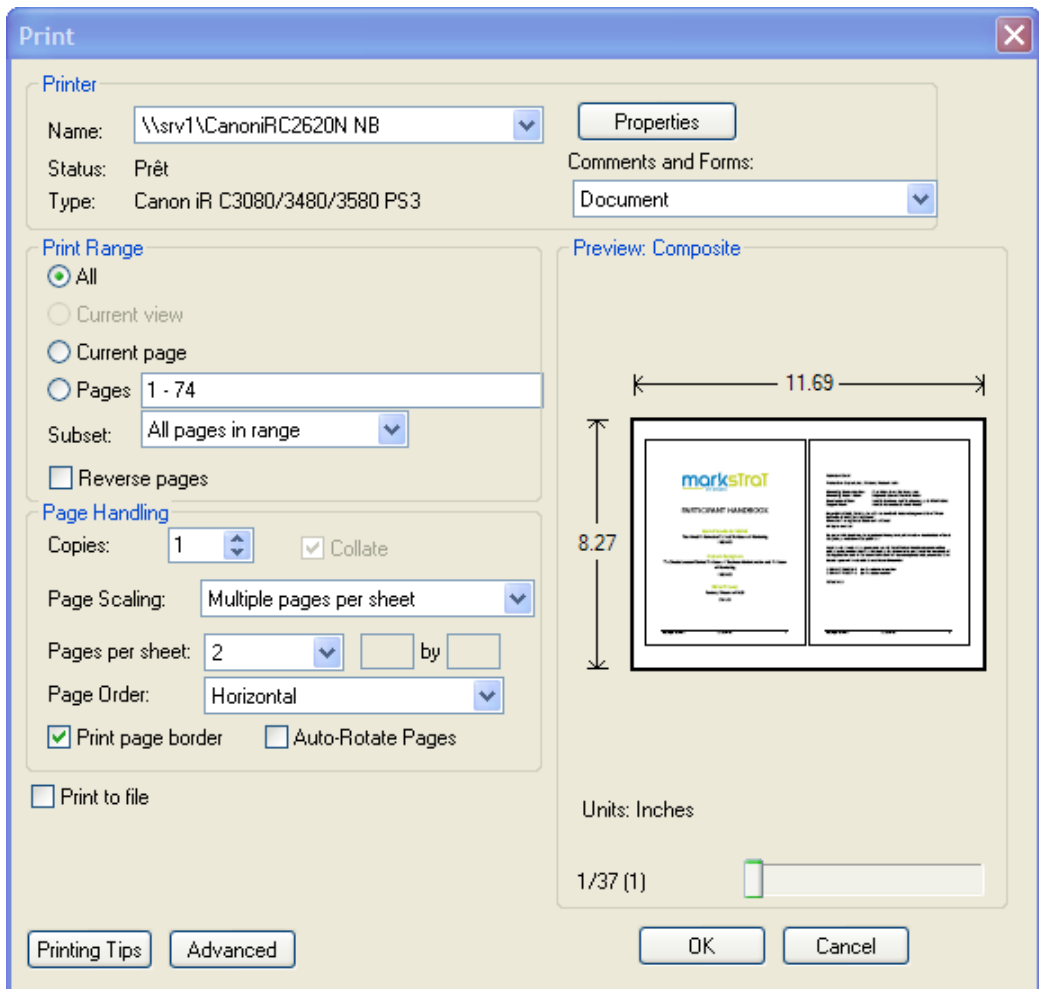


Figure 2 – How to print two pages per sheet

## THE INTERFACE MENU

A detailed overview of Markstrat Team is described in the next section of this handbook. This chapter focuses on the *Interface* menu, which is related to the administration of the course, i.e. the communication between you, your teammates and the Instructor.

During your course, you will go through a number of *decision rounds*, usually 6 to 12 rounds. A decision round starts when you receive the latest simulation results, and it finishes when you submit a new set of decisions to the Instructor. The typical duration of a decision round is from 2 to 4 hours, depending on the time you devote to your Markstrat exercise, or depending on constraints set by your instructor.

You and your teammates will have to decide on how to organize your work. Markstrat includes features to handle various situations. Here are a number of questions that will help you find the best possible organization.

- Will you work non-stop on your Markstrat exercise for 3 hours from start to finish? Or will you spread your work over several days?
- Will all team members meet when they make decisions? Or are you geographically dispersed?
- Will all team members be involved in all decisions? Or will you assign responsibilities (R&D? Production, Finances ...) to team members, each making decisions on his or her own?
- Will you always work on the same computer? Or will you share your time between a computer in the University lab and your home computer?
- Will you always have a good internet connection? Or will you have to work on your Markstrat exercise while being on the go?

In future sections, we will explain how to handle these different situations, and we will then explain various organization strategies.

## DATA EXCHANGE OVERVIEW

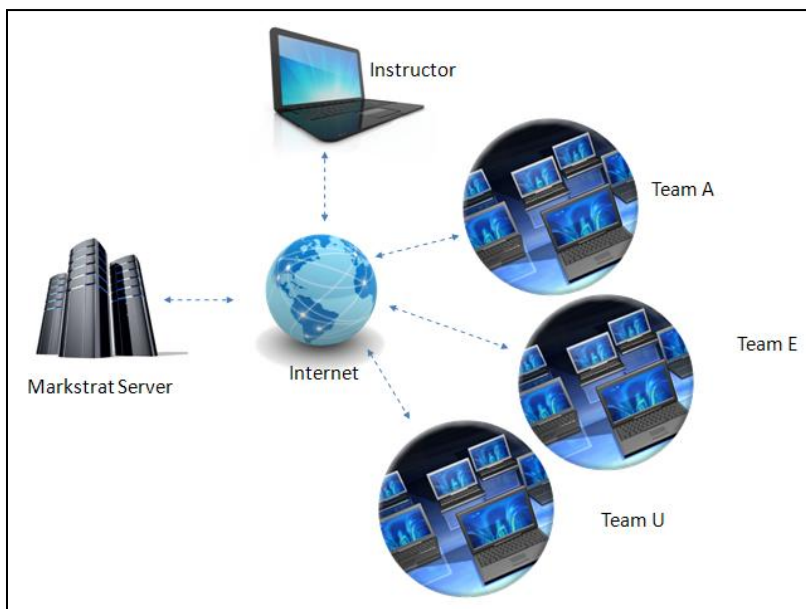
Figure 3 shows an overview of the Markstrat structure. All teams must exchange data back and forth with the instructor during the course. All data exchange will take place over the Internet, through a server, called the Markstrat server. For security reasons, you will have to be logged in before you are allowed to transfer data to or from the server.

The data to be exchanged are the simulation results and the teams' decisions. This data is saved in files called *team files*. There is only one file per team as all members of the same team share the same results and the same decisions. However, you will see that the team file can be duplicated on several computers if two or more teammates want to work in parallel.

This is how the transfers work:

1. Your instructor is in charge of putting your team file onto the Markstrat server at the beginning each decision round, so that you have access to the latest simulation results.
2. Now, you and your teammates are in charge of the team file and can make your decisions
3. The instructor is responsible for taking your team file back from the Markstrat server, at the end of the decision round. This operation must be done just before running the simulation model, to produce a new set of results.

The next section explains that the team file can be downloaded from or uploaded to the Markstrat server; saved on your hard drive, on your LAN or on a removable storage (zip drive, disk, tape, flash USB drive, ...) and duplicated on several computers.



**Figure 3 – Data exchange overview**

## OPENING A MARKSTRAT SESSION

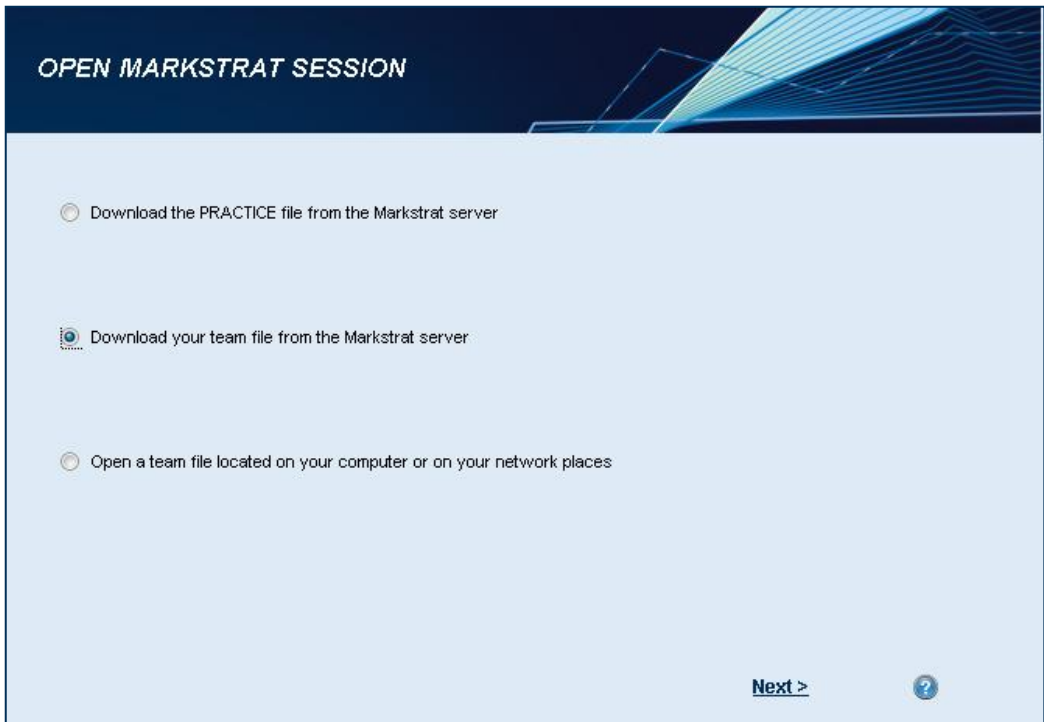
A decision round is composed of one or several working sessions with the Markstrat software. For instance, you could make a detailed analysis of your results on day 1, make R&D and brand portfolio decisions on day 2, make marketing mix decisions on day 3 and finalize everything on the day 4.

The Markstrat software includes an Open Session assistant to guide you through the start of your working session; there are 5 quick steps to go through.

### WHICH TEAM FILE TO USE

The Open Session Assistant automatically starts when you open the Team Software, see [Figure 4](#). If you are already in the software another option is to select [Interface/Open session](#). Three choices are available:

- **Download the PRACTICE file from the Markstrat server.** Select this option if you want to test your installation or to discover Markstrat. All registered users can download a sample data file called PRACTICE. You will be allowed to browse through all charts and graphs and to make decisions. However, you will not be able to check the results of your decisions as the PRACTICE file cannot be run through the Markstrat mathematical model.
- **Download your team file from the Markstrat server.** Select this option to download your team file from the Markstrat server at the beginning of each decision round. The file you will receive will contain the most recent simulation results, provided by your instructor. Another reason to use this option is if you or one of your teammates has already downloaded the file, made some decisions and uploaded the file back to the server. Your team file is named INDUSTRY-TEAMX.zip where INDUSTRY is the name of your industry and X is your team initial (A,E,I,O,U or Y). The file is located in the folder “My Markstrat files” in your “My documents” main folder.
- **Open a team file located on your computer or on your network places.** With this option, you will be able to open a team file that was saved *locally*, at the end of a previous working session. When you close your session, your team file is saved automatically on your hard-drive but you also have the choice to upload it back to the Markstrat server, and/or to save a copy on another local resource, for example your LAN or removable storage.



**Figure 4 – Open session assistant – Source selection**

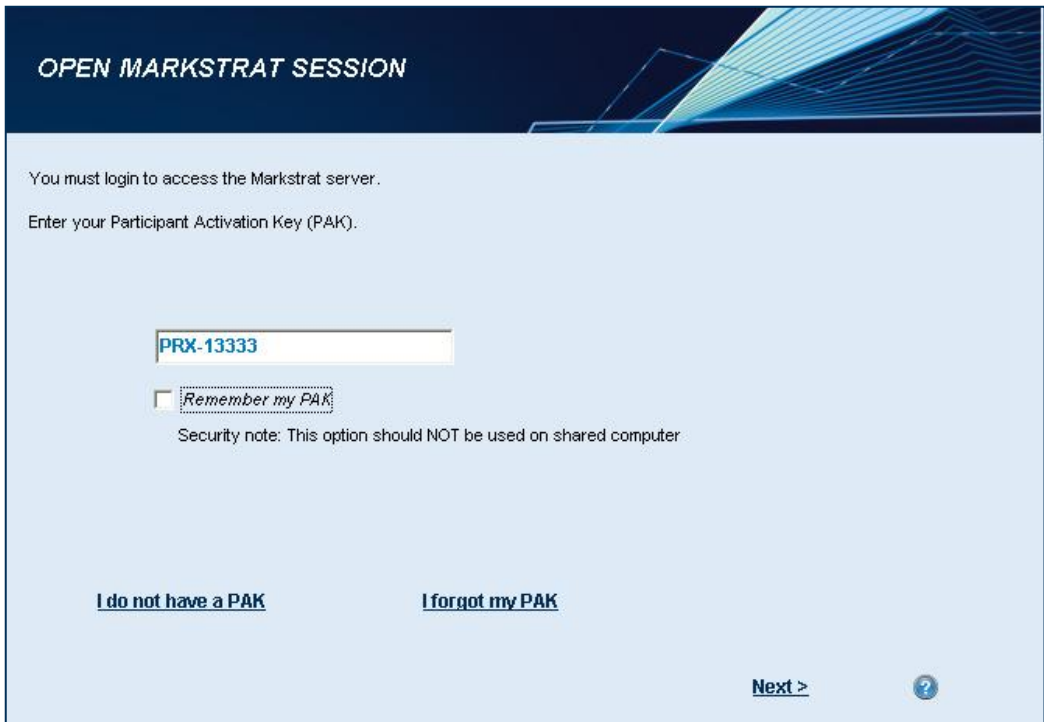
## LOG IN

You must log in each time you connect to the Markstrat server, both to download or to upload your team file. For security reasons, access to the Markstrat server is reserved to registered participants. If you are not yet registered, please refer the *How to Register* section of this manual.

Figure 5 shows your log in screen, enter your PAK (Participant Activation Key) and select *Next >*. The software will connect to the Markstrat server and check your identification. You must be connected to the internet before trying to log in.

If you do not remember your PAK, click on the Lookup button and follow the steps provided.





**OPEN MARKSTRAT SESSION**


You must login to access the Markstrat server.

Enter your Participant Activation Key (PAK).

*Remember my PAK*

Security note: This option should NOT be used on shared computer

[I do not have a PAK](#)      [I forgot my PAK](#)

[Next >](#) 

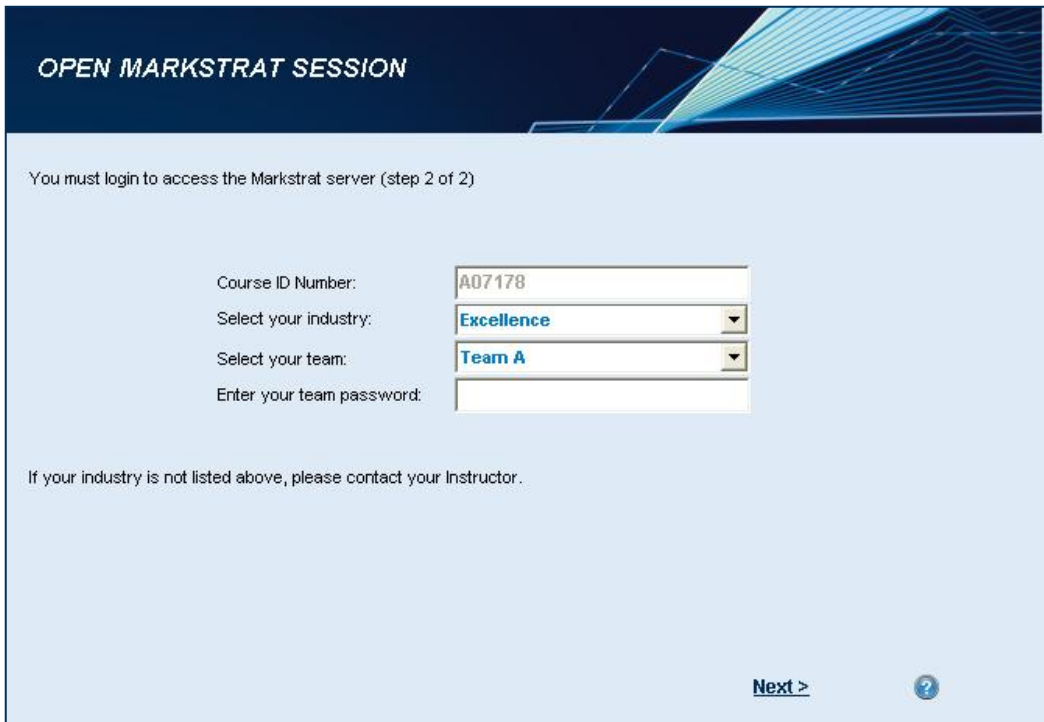
**Figure 5 – Open session assistant – Authentication**

If you are working on your own computer, you can check the option *Remember your PAK*, your information will be stored locally and you will no longer have to type it in. ***This option should not be used on shared computers.***

If you already registered on our website you will see your profile information in this next screen; check to make sure it's correct. If these fields are empty please fill them in to complete your registration.

## **INDUSTRY AND TEAM SELECTION**

This step is required to download your team file from the Markstrat server. You must confirm your industry name, your team name and, for confidentiality reasons, your team password. Type your information and password in the screen shown in [Figure 6](#) and select *Next >*.



**OPEN MARKSTRAT SESSION**

You must login to access the Markstrat server (step 2 of 2)


Course ID Number:

Select your industry:

Select your team:

Enter your team password:

If your industry is not listed above, please contact your Instructor.

[Next >](#) 

**Figure 6 – Open session assistant – Industry and team selection**

These three pieces of information will be given to you by your instructor, most likely during class or by email. Please, write them down on your Markstrat Id Card, as shown on [Figure 1](#).

The Markstrat software will automatically check several requirements on your computer to make sure you can get started without any issues.

## CLOSING A MARKSTRAT SESSION

The Markstrat software includes a *Close Session* assistant to guide you through the end of your working session. As this assistant is easy to use, we only discuss the most important steps here.

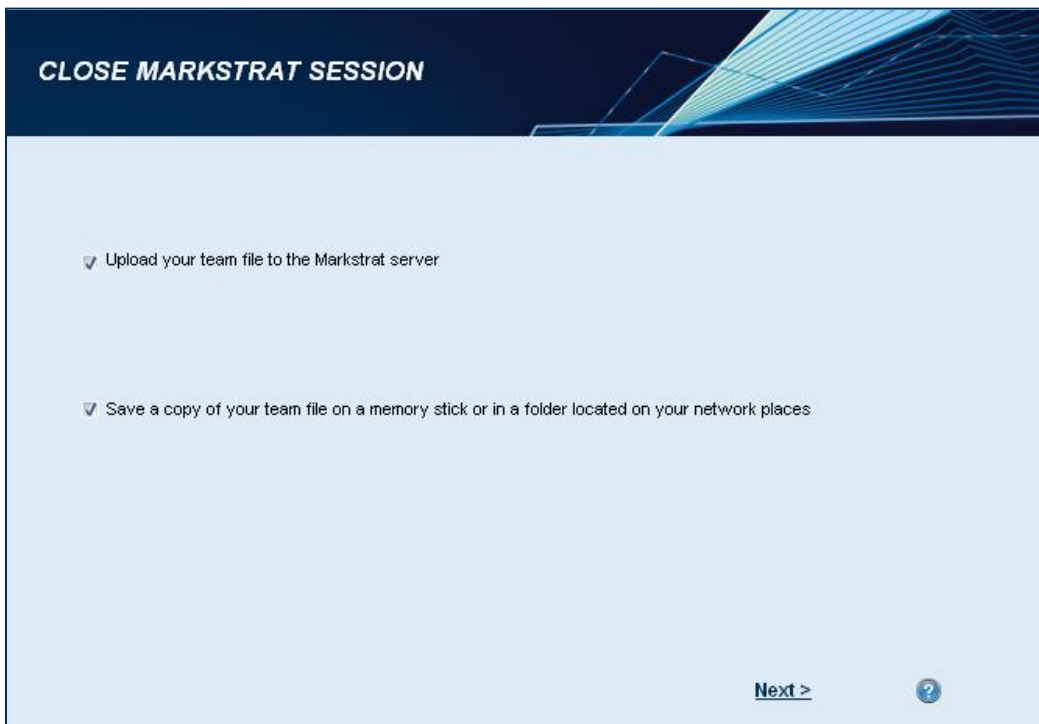
### SAVING YOUR TEAM FILE

Your industry file is saved automatically each time you modify your decisions and click OK. This way, you can interrupt your work at any time and restart it without being connected to the Internet. All you have to do is select the third option from [Figure 4](#) and reopen your team file.

## CLOSING YOUR SESSION

Select **Interface/Close session** to finish the session as shown in **Figure 7**. Two options are available; they can be both activated at the same time.

- **Upload your team file to the Markstrat server.** You should upload your team file each time you modify your decisions so that your teammates, your instructor or yourself can retrieve the file. If you are not connected to internet, you can save a copy of the file locally, open it later and upload it when you have a connection.
- **Save a copy of your team file on a memory stick or in a folder located on your network places.** This option is useful in several situations. For instance, if you want to move your team file onto a computer not connected to internet. In this case, you can save a copy of your team file on a removable storage (zip drive, disk, tape, flash USB drive ...) and then use this storage on another computer.

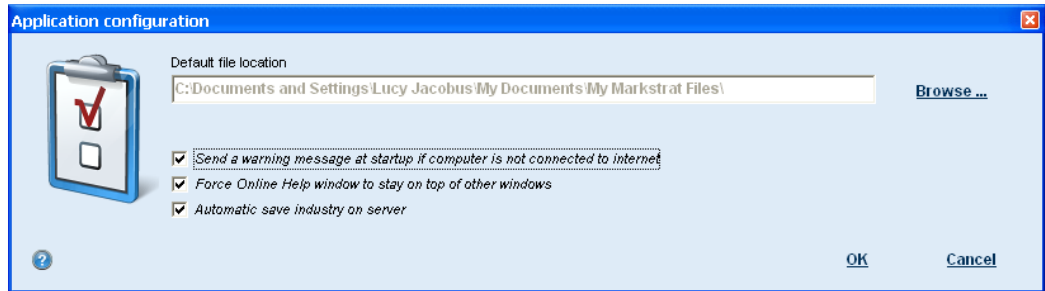


**Figure 7 – Close session assistant – Target selection**

Note that if you select only the second option, ***your team file will not be saved*** on the Markstrat server.

## SOFTWARE CONFIGURATION

Several options are available to configure Markstrat for your needs and preferences. Click on **Interface/Configuration** in the toolbar to open screen shown in **Figure 8**.




**Figure 8 – Application Configuration Screen**

The available options are:

- **Default file location.** This is where the Markstrat software will store your files: industry files, Excel export files, backup files, etc. You may change the location of this folder by clicking the Browse... button.
- **Warning if no internet connection.** If you check this option, Markstrat will inform you if no internet connection is available.
- **Online help window.** If you check this option, the Online help window will stay on the front of all other windows when it is opened.
- **Automatic save.** This will automatically save the industry on the server each time you modify your decisions or click OK.

## PRINTING DOCUMENTS

Markstrat documents can be printed on any Windows-compatible printer. Click on the Print icon  located at the top right corner of the screen. You have several printing options as shown in **Figure 9**:

- The currently displayed screen or graph.
- One of the three decision-related documents: summary of decisions and budget, detailed budget or company report.

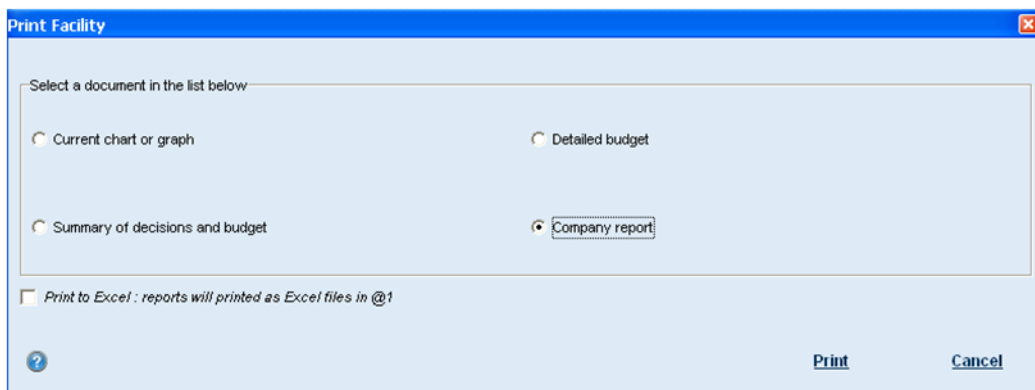


Figure 9 – Printing a Markstrat document

## PRINTING DECISION RELATED DOCUMENTS

While making decisions, you can print the following documents by clicking on the print icon and selecting the required document as shown in [Figure 9](#).

- **Summary of decisions and budget.** A 3- to 5-page document providing a clear view of the current decisions and of the current expenditures granted loans and allocated budget.
- **Detailed budget.** A 2-page document providing a detailed view of the current expenditures, loan, budget modification and allocated budget.
- **Annual Report.** This selection will print: one copy of the Newsletter; one copy of your Company report; and one copy of all available Market research studies. See [Figure 10](#).
- **Excel files only.** If this is checked, Markstrat produces an Excel compatible file containing the document image. The Excel files are produced and saved in your *C:/My Documents/My Markstrat Files* directory. Participants can implement mathematical or statistical models within their Excel compatible spreadsheet package and then use these files to analyze Markstrat data without having to type in all numbers. The Excel files are located in the default directory; their names are formed with the industry name, the team initial and the period number. For instance, [Vultures-U-Studies-P04.xls](#) is the team **U** study document of industry **Vultures** in period **4**.

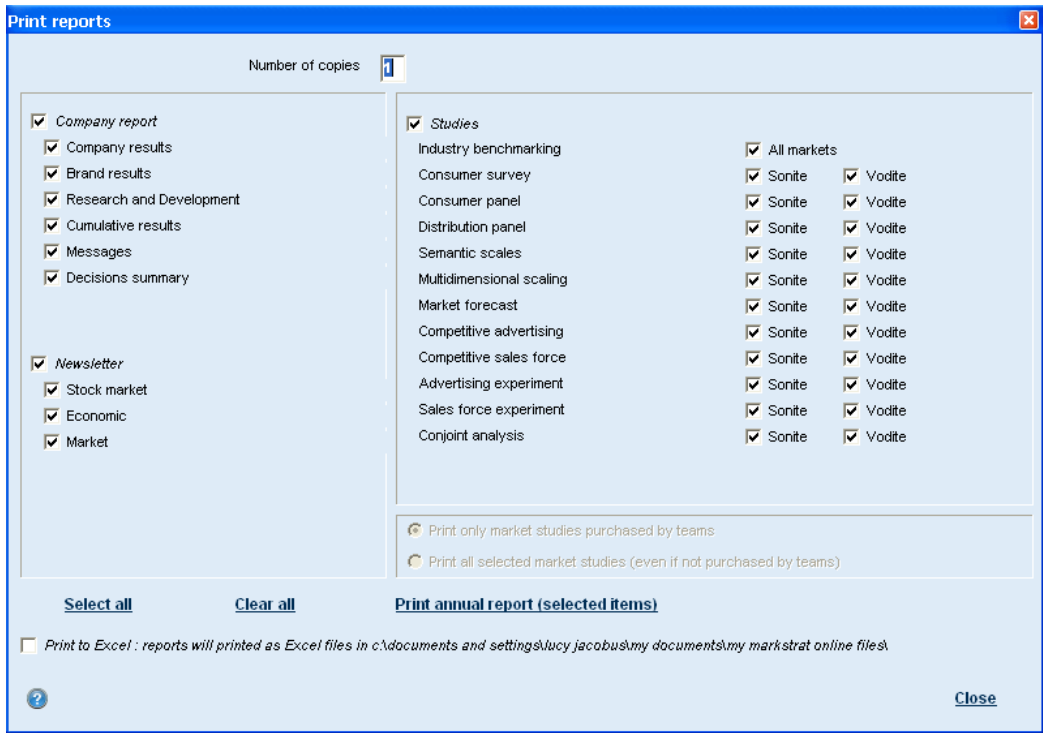


Figure 10 – Printing Annual Report

## PRINTING DATA TABLES OR GRAPHS

Any data table, graph, map or portfolio matrix can be printed by first displaying it and then clicking on the printer button.

## OVERVIEW OF THE MARKSTRAT WORLD

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, your team has no experience in the Markstrat world. 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.

## OVERVIEW OF THE MARKSTRAT WORLD

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 Markstrat 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. With most scenarios, each firm starts in a different situation in terms of product specification, 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. However, Markstrat

includes a few scenarios where all firms start in the exact same situation. These scenarios are called *competition* scenario and your instructor will let you know if you are using them.

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.

## 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 [Figure 11](#). The *base cost* is also an important factor; 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	Kilogram (kg)	10 – 20
Design	Index	3 – 10
Volume	Cubic decimeter (dm <sup>3</sup> )	20 – 100
Maximum frequency (bandwidth)	Kilohertz (kHz)	5 – 50
Power	Watt (W)	5 – 100
Base cost	\$	10 +

**Figure 11 – Sonite main physical characteristics**



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 12](#).

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	17	6	92	23	32	105	204
	SALT	No	17	7	75	35	65	176	279
	SAND	No	14	4	50	40	85	198	514
E	SEMI	Modified	14	5	50	40	80	197	565
	SELF	No	14	5	50	40	80	197	550
	SEBU	No	13	7	40	40	75	197	420
	SERT	No	13	7	50	30	55	198	478
I	SIBI	Modified	19	8	60	36	66	187	271
	SIPE	Cost impr.	20	7	70	15	30	91	203
	SICK	Modified	19	8	60	36	66	187	290
O	SOLD	No	14	7	38	30	55	165	460
	SONO	No	14	5	50	40	77	192	545
	SODU	No	16	7	75	34	54	142	267
	SODE	No	15	7	40	38	77	205	417
U	SUSI	No	17	6	88	23	30	94	220
	SULI	No	14	5	50	40	77	190	540
	SUBF	New	17	4	65	35	70	146	325

**Figure 12 – A typical list of marketed brands**

## 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. They will not be complementary in any way and there will not be any substitution from one to the other. The expertise required of 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 to develop their first Vodite product; recent calculations suggest that an investment of about 10 million dollars may be required for each Vodite.

Experts agree that the main physical characteristics of a Vodite will be the ones described in Figure 13. 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	Meter (m)	5 – 100
Maximum frequency	Kilohertz (kHz)	5 – 20
Diameter	Millimeter (mm)	10 – 100
Design	Index	3 – 10
Weight	Gram (g)	10 – 100
Base cost	\$	10 +

Figure 13 – Vodite main physical characteristics

## NAMING CONVENTIONS

In Markstrat 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. The selected name has no influence on the market response to the brand.

## 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 Buffs, 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.

## VODITE CUSTOMERS

While potential consumers for Vodites are the same individuals as those who buy Sonites, a different segmentation strategy is likely to be appropriate 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 are examined 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 total potential consumers. 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.

## DISTRIBUTION CHANNELS

Sonite and Vodite consumers tend to shop in the following three distribution channels:

- **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.

Within the Sonite market, 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.

## MANAGING YOUR FIRM

The Marketing department that you and your team will be working for is responsible for the design and implementation of the marketing strategy of your division. You will have to decide the overall direction 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 firms' revenues, quality of R&D projects successfully completed, etc. Finally, the best measure of your company's success will be its *stock 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.

## 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. [Figure 14](#) gives a few examples for

varying situations of inventory, production plan and market demand (all numbers are in units).

	A	B	C	D
Potential sales	154 000	154 000	154 000	154 000
Beginning inventory	20 000	20 000	20 000	None
<b>Production plan (your decision)</b>	<b>150 000</b>	<b>100 000</b>	<b>200 000</b>	<b>200 000</b>
Actual production	134 000 <i>(automatically reduced to adjust to potential sales + inventory)</i>	120 000 <i>(automatically increased to adjust to potential sales + inventory)</i>	160 000 <i>(automatically increased to adjust to potential sales + inventory)</i>	160 000 <i>(automatically increased to adjust to potential sales)</i>
Actual sales	154 000 <i>(20 000 + 134 000)</i>	140 000 <i>(20 000 + 140 000)</i>	154 000	154 000
Lost sales	None	14 000	None	0
Ending inventory	None	None	26 000 <i>(20 000 + 160 000 – 154 000)</i>	6 000 <i>(160 000 – 154 000)</i>

**Figure 14 – Inventory and production plan versus market demand**

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, this information 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.

## PRICING

In Markstrat, you must set the *recommended retail price* for each marketed brand. The retail price is the list price for customers. 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 the *Distribution Channel Chapter*.

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. **Figure 15** provides a summary of prices, margins and discounts for a recommended Retail Price of \$400.

	Specialty Stores	Department stores	Mass Merchandisers
<b>Actual retail price</b>	\$400	\$400	\$360
<b>Distribution margin</b>	40% – \$160	30% – \$120	30% – \$108
<b>Selling price</b>	\$240	\$280	\$252
<b>Transfer cost</b>	\$123	\$123	\$123
<b>Unit gross contribution</b>	\$117	\$157	\$129

**Figure 15 – From retail price to unit contribution**

Dumping is strictly forbidden in the Markstrat world; therefore the recommended retail price must be set so 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 the 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.*

## COMMUNICATION

You must make several communication decisions each period. First, you should determine the advertising budget allocated to each brand. This budget will be used to purchase media space and time. Second, you must specify the budget allocated to advertising research. This finances the creative work, media selection, or other activities conducted by advertising agencies that 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 want to reposition an existing one. In these last two instances, higher percentages are recommended (in the range of 15 to 20%).

Third, you are required to specify which segments should be targeted with your advertising. 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 weak a given brand is, or how powerful another one is. The *Positioning through Advertising* chapter at the end of the handbook is devoted to brand positioning through advertising and explains how to set perceptual objectives.

## SALES FORCE

Your sales force is organized in three groups; each group is specialized to focus 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. 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.

## 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 of the studies you purchase can be 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 in [Figure 16](#) and all studies are detailed further in the *Understanding your Annual Report* chapter.

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

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

Figure 16 – Available market research studies

## RESEARCH & DEVELOPMENT

The Marketing department is responsible for initiating research & development projects. Making R&D decisions is a crucial task because: (1) existing products will probably have to be improved during their lifetime 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. The R&D department is responsible for conducting the actual research & development work. The *Positioning and Research & Development* chapter is devoted to the interface between the Marketing and Research & Development departments.

## 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
Advertising Media	Operating Cost		
Advertising	Hiring & Training	Development	Study Costs
Research	Costs	Budgets	
	Firing Costs		
<i>For all markets &amp; all brands</i>	<i>For all channels</i>	<i>For all markets &amp; all projects</i>	<i>For all markets &amp; all studies</i>

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 where resources are reallocated to other divisions of the company 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 your division can continue operations.

In general, your budget for each period will be between \$7,000,000 and \$20,000,000 (adjusted for inflation). 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 might be a waste of money.

## UNDERSTANDING YOUR ANNUAL REPORT

You will receive your annual report at the beginning of each decision round. This report provides you with the results of the period that 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*. Before reading this chapter, we suggest that you install the Markstrat software and open the PRACTICE industry, as explained previously.

### 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 show the 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. Volume and retail sales are given in absolute values and show the percentage change from the previous period.

**Information on Vodite market** – The same data as above is provided for any Vodite products on the market.

### 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
- Brand results
- Research & Development results
- Cumulative results
- Decision summary

## COMPANY RESULTS

The *Company Scorecard* included in this section, 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, show the percentage change from the previous period and show the percentage change since period 0. This section also incorporates the *Company Performance* statement, illustrated in [Figure 17](#). This chart is a simplified Profit and Loss statement for your company; the basic financial elements are explained below.

- **Units sold** : Number of units purchased by consumers.
- **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 (COGS)** : 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 - COGS - inventory costs - inventory disposal loss.
- **Contribution after marketing (CAM)** : CBM - (advertising + advertising research + sales force).
- **Interest paid** : Interest paid on loans granted in previous periods.
- **Exceptional cost or profit (ECP)** : Exceptional items such as brand withdrawal costs.
- **Net contribution** : CAM – (market research studies + R&D + interest + ECP).

- **Next period budget** : 40% of net contribution; minimum = M\$ 7; maximum = M\$ 20 (adjusted for inflation)

	Unit	Total	Sonite market	Vodite market
<b>Sales</b>				
Units sold	U	551 095	551 095	0
Average retail price	\$	251	251	0
Average selling price	\$	166	166	0
Revenues	K\$	91 633	91 633	0
<b>Production</b>				
Units produced	U	551 200	551 200	0
Cost of goods sold	K\$	-66 438	-66 438	0
Inventory holding cost	K\$	-1	-1	0
Inventory disposal loss	K\$	-715	-715	0
Contribution before marketing	K\$	24 479	24 479	0
<b>Marketing</b>				
Advertising expenditures	K\$	-3 710	-3 710	0
Advertising research expenditures	K\$	-440	-440	0
Sales force	K\$	-2 604	-2 604	0
Contribution after marketing	K\$	17 725	17 725	0
<b>Other expenses</b>				
Market research studies	K\$	-621	-528	-56
Research and development	K\$	-2 510	-2 510	0
Interest paid	K\$	0		
Exceptional cost or profit	K\$	0		
<b>Net contribution</b>	K\$	<b>14 594</b>		
<b>Next period budget</b>	K\$	<b>8 700</b>		

Figure 17 – Company performance – Sample chart & explanations

## BRAND RESULTS

This section provides the *Contribution by Brand* chart, detailed in Figure 18. This chart is similar to the *Company performance* chart; it provides financial elements for each marketed brand, as explained below:

- **Units sold** : Number of units purchased by consumers.
- **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 (COGS)** : 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 – COGS – inventory holding costs – inventory disposal loss.
- **Contribution after marketing (CAM)** : CBM – (advertising + advertising research + sales force).

This section also shows the total market share of each brand, and its distribution coverage, i.e. the number of stores carrying the brand.

Sonite Brands	Unit	Total	SIBI	SIPE	SICK
Base R&D project			PSIB5	PSIR4	PSIB5
<b>Sales</b>					
Units sold	U	551 095	411 600	114 000	25 495
Average retail price	\$	251	265	192	283
Average selling price	\$	166	174	133	187
<b>Revenues</b>	<b>K\$</b>	<b>91 633</b>	<b>71 749</b>	<b>15 124</b>	<b>4 760</b>
<b>Production</b>					
Units produced	U	551 200	411 600	114 000	25 600
Current unit transfer cost	\$	-	129	86	129
Average unit transfer cost	\$	121	129	86	129
Cost of goods sold	K\$	-66 438	-53 298	-9 839	-3 301
Units in inventory	U	105	0	0	105
Inventory holding cost	K\$	-1	0	0	-1
Inventory disposal loss	K\$	-715	-1	0	-714
<b>Contribution before marketing</b>	<b>K\$</b>	<b>24 479</b>	<b>18 450</b>	<b>5 285</b>	<b>744</b>
<b>Marketing</b>					
Advertising expenditures	K\$	-3 710	-1 806	-1 804	-100
Advertising research expenditures	K\$	-440	-294	-136	-10
Sales force	K\$	-2 604	-933	-1 458	-213
<b>Contribution after marketing</b>	<b>K\$</b>	<b>17 725</b>	<b>15 416</b>	<b>1 887</b>	<b>422</b>

Figure 18 – Brand contribution – Sample chart & explanations

## RESEARCH & DEVELOPMENT RESULTS

This section provides the list of all R&D projects launched in the previous periods and provides the following details for each project. Figure 19 shows a list of R&D projects, the following information is a detailed explanation of this screen.

- **Column 1** – Project name.
- **Columns 2 to 6** – 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.

- Columns 7 and 8** – 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.
- Column 9** – The total cumulative budget invested so far in the project. Note that a project may be completed over several periods as explained in the *Making Decisions* chapter.
- Column 10 (project not completed)** – 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. You may attempt to finish the project with a lower budget, but its successful completion is not guaranteed.
- Column 10 (project completed)** – The period which the project was completed.

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
PVARI	51	12	68	7	70	223	223	7 260	Avail. in P3
PVOOM	78	14	68	7	70	253	253	2 943	Avail. in P4
PVOOT	67	7	70	7	70	217	217	100	2 000
PVOT2	57	12	55	7	70	285	239	1 710	Avail. in P5
PVOT3	57	12	55	7	70	239	239	500	170
PVOT4	60	12	53	7	60	261	261	1 000	890
PVOT5	60	12	53	7	60	261	261	100	1 790

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

Figure 19 – R&D report – Sample chart & explanations



## CUMULATIVE RESULTS

Cumulative results on sales, production and marketing are provided in this section. It includes cumulative data since period 0, for all of the brands introduced and marketed since that time. Company performance results are also provided in the same format as the one illustrated in [Figure 17](#).

## DECISION SUMMARY

This section recalls the decisions that your team made at the beginning of the current period: brand management, sales force management, R&D projects and the market research studies purchased. The previous management team made the decisions shown in Period 0.

## MARKET RESEARCH STUDIES

You may purchase up to 23 Market Research Studies each period. The following list provides a brief summary of information within 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 that would 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* – the percentage of potential consumers in each segment who can spontaneously recall a given brand name; (2) *brand purchase intentions* – the 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 for each physical characteristic. Finally, it provides the importance of each characteristic, in other words, the weight each characteristic holds in the buying decision. Additional charts and graphs are available in the simulation. For instance, you 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** – 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 their interpretation will be explained in the next chapter.

**Market forecast** – This 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; these are less accurate and often turn out to be optimistic.

**Competitive advertising estimates** – This study estimates the total advertising expenditures for each competitive brand by segment. This study also provides an estimate of the communication messages used by competitive brands in their advertising. Finally, it estimates the quality and design of the advertising copy, which depends on how much was spent in advertising research.

**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 has 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.

**Conjoint analysis** – This study is rather complex and expensive and is therefore not always made available to participants. 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.

## MAKING DECISIONS

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* that you 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, you will submit your decisions to your instructor, together with the decisions of your competitors. The Markstrat software model will compile the data 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 up to twelve simulated years.

## GROUP DYNAMICS

During the first set of decisions, it is essential that you develop a good working relationship within your group. In the beginning 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 that each member concentrates 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 Markstrat experience.

## MARKSTRAT MAIN SCREEN

The Markstrat main screen is shown in [Figure 20](#). Markstrat is a standard Microsoft Windows application like Word or Excel, with a menu bar at the top, a tool bar just below, and a main area to display charts, graphs or decision screens. Under the main menu bar you will see links to key charts, graphs, decision forms and tools, online docs as well as links to your recent activity.

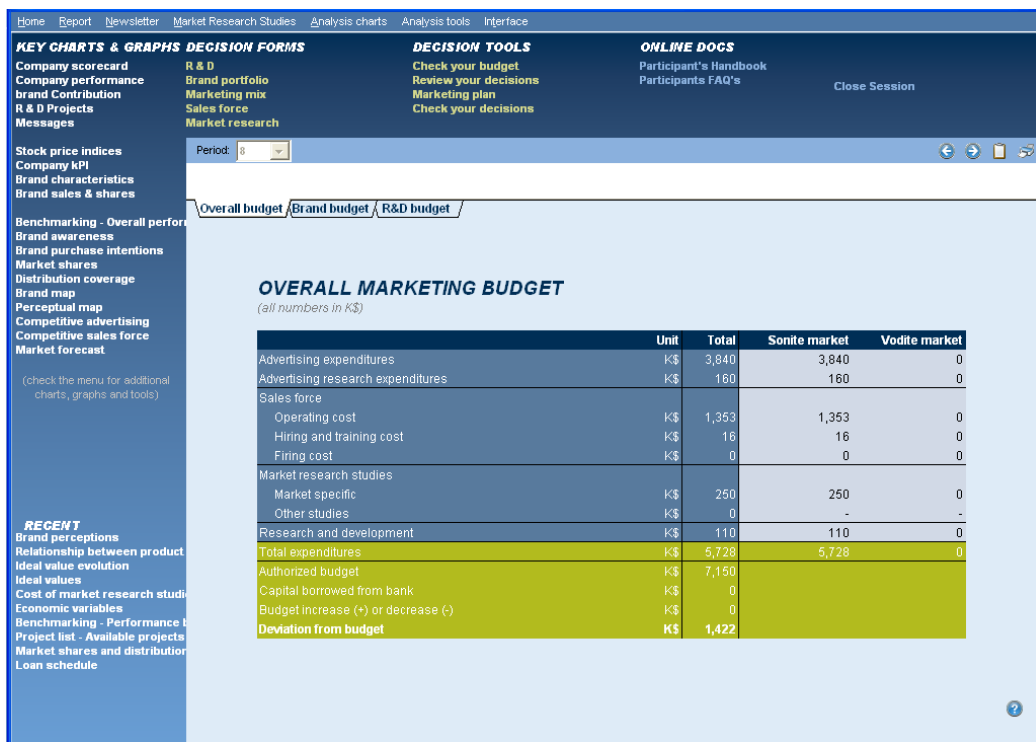


Figure 20 – Markstrat Main Screen

The menus at the top give you access to the entire set of charts, graphs and tools; they are labeled:

**Home, Report, Newsletter, Market studies, Analysis charts, Analysis tools, Interface**

**Home.** This menu gives you access to the five main screens that should be used to make decisions: Brand Portfolio; Production, Price & Advertising; Sales Force & Distribution; Market Research Studies; and Research & Development. You will see a series of links under the main menu bar for each Decision form. The link for Decision Tools includes additional summary charts to help you make your decisions: Budget, Decision summary, Errors & warnings and Past decisions. The Marketing plan tool will help you calculate your company net contribution based on your current decisions and on sales estimates. Finally, the 'Loan and Budget Modification' chart in Decisions Summary will provide information on loans and budget modifications granted by your Instructor.

**Report, Newsletter, Market studies.** These menus provide the same information as the printed your annual report, plus a few additional graphs.

**Analysis charts, Analysis Tools.** These menus provide a comprehensive set of graphs and tools to help you analyze the market and competitive offerings.

**Interface.** Using the Open/Close session assistant you can upload or download files to and from the Markstrat server and backup files locally. You should use this menu to retrieve the latest results from the instructor and to transfer your decisions to the instructor.

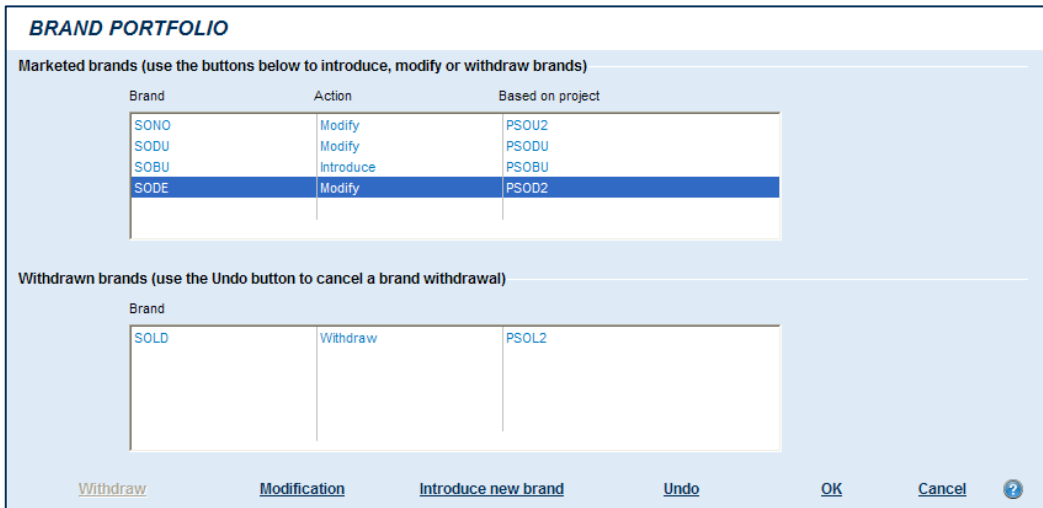
## BRAND PORTFOLIO DECISIONS

The Brand portfolio decision screen is displayed in **Figure 21**. It enables you to introduce new brands and to modify or withdraw existing ones. The team may develop up to 5 Sonite brands and 5 Vodite brands per period.

### INTRODUCING A NEW BRAND

After clicking on the *Introduce new brand* button, a decision screen appears that will help you bring a new Sonite and/or Vodite brand to market. The name of the new brand must be entered using the naming conventions discussed previously. The name of a completed R&D project –giving the technical specifications for producing the brand– must be selected from the list of available R&D projects, the available R&D projects chart is shown as a reference.

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.



**Figure 21 – Brand Portfolio decision screen**

## MODIFYING AN EXISTING BRAND

After selecting the brand to be modified, click on the *Modification* button. A decision screen appears. The R&D project name corresponding to the new product specification must be selected from the completed R&D projects. 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 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 you to cancel a brand withdrawal. Select the name of the withdrawn brand and then click on the *Undo* button.

## MARKETING MIX DECISIONS

The Production, Price & Advertising decision screen is displayed in [Figure 22](#). You can switch between the Sonite and Vodite brands by clicking on the drop-down (top left). The brands that you have chosen to market next period are listed on the tabs at the top of the screen. Click on the tab of the brand to be displayed and enter your marketing mix decisions.

### 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 the 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, usually 50 to 80% hence, the loss incurred

for inventory disposal is usually between 20% and 50%. The exact percentage can be found in the Newsletter.

## PRICE

Enter the *recommended retail price* in dollars, the list price of the brand. This corresponds to the price usually paid by customers, except for shoppers using mass merchandisers which practice a 10% discount.

**PRODUCTION, PRICE AND ADVERTISING - SODU**

SONO SODU SOBU SODE

Production		Period 7	Period 8	% Change
Base R&D project	PSOSI		PSODU	
Brand production level (KU)	85	120		41.2
Inventory sold to trading Co (KU) (current inventory : 0 KU)	0	0		

Pricing		Period 7	Period 8	% Change
Recommended retail price (\$)	267	289		8.2

Advertising		Period 7	Period 8	% Change
Advertising media (K\$)	2 005	3 000		49.6
Advertising research (K\$)	326	150		-54.0

Targeted segments (%)						
Total	Bufs	Singles	Pros	HiEarners	Others	
100	0	50	0	0	50	

Perceptual objectives		Dimension 1	Objective	Dimension 2	Objective
MDS dimensions	Economy	-14	Performance	12	

OK Cancel ?

Figure 22 – Marketing Mix decision screen

## 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 add to 100%.



## PERCEPTUAL OBJECTIVES

When you want to reposition a brand with advertising, as explained in the next section, you need to inform the advertising agency of the desired perceptual objectives for the brand. This is a complex decision that you will 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 the *Understanding your Annual Report* chapter.

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

Perceptual objectives can 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, select the dimensions in the *Dimension 1* and *Dimension 2* boxes. Finally, the objective level 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 the single dimension indicated in *Dimension 1*.

## MARKET RESEARCH STUDIES

The Market Research Studies decision screen is displayed in [Figure 23](#). To purchase market studies, simply check the boxes that correspond to the studies you would like. The cost of these studies appear 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.

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. If you order these studies and if no brands were marketed in the period, you will not be charged for them.

**MARKET RESEARCH STUDIES**

Check the market research studies that you want to order

	Cost (K\$)		
Industry benchmarking	38	<input checked="" type="checkbox"/> All markets	
Consumer survey	127	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Consumer panel	216	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Distribution panel	139	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Semantic scales	26	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Multidimensional scaling	88	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Market forecast	50	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Competitive advertising	76	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Competitive sales force	38	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Advertising experiment	64	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Sales force experiment	88	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
Conjoint analysis	88	<input checked="" type="checkbox"/> Sonite	<input checked="" type="checkbox"/> Vodite
<b>Total cost (K\$)</b>	<b>1 038</b>		


[Order all studies](#)
[Order no studies](#)
[OK](#)
[Cancel](#)


Figure 23 – Market Research Study decision screen

## SALES FORCE AND DISTRIBUTION

The Sales Force and Distribution decision screen is displayed in Figure 24. Your company's sales force is organized by distribution channel. You will have to decide how many salespeople to assign to each distribution channel for each brand.

Enter the number of salespeople that you wish to assign to each brand and 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 and brands at no cost.

The input form automatically calculates the cost of your sales force, as well as the allocation by channel and brand cost. The two tabs “View %Total by Channel” and “View %Total by brand” enables you to visualize how to allocate your sales force across channels and brands.

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

**SALES FORCE AND DISTRIBUTION**

Input decisions / View %Total by Channel / View %Total by Brand /

Enter the number of salespeople that you want to allocate to each brand in each channel

	Specialty stores	Depart. stores	Mass Merchandis.	Total	Cost (K\$)	% Cost
SONO	20	11	10	41	1 071	18%
SODU	16	12	10	38	992	17%
SOBU	15	15	15	45	1 175	20%
SODE	10	4	2	16	418	7%
VOOM	13	7	5	25	653	11%
VOOT	11	20	23	54	1 410	24%
VOOZ	8	2	0	10	261	4%
Total	93	71	65	229	5 979	101%
Cost (K\$)	2 428	1 854	1 697	5 979		
% Total	41%	31%	28%	100%		

Assistant... OK Cancel ?

Figure 24 – Sales Force and Distribution decision screen

## RESEARCH & DEVELOPMENT DECISIONS

Research & 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 the *Understanding your Annual Report* Chapter.

The Research & Development decision screen is displayed in Figure 25. Buttons at the bottom of the window are used to start *new* R&D projects; *shelve* an incomplete project; or *continue* a project that 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. You can switch between the Sonite and Vodite projects by clicking on the drop-down (top left).

### SPECIFYING A PROJECT

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 *Request project at minimum base cost*. The allocated budget corresponds to the budget devoted to the project over the next period.

Figure 25 – Research & Development decision screen

## FEASIBILITY STUDIES

Feasibility studies allow you to determine the minimum cost at which the product can realistically be manufactured, and the R&D budget required to guarantee its completion at the currently requested base cost. A feasibility study costs \$100,000 and takes one period to complete, the information is provided in the next period within the R&D section of the company report.

## R&D ON-LINE QUERIES

Alternatively, you can initiate up to five *on-line queries per period*, which will give you the same information as the feasibility studies. These queries are done immediately and thus do not have the same accuracy as feasibility studies. On average, one-line query results are over-estimated by as much as 50%.

You may order an on-line query only when the project is fully specified, i.e. when you have entered the physical characteristics and the requested base cost. Click the *On-line query* button and follow the instructions. You will first receive a reminder of how many queries you have done so far; remember that the number of on-line queries authorized

in a period is limited. Then, clicking on the *Query* button will open a screen such as the one in [Figure 26](#).

This screen provides you with: (1) the minimum cost at which the specified product can realistically be manufactured; (2) a reminder of the requested base cost that you have entered in the project decision screen (see [Figure 25](#)); (3) the budget required to guarantee its completion at the currently requested base cost.

Number of allowed on-line queries	5
Number of queries already made	2

[Query](#)

**Response from R&D to on-line query**

Minimum base cost (\$)	154
Requested base cost (adjusted to minimum value if too low) (\$)	175
Budget required for completion at requested base cost (K\$)	1530

[Adjust decisions](#) [Close](#)

**Figure 26 – On-line query sample screen**

If you are satisfied with the results, click on the *Adjust decisions* button to automatically adjust your project decision form. Otherwise, you may change the technical specifications of your project and/or the requested base cost, and then run a new query.

Finally, please note that if you change the specifications of your project or the requested base cost after you have run the on-line query, you no longer have the guarantee that the project will be completed in one period. In this case, you should run a new query to adjust your decisions according to the new specifications.

## CHECKING YOUR DECISIONS

Before submitting your decisions to the Instructor, it is recommended that you check that Markstrat has not discovered any mistakes with your decisions. The Decision Tools will help you verify your decisions.

- **Budget** (see [Figure 27](#)). 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.

- **Review your Decisions.** The Summary button leads to five charts that provide a detailed description of all decisions made by your team.
- **Check your Decisions** (see Figure 28). This screen will show a list of errors and warnings generated by the simulation. 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.

	Unit	Total	Sonite market	Vodite market
Advertising expenditures	K\$	11 198	5 691	5 507
Advertising research expenditures	K\$	1 182	599	583
Sales force				
Operating cost	K\$	5 802	3 547	2 255
Hiring and training cost	K\$	0	0	0
Firing cost	K\$	177	108	69
Market research studies				
Market specific	K\$	830	456	374
Other studies	K\$	38	-	-
Research and development	K\$	3 970	1 490	2 480
<b>Total expenditures</b>	<b>K\$</b>	<b>23 197</b>	<b>11 891</b>	<b>11 267</b>
Authorized budget	K\$	24 850		
Capital borrowed from bank	K\$	0		
Budget increase (+) or decrease (-)	K\$	0		
<b>Deviation from budget</b>	<b>K\$</b>	<b>1 653</b>		

Figure 27 – Decisions – Overall marketing budget

The following errors and warnings have been found in your decisions:

Missing research and development decisions.  
 Incorrect inventory disposal decision for brand SONO.  
 Incorrect inventory disposal decision for brand SONO  
 The advertising media budget for brand SOBU is incorrect.  
 The advertising research budget for brand SOBU is incorrect.  
 Incorrect production plan for brand SOBU  
 Price decision not yet taken for brand SOBU

The price of brand SOBU is equal to 0, probably because you have not yet made your decisions on this brand.

Figure 28 – Decisions – Errors & Warnings

## VALIDATING DECISIONS WITH THE MARKETING PLAN TOOL

After accessing the marketing plan section there are five distinct components which appear in the tabs at the top of the screen: Segment sizes, Brand shares/sales, Distribution mix, Brand contribution, and Company performance. Click on the corresponding tab accesses each component of the marketing plan. The first three correspond to the different types of estimates that you have to type into the plan. The last two provide estimated results based on both your decisions and your estimates.

### MARKETING PLAN - SEGMENT SIZES

The first estimate you must provide as input to the marketing plan concern the size (in thousands of units) of each segment. Click on the Segment sizes tab in the Marketing Plan section. The chart at the center of the screen initially displays each segment's size last period. The estimates for the variation of the segments' sizes next period should be entered in one of the two columns on the right-hand side, in thousands of units or in percentage change. You can view the Sonites and Vodites screen by using the drop down in the top left-hand corner of this screen.

Two automated estimation approaches are available. You can click on the "Same as last period" button to use segment's size from the previous period, or click on the "As in market forecast study" selection to input the segment size projections from market research. The second alternative is available only if the corresponding study has been purchased. If this is not the case, the selection is grayed. These two automated approaches provide a basis on which individual adjustments can be made, either in thousands of units or in percentage change.

### MARKETING PLAN - BRAND SALES OR BRAND SHARE ESTIMATES BY SEGMENT

One of the most important aspects of marketing planning is the anticipation of the market response to a specific set of decisions or actions. In this screen, anticipated market reactions must be entered for each brand in each segment. They can be specified either in terms of brand shares or brand sales by selecting the appropriate tab selection at the bottom of the screen. The numbers for the previous period are displayed for each brand in each segment as well as for the total market. An estimate for the next period can be entered either as a target or as a change from the previous period.

When making these estimates, make sure to take into account your own portfolio decisions as well as the ones of your competitors. In particular, brand introduction or

upgrade should be examined closely to best estimate their impact on brand market shares.

Assuming that brand share inputs are first selected, one easy way to start is to use the same brand shares as in the previous period. Estimates can then be changed for each brand/segment combination, either as expected brand shares or as expected changes in brand share points. Whenever a change is made in any of the estimates, the number for the other mode of entry is automatically updated. The total brand share estimates for the market as a whole are also updated in the right-hand column. Simultaneously, the estimates of the corresponding brand unit sales in each segment are calculated based on the segment sizes previously defined and the brand share inputs. These numbers can be displayed by selecting the brand sales tab selection at the bottom of the screen. The estimates of brand sales can then be updated as targets or as changes from the previous period in the same way as for the brand shares.

The approach described above consists of:

1. Starting with brand share estimates,
2. Displaying the expected brand sales resulting from the segment size and market share estimates, and
3. Updating selected brand sales estimates. It reflects the most logical process but it is also possible to directly set estimates of expected brand sales. In this case, brand share estimates are calculated on the basis of the brand sales and the segment sizes.

## **MARKETING PLAN - DISTRIBUTION MIX**

The price received by the firm for the sale of a product is equal to the retail price minus the distributor's margin. As the distribution margin varies across channels, the average selling price of a brand will depend on the mix of its sales across the channels. To calculate the financial contribution of a brand requires an estimate of its distribution mix.

Selecting the corresponding tab in the marketing plan section can make the Distribution mix estimates. They can be set to the same values as in the last period, or be calculated automatically based on the shopping habits study, by selecting the appropriate tab selection at the bottom center of the screen. The second alternative is available only if this market research study has been purchased in the current period. In this case, Markstrat uses the brand sales projections entered in the previous steps of the marketing plan. For each brand, the purchases of each segment are split by channel based on the shopping habits data. The sales of a brand in a given channel are obtained by total over the segments.



The distribution mix estimates can also be entered or updated manually one by one. You should be particularly careful that the vertical sum of the percentages adds up to 100. The average distribution margin corresponding to a given mix is displayed on the bottom line and is updated any time a change is made in the chart.

## MARKETING PLAN - PROJECTIONS

On the basis of the decisions and the estimates for segment sizes, brand shares, brand sales, and the distribution mix, the marketing plan section can make financial projections for the next period. These projections can be displayed by selecting the Brand contribution and Company performance tabs at the bottom of the screen. When making financial projections, the software also makes a number of consistency checks; an errors and warnings screen may be displayed if any problems are encountered. Common inconsistencies include forgetting to enter some estimates, the distribution mix for a brand not adding up to 100%, or the sales forecast for a brand exceeding the available inventory volume plus the production plan. Such errors and warnings will require corrections in either the marketing plan estimates or the decisions. In the first case, just select the appropriate tab and make the desired adjustments before returning to the financial projections. In the second case, you can go back to the decision menu by clicking on the close selection at the bottom of the screen, make any needed changes to the decisions, and return to the marketing plan section. The previous estimates entered in this marketing plan section have been saved and will be used for financial projections unless modified.

Selecting the Brand contribution tab gives access, if all consistency checks are passed, to a pro forma statement of brand contribution. From the top line of the statement, units sold, to the bottom line, contribution after marketing, the software uses your decisions and estimates to produce a simulation of the brand contribution statement, which will appear in the company report. For instance, the average selling price is obtained from the retail pricing decision and the average distribution margin calculated from the distribution mix estimates. Similarly, the inventory level is calculated on the basis of the previous inventory (factual data) plus the production plan (a decision) minus the sales estimates, allowing for upward or downward adjustments possible in the production process. A separate brand contribution report is available for Sonites and Vodites, simply by selecting the Sonite or Vodite drop-down at the top of the screen.

Selecting the Company performance tab gives access, if all consistency checks are passed, to a pro forma statement of company performance. This replicates a page in the company report but allows you to go one step further by simulating results based on estimates. From the top line of units sold to the level of contribution after

marketing, it is an aggregate of the information available in the brand contribution pro forma statement, separately for Sonites and Vodites as well as in total. Other expenses are then deducted to provide the net contribution. Finally, a budget for next period is estimated on the basis of these expected financial results.

## MARKETING PLAN - THE PLANNING PROCESS

The Markstrat marketing plan section is a useful tool to check the consistency of decisions and to easily anticipate their possible financial consequences. However it provides no guarantee of achieving the projected results. The actual brand contribution and company performance statements for the next period may be quite different from the pro forma projections obtained from the plan!

Many facets of the environment may have changed unexpectedly, including consumer needs or competitive actions. Other aspects directly controlled by the firm may not have been properly incorporated, or may have been overlooked. For example, participants often overlook the following issues:

- the distribution mix estimates may not have taken into account the fact that the deployment of the firm's sales force no longer corresponds to the new shopping trends;
- or the share estimates for a given brand did not anticipate negative consumer reactions to the price increase;
- or the cut in the advertising budget did not have such a negative impact on sales and that, as a result, the brand has performed better than expected and is out of stock.

The process of planning in Markstrat brings discipline to marketing thinking, action, and learning in at least three important ways: first, by demanding a focus on the tangible results of decisions at the brand level; second by making it easy to check the validity of the overall financial results; and third by providing support for a post-mortem analysis.

On the first aspect, the marketing plan section helps to focus on the three key elements of market evolution (segment sizes), brand performance (in shares or volume), and distribution coverage. Having to submit estimates for these components of the plan should solicit discussion and reflection about the variables affecting them. By modifying the estimates, it is also relatively convenient to perform sensitivity analyses to better understand how they affect the brand contribution. If the resulting projected brand contribution appears significantly higher or lower than expected, then the validity of some of the decisions or estimates should be questioned. For instance, observing an abnormally high projected contribution for a given brand may lead to

checking if the share estimate is coherent with the competitive positioning, the retail price, or the advertising support of the brand. It is easy to switch between the marketing plan section and the other components of the decision screen to adjust either the decisions or the estimates, and reach a situation where the firm's management is confident.

The marketing plan section of the Markstrat software also allows you to easily check on the expected overall financial performance of the firm. Within the firm's portfolio, it may be decided to invest heavily in a new brand and to accept a substantially negative contribution for this brand as long as other products generate sufficient funds to reach financial objectives. This financial interdependence between brands is sometimes difficult to apprehend but it is easy to investigate and analyze with the marketing plan section.

Finally, an important role of the marketing plan is to provide a tangible basis to learn over time. The Brand Contribution and Company Performance statements in the marketing plan are in the same format as in the company report. This makes it easy to compare between the anticipated projections and the actual results when they are obtained. A systematic analysis of the sources of variance between the two documents will help you learn both about the market mechanisms and about the planning process. In the long-term, this learning dimension is probably the most important contribution of the marketing planning process.

## POSITIONING AND RESEARCH & DEVELOPMENT

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?

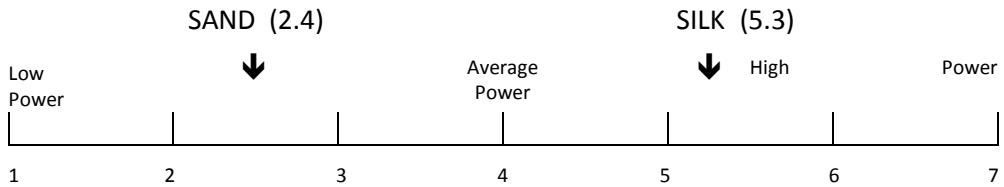
The goal of this chapter is to describe the various approaches that can be used in Markstrat to address these issues.

## SEMANTIC SCALES & MULTIDIMENSIONAL SCALING

Technical experts can easily classify the marketed brands based on objective data such as 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 Markstrat 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 the brand SAND at 2.4 on the Power scale shown below because they perceive it as being less *powerful* than brand SILK, rated at 5.3 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 29. 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 targeted customer group. The graph shown in Figure 30 is provided in the simulation 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 accurately calculate which physical level is required to reach a given perceived level.

Segment	Weight	Design	Volume	Max Freq	Power	Price
Bufs	3.94	4.88	3.14	5.64	5.56	4.87
Singles	5.64	5.20	5.02	5.11	4.87	2.70
Pros	3.43	2.77	3.29	5.94	5.85	6.34
HiEarners	4.82	5.48	4.88	3.79	4.27	5.55
Others	5.24	4.05	6.02	3.47	2.71	2.05
Importance of characteristic (1)	1	4	2	3	6	10
(1) On a scale from 1 to 10 - 1 = Not important - 10 = Very important						

**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. First, respondents are asked to rate pairs of marketed brands according to the similarities or differences between two brands. Second, complex mathematical formulas are applied to these ratings to build a three-dimensional map where the distance between two brands is small for similar

brands –brands that are close to each other on the map– and large for dissimilar brands –brands that are far from each other on the map.

Firm	Brand	Weight	Design	Volume	Max Freq	Power	Price
A	SAMA	5.47	3.03	6.05	3.00	2.61	2.12
	SALT	5.41	4.18	4.79	4.63	4.38	3.03
	SAND	3.52	1.86	3.41	5.64	5.99	5.99
E	SEMI	3.17	2.82	2.99	5.81	5.89	6.24
	SELF	3.59	2.05	2.83	5.99	5.96	6.27
	SEBU	2.71	4.60	2.44	5.78	5.55	4.83
	SERT	2.70	4.70	3.16	4.37	4.08	5.79
I	SIBI	6.45	5.66	4.00	5.04	4.69	2.65
	SIPE	6.50	4.27	4.86	2.24	2.71	2.06
	SICK	6.45	5.66	4.00	4.74	4.27	2.78
O	SOLD	3.26	4.60	2.35	4.36	4.19	5.58
	SONO	3.31	2.71	3.14	5.84	5.83	6.16
	SODU	4.68	4.92	5.20	5.16	4.68	2.61
	SODE	3.90	4.42	2.50	5.58	5.73	4.98
U	SUSI	5.38	3.22	6.18	3.34	2.52	2.10
	SULI	3.36	2.45	3.16	5.79	5.79	6.19
	SUBF	5.31	1.63	4.46	5.12	5.22	3.09

Figure 29 – Semantic scales study: Ideal values and brand perceptions

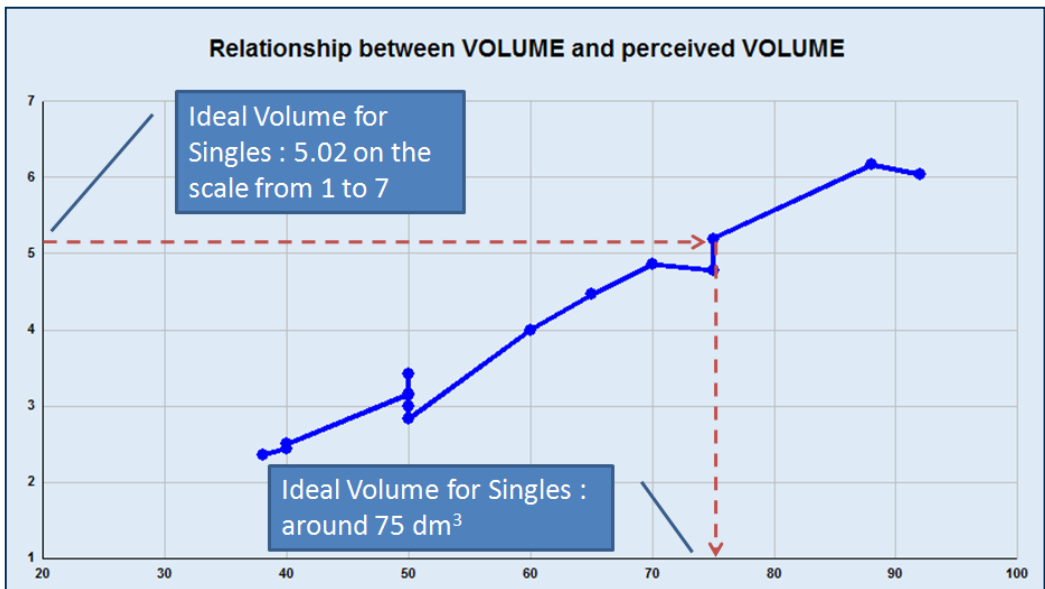


Figure 30 – Relationship between attributes and semantic scales

The map is a graphical representation of the respondents’ ratings. Third, experts provide an interpretation for each of the three axes. 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 31. 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 is represented by red stars).

For the Sonite market, the best interpretation of the three axes is 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.

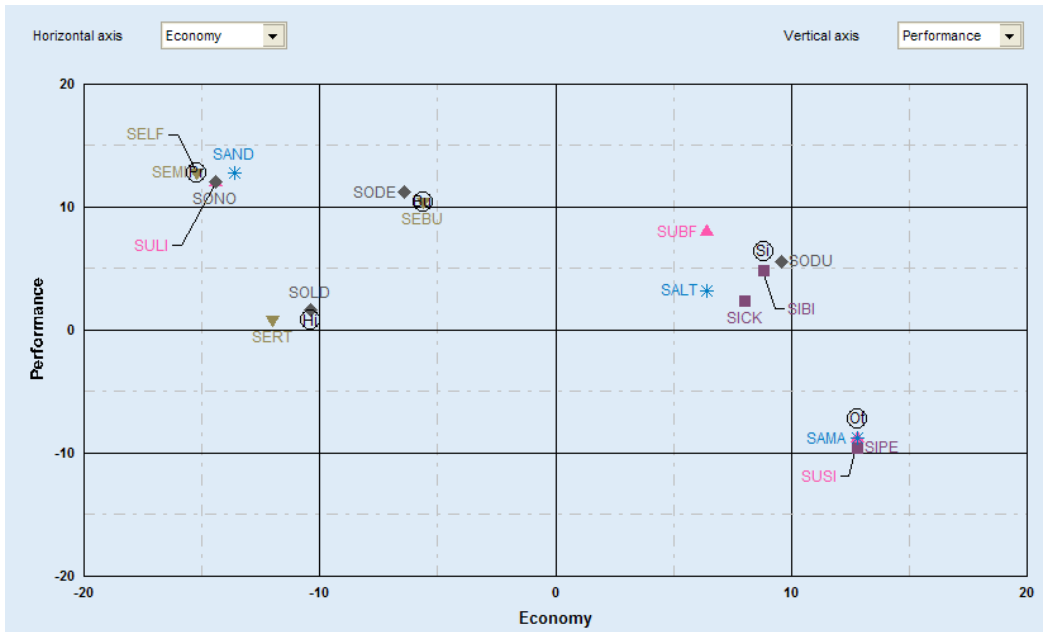


Figure 31 – Perceptual map

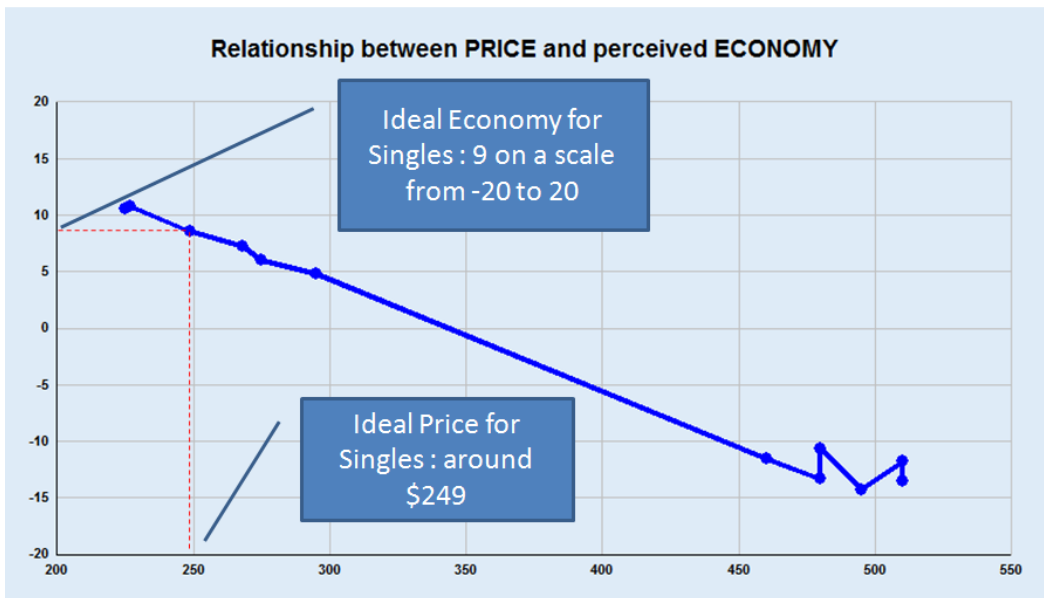


Figure 32 – Relationship between attributes and MDS perceptions



## 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 that fits 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; however, 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.

## POSITIONING WITH ADVERTISING

Advertising in Markstrat is mainly used to build brand awareness and to inform customers 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:

- Identify the target position on the perceptual map or on the semantic scales' chart.
- Specify perceptual objectives for the brand when making *Production, Price & Advertising* decisions, as explained in the *Marketing Mix Decisions* chapter. 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.
- 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.
- Indicate the percentages allocated to the *Targeted segments*. The targeted segments must be coherent with the perceptual objectives, 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, 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.

## 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:

- Identify the target position on the perceptual map or on the semantic scales' chart.
- 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 in the simulation, one with the semantic scales study (see [Figure 30](#)), and the other with the MDS study (see [Figure 32](#)). 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 31](#), brand SODU appears to have the appropriate Performance level for the Singles segment, and brand SAMA 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 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:

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

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:

$$[(5.5-1) / 6] \times (100-5) + 5 = 76 \text{ (rounded to the nearest whole number)}$$

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

- Develop an R&D project with the physical characteristics calculated above. This is done in cooperation with the R&D department as explained below.
- 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.

## RESEARCH & DEVELOPMENT

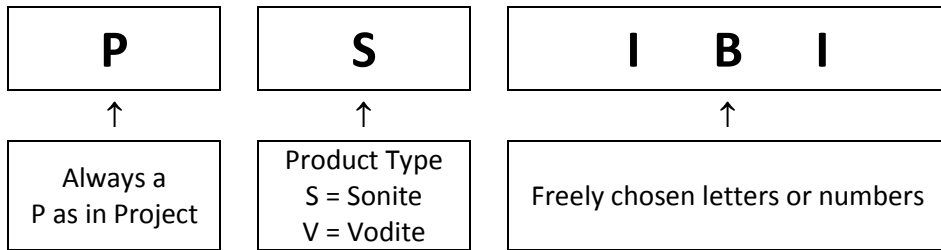
The marketing department (you) may ask the R&D department to develop specific projects in order to improve existing products or to introduce new ones. The R&D department of the firm works for all the divisions, including yours, and operates as a profit center. Up to ten R&D projects may be ordered each 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. The previous section 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 previously. 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 [Figure 19](#).

Let’s use the following example to illustrate the possible responses from the R&D department. The table in [Figure 33](#) summarizes the responses for a new project with identical physical characteristics but with four different requested levels of base cost and allocated budget.

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.

&		Case A	Case B	Case C	Case D
<b>Project specifications</b>	Weight (Kg)	17	17	17	17
	Design (Index)	6	6	6	6
	Volume ( $Dm^3$ )	85	85	85	85
	Max. Freq. (kHz)	35	35	35	35
	Power (W)	70	70	70	70
	Requested base cost	\$80	\$80	\$130	\$130
	Allocated budget	\$1 000k	\$300k	\$1 000k	\$300k
<b>Response from R&amp;D at end of period</b>	Normal budget for completion	\$800k	\$800k	\$550k	\$550k
	Minimum Base Cost	\$110	\$110	\$110	\$110
	Project successfully completed	Yes	No	Yes	No
	Current base cost	\$110	\$110	\$130	\$130
	Minimum base cost	\$110	\$110	\$110	\$110
	Additional budget for completion	-	500k	-	250k

**Figure 33 – Interface with R&D department**

## 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 the *Brand Portfolio Decisions* chapter.

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. Lowering the cost of a brand is considered a brand modification. 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 Markstrat world. Consequently, a loss of x% (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 SICK in [Figure 18](#), the loss would be calculated as:

$$105 \text{ units} \times \$129 \times (100\% - 80\%) = \$ 2,709$$



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