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I. INTRODUCTION TO MARKSTRAT

Welcome to Markstrat and congratulations on your new position! 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. You will compete with several other firms to market two types of durable goods to consumers.

You will be responsible for formulating and implementing the long-term marketing strategy of your division.

- Work in a highly competitive market;
- Target selected consumer segments and position your products;
- 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 (pricing, advertising, ...) for each of your brands;
- Decide on the size and priorities of your commercial team;
- Order market research studies to get up-to-date information for decision making.

A key objective for your firm will be to increase the Share Price Index (SPI) for your division. The SPI takes into account several indicators including net contribution generated, product market share, your ability to grow the organization’s revenues and the quality of projects successfully completed.

II. THE MARKSTRAT WORLD

Fictitious industrialized country of 80 million inhabitants, which does not intend to represent any particular country, market or industrial sector, but behaves like most markets.

- Monetary unit: Markstrat dollar ($).
- Fairly stable inflation and GNP growth
- No major political, social or economic event is anticipated in the near future.
- Consumer durable goods market: comparable to electronic products such as digital cameras, GPS systems, mobile phones or computers, as well as office equipment, cars, books etc

Initially, the competing companies are identified by a unique letter such as L, M, N, R, S or T. Your first task will be to give a name to your company, starting with this letter and reflecting the spirit within your team.

Your professor will decide if each firm starts in a different situation in terms of product specification, target consumers, brand awareness levels, market share, distribution coverage, profitability, research and development (R&D) expertise, etc. or if they start with equal situations. You will have to determine the strengths and weaknesses of your firm and adapt your strategy accordingly. Some capabilities are common to all teams; for instance the ability to develop new R&D projects or to handle distributor relationships in all channels.

1. Sonite Products

All firms start with two Sonite brands that have existed for several years. A Sonite is a complex piece of equipment made up of several components, primarily differentiated in terms of five physical characteristics that are considered as the most important ones by industry experts, as well as Base cost. Offering more of a certain characteristic is not necessarily better.

- Processing Power. Speed of the internal processor
- Display Size. Size of the screen, ability to display higher quality images or videos.
- Design Index. Type of raw materials used, number of components, aspect of its various components. A product with a high design is not better or easier-to-use than one rated lower on the same scale.
• **Battery Life.** Number of hours during which the product can operate without connection to main power.

• **Features.** Total number of features offered by the product, which can be hardware or software related.

• **Base cost:** cost at which each unit will be produced, assuming a minimum production batch of 100,000 units.

2. **Vodite Products**

Industry speculation suggests that a new type of electronic product might emerge, the Vodite. No Vodite brands are available at the start of the simulation, nor has any firm completed R&D for a Vodite, although the core technologies required have all been invented.

Vodite products will satisfy entirely different needs from Sonites, 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 actual size of the Vodite market will depend on the attractiveness of available products in term of features and price.

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 5 to 10 million dollars may be required for a Vodite. Concept research show that Vodite products will primarily be differentiated in terms of the five most important physical characteristics described below.

• **Resolution.** Sharpness or clarity of the images processed by a Vodite. Resolution is different to Definition, which is the total size of the image.

• **Energy Efficiency** is about using less energy to provide the same level of performance and convenience.

• **Connectivity** measures the ability of the product to connect to varying networks and/or databases as well as the speed of the connection.

• **Application programs or Apps.** Number of application programs that can be set up and used with a Vodite. Although there are only a handful of basic applications that each Vodite product must offer, some products offer a very large catalog.

• **Carbon Footprint** (or greenhouse gas emission) weights the carbon impact of the product through its lifecycle: manufacturing, transportation, use, recycling and/or discarding. Depending on the scenario selected by your instructor, a “greenhouse gas emission” tax may be put in place by the Markstrat government. In this case, you will be notified one or two years in advance of the amount that you will have to pay if you market a Vodite product with a Carbon Footprint level above a certain threshold value (in kilograms of CO₂). This tax will appear as an exceptional cost, proportional to the kilograms of CO₂ emitted by your product above the threshold value. This tax has a fixed amount and will not depend on your volume sales.

3. **Naming Conventions**

Brand names are made up of up to six characters. The first letter identifies the firm marketing the brand (M, R, S, T, L or N). The second letter must be an ‘O’ for a Sonite or an ‘E’ for a Vodite. The other characters can be letters or numbers and can be freely chosen by each firm to generate different brand names. The selected name has no influence on the market response to the brand;

4. **Sonite Customers**

Adults who purchase the products for personal or professional use. This market is divided into five segments:

• **Explorers (Ex)** are extremely knowledgeable about Sonite technology and the different characteristics of the existing brands. Explorers were probably among the first to use Sonite products. They demand high-performance products (high processing power and/or large screens), and are less concerned with the
convenience of the products (battery life, design or number of features). However they are quite price-sensitive, since they use Sonite products for their personal use and do not necessarily have high incomes.

- **Shoppers (Sh)** have a good knowledge of products and do extensive comparisons. They look for products with a high quality – price ratio and average levels of both performance and convenience. They use Sonite products for personal purposes and are quite price-sensitive.

- **Professionals (Pr)** are using Sonite products for their professional usage and are thus 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)** usually buy expensive products, and are partially motivated by social status. They demand performance and convenience from the products.

- **Savers (Sa)** include all consumers who are cautious in the way they spend their money. 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. 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.

5. **Vodite Customers**

A different segmentation is likely to be appropriate for Vodites. Marketing experts believe that it will be more effective to group consumers according to how they adopt new products.

- **Innovators (In)** will be the first users of Vodite products. They tend to be adventurous. Although this segment will probably be the largest one initially, it represents only a small percentage of total potential consumers. Their income levels are above average.

- **Early adopters (Ad)** will not adopt Vodite products as quickly as innovators but will certainly do so before a majority of people have accepted the new technology. This group is much larger than Innovators and tend to be opinion leaders and helpful in ‘advertising’ the new product to other potential buyers. They have an average income level.

- **Followers (Fo)** represent the bulk of potential consumers. Because they perceive risk in buying new products, they adopt a product innovation only after many consumers have tried it. Innovators and early adopters particularly influence followers. Their income level is usually below average.

6. **Distribution Channels**

- **Specialty Stores** are usually small and may not belong to organized chains. They are geographically close to their customers and can provide a high level of service and technical support. Sonite products account for a large proportion of their sales. They 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.

- **Mass Merchandisers** operate on a low-price, high-volume basis and try to minimize overhead. The level of service they offer is lower than that of the two other channels. 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.

- **Online stores** includes the web-only merchants as well as the e-commerce websites of traditional retailers. They specifically attract shoppers. Convenience is the key advantage of online stores. Consumers have access to an almost unlimited choice and can compare features and prices very easily. Online stores are likely to become more important in the next 5 to 10 years.

Within the Sonite market, all three distribution channels are important; therefore each of them should be visited by the companies’ commercial team. There are approximately 10,000 specialty stores, 6,000 mass merchandisers belonging to 6 different chains, and 1,000 online stores.
Differences between margins in each of the three channels are mainly due to differences in the level of service and volume sold. Margins are applied to retail prices and are approximately constant across brands for a given channel: 40% for specialty stores and 30% for the other ones.

7. Economic Environment

The average inflation rate is 2%. It is not expected that inflation will reach much higher levels in the future. In the past, the Gross National Product (GNP) has been growing at a rate of 4%.
III. MANAGING YOUR FIRM

1. Decision Rounds versus Periods

You will follow a decision-making cycle that will repeat itself for each simulated year. This cycle is called a decision round or a round. A simulated year is also called a period.

2. Product, Brand and Base Project

Each of your Sonite and Vodite products is sold to consumers under a brand name. The physical characteristics and the unit production cost of the product are defined by its base R&D project. R&D projects are given a name when they are initiated; project names start with the letter ‘P’. Initially, each firm markets two Sonite products, each one being characterized by its base project.

Over the course of the simulation, you will have to upgrade your existing brands to adapt to changing consumer needs or to competitive moves. You may also have to launch new brands to target new consumer segments or to explore new markets.

3. Production

Each period, you must submit a production plan for each of your brands, taking into account the potential sales for the brand, the existing inventory and the flexibility of the Production department.

From one period to the next, you are free to increase or decrease the production plan of a product, without any penalty. You are not concerned about manufacturing investments, fixed costs or capacity utilization.

The production level for each product is automatically adjusted in response to actual demand within 20% of your initial production plan: automatically increased by up to 20% if you didn’t order enough, or automatically reduced by up to 20% if you ordered too many units and cannot sell them in the period. If your plan was inaccurate by more than 20%, you will either lose sales or build inventory.

The price paid by Marketing to Production is called the transfer cost. It is not always equal to the base cost of its base project because of the experience effect. We will explain in section 9 why the transfer cost may be higher or lower than the base cost depending on how many units you produce. Transfer costs are also adjusted by inflation every year.

Units produced in excess are kept in inventory, and inventory-holding costs are charged to the Marketing department until these units are sold. Inventory costs per unit are calculated as a percentage of the transfer cost.

4. Pricing

Each period, you must set the recommended retail price for each of your marketed brands. 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.

Specialty stores tend to respect the recommended retail prices set by companies. However, mass merchandisers and online stores use promotions or special offers to sell products. On average, these promotions are equivalent to a discount rate of 10% off the list price for mass merchandisers and 5% for online stores. Figure 1 provides a summary of prices, margins and discounts for a recommended Retail Price of $400 and a unit transfer cost of $123.

Dumping is strictly forbidden in the Markstrat world; therefore in all channels the recommended retail price must be set so that the selling price of a product is higher than its transfer cost.

Price increases or decreases greater than 30% in one period are highly discouraged as they often result in negative market reactions: an excessive price increase is usually not accepted by consumers who may react strongly and stop purchasing the brand, while an excessive price decrease will result in a proportional cut in the distributors’ margin and your commercial team 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.

<table>
<thead>
<tr>
<th></th>
<th>Specialty Stores</th>
<th>Mass Merchandisers</th>
<th>Online Stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual retail price</td>
<td>$400</td>
<td>$360</td>
<td>$380</td>
</tr>
<tr>
<td>Distribution margin</td>
<td>40% – $160</td>
<td>30% – $108</td>
<td>30% – $114</td>
</tr>
<tr>
<td>Selling price</td>
<td>$240</td>
<td>$252</td>
<td>$266</td>
</tr>
<tr>
<td>Transfer cost</td>
<td>$123</td>
<td>$123</td>
<td>$123</td>
</tr>
<tr>
<td>Unit contribution</td>
<td>$117</td>
<td>$129</td>
<td>$143</td>
</tr>
</tbody>
</table>

*Figure 1 – From retail price to unit contribution*

## 5. Advertising

Advertising decisions must be made each period for each of your marketed brands. In Markstrat, there is no corporate branding effect on consumers, hence brands will not benefit from the company’s identity and image, even if they target the same segment.

The primary objective of advertising is to build awareness for brand names. Advertising is crucial for new brands, but is also important for brands that have been on the market for some years. Another objective is to develop demand. The size and growth rate of consumer segments is influenced by the amount spent in advertising by the entire industry. Finally, advertising will influence the decision of whether or not distributors will carry your products. Spending more in advertising will most likely increase your distribution coverage. It also creates a barrier to entry for your competitors.

The absolute amount of advertising spent on your brands is a key factor in the success of your campaign. But because of the competitive nature of the Markstrat industry, your advertising share of voice is important as well (your own advertising budget/the industry’s total advertising budget). If your share of voice is much lower than that of competitors, you may find your advertising is unnoticed, and your message may be lost. This may be damaging, especially if you are launching a new brand or repositioning an existing one.

There are two separate advertising budgets: the Advertising media budget to purchase media space and time, and Advertising research for creative work, media selection, or other activities conducted by advertising agencies, that improve the quality and the persuasive power of your message. To increase or maintain awareness, you should spend the bulk of your budget in media space purchase and only a small percentage in advertising research to make your advertising more effective (for instance 4% to 8%). To reposition a brand, you should spend a significant percentage of your total budget in advertising research (usually from 10% to 15%).

You must also specify which segments should be targeted with your advertising. The advertising agency will select the most appropriate vehicle for the targeted segments, but some consumers may be exposed to your advertising campaign as well, even if you do not target them explicitly.

Finally, you must define perceptual advertising objectives for each brand. This enables you to convey a perceptual message. Without this, your advertising will be generic. e.g. “Buy our Sonites, they’re great!” A more nuanced message may have more impact.

## 6. Commercial Team

Your commercial team is responsible for obtaining and entering orders and for supporting distributors. It includes multiple categories of people and resources depending on the channels, from traditional salespeople to web analytic specialists. The main role of the commercial team is to make sure that the right products are in the right stores – real or online- at the right time; to enroll them in trade programs; to take
orders; to handle out of stock situations; to participate in trade shows; and to help stores organize and conduct promotions.

The marketing department must specify the size of commercial team to allocate to each channel and each brand, in number of Full-Time-Equivalent (FTE). Commercial people may be reallocated at no cost across distribution channels and/or across brands. However, hiring or firing costs will be automatically charged to your department when the total size of the commercial team increases or decreases. They are calculated as a percentage of the FTE cost, as indicated in the Market & Competitive News.

7. Market Research Studies

You will order studies at the beginning of a period and they will be conducted by a specialized research firm during that period. The results can be used for the next period’s decisions. You can buy up to 23 studies. *Note that only four studies will be available in your Period 0 report: Consumer survey, Consumer panel, Distribution panel and Market Forecast.*

Most of the studies apply only if there are brands marketed during the period in the corresponding market (Sonite or Vodite). If you order them when no brands were marketed in the period, you will not be charged. However, the corresponding cost is subtracted from your budget when you make your decisions.

8. Research & Development

When the Marketing department decides to either upgrade/downgrade/cost-reduce existing brands or to launch new ones, the first step is always to start a new Research and Development (R&D) project. Indeed, existing products may need to be improved during their lifetime to adapt to the changing needs of consumers and new products may have to be created in order to target untapped segments in existing or new markets.

In the past, your firm has successfully completed two R&D projects on which your brands marketed in Period 0 are based. The project name starts with the letters PO followed by the corresponding brand name. For instance, the R&D project corresponding to the existing brand MOST was called POMOST.

When requesting a new R&D project, the Marketing department must specify the name of the project, the desired characteristics for the new or improved product, and the target base cost. The Marketing department must also allocate a budget to the project. Up to ten R&D projects may be ordered each period for the two markets, five Sonite projects and five Vodite projects.

A. Project Name

Project names may have up to 12 characters. The first letter must be a ‘P’, as in “Project”. The second one identifies the market of the product being developed: ‘O’ for a Sonite product and ‘E’ for a Vodite. The other characters may be chosen freely. The project name is entirely separate from the brand name under which you launch or re-launch the new or improved product you have developed.

We advise you to give meaningful names to your projects. For instance, PO-MOVE2 would be a Sonite project developed to upgrade brand MOVE and PE-INNOVS would be a Vodite project developed to launch a new brand targeted at Innovators. 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.

B. Project Characteristics

The physical characteristics of the project must be given along with the five most important attributes described in the sections “Sonite Products” and “Vodite Products”.

The Marketing Department should evaluate the attractiveness of various offerings before deciding on specific characteristics. The needs of the target consumers should be taken into account for this evaluation.

C. Desired Base Cost

The base cost of a project is equal to the transfer cost that will be charged by Production to Marketing for each unit of the future product, assuming an initial production batch of 100,000 units. Note that the transfer cost will decrease if you produce more than 100,000 units; inversely, it will increase if you produce less than 100,000 units. See section 9 for more details on productivity gains.
You may ask the R&D department to develop the project at the lowest possible base cost also called *minimum base cost*. This cost depends on the project characteristics: the higher the level in each attribute, the higher the minimum unit cost. There is one exception to this rule: unit cost will increase if you try to reduce the carbon footprint of your products. Developing a project at the minimum base cost will usually be quite expensive in terms of the development budget. Indeed, the R&D team must not only develop the new characteristics requested, but also select materials and technologies that are compatible with the low cost target.

You may also ask the R&D department to develop the project at a specified base cost, higher than the minimum cost. This will give more flexibility to the R&D team in the materials and technology selection, and is likely to reduce the development budget. Obviously, the desired base cost must be compatible with the expected brand profitability, taking all factors into account: price, distributor margin, production costs, marketing and sales expenses, etc.

**D. Project Allocated Budget**

The Marketing department must allocate a budget to cover the project expenses. These expenses include the cost of developing the prototype and all the costs related to the transition from R&D to production, i.e. ensuring that large quantities of identical units can be economically and reliably produced.

At the early stage of the project development, the R&D team will estimate the budget required for completing the project. This budget will depend on how different the new characteristics are compared to the ones of projects already developed. Upgrading a Sonite product will initially cost between a few hundred thousand dollars and 2 million dollars. Industry experts believe that developing the first Vodite prototype will cost each firm a minimum of 5 million dollars. In both cases, R&D costs will decrease over time as more projects are successfully developed.

If the budget allocated by Marketing to the project is equal to or higher than the budget required for completion, then the project will be successfully completed and available during the following period.

As the R&D department works as a profit center, any budget allocated in excess of the required budget will not be given back to Marketing.

If the allocated budget is much lower than the budget required for completion, the project will not be successfully completed. In this case, you have the choice to complete the project in the following period by allocating the amount required by R&D in the annual report, or shelve the project, i.e. put it aside until such time as you have sufficient funds to complete it. Note that a project does not have to be finished in one or two periods; you may well decide to develop your first Vodite prototype in 3 or more periods.

If the allocated budget is slightly lower than the budget required for completion, there is a chance that the project will be successfully completed despite the lack of funds. Taking such a risk might not be a good idea if millions of dollars in revenues depend on the availability of the project.

**E. Feasibility Studies**

When specifying a new R&D project, you have the choice to allocate a budget to it or to order a *feasibility study* that costs $100,000 and takes one period to complete. The information is provided in the next period’s company results; it includes the minimum base cost at which the product can realistically be manufactured, and the budget required to guarantee its completion at the currently requested base cost. Feasibility studies are low cost and information provided is accurate, but they take time to be completed.

**F. Online Queries**

Provide an estimate of the budget required to complete a project. You may order it when the project is fully specified. The response is immediate, but its results are usually over-estimated by as much as 15% (or even more for the new Vodite technology). No more than five queries may be made in any given period.

If you change the specifications of your project after you have run the online query, you will no longer be guaranteed that the project will be completed within one period at the budget given by the query. You should then run a new query to adjust your decisions according to the new specifications.
9. Productivity Gains

Manufacturing costs tend to decrease over time thanks to the experience effect. This is due to many factors such as increase in labor efficiency (fewer mistakes are made), improvement of methodologies & processes, use of new and fewer expensive materials and/or technologies and product redesign. Experience effect should not be confused with economies of scale, the fact that manufacturing costs decrease with the size of the plant. As a matter of simplicity, The Markstrat simulation does not include this effect. Hence, you are not concerned with economies of scale.

Hence, one way to reduce manufacturing costs is simply to produce more units of the same product. On average, it is estimated that manufacturing costs decrease by 15% each time cumulative production is doubled. This is represented by the blue curve on Figure 2: point A represents the base cost that was specified when the base project was developed and point B represents the transfer cost a few periods later, when cumulative production reached 600,000 units. The unit cost of this brand decreased from $150 to $100 (a 33% reduction). Unfortunately, the slope of the curve decreases quite rapidly: the additional production necessary to get an additional 15% reduction in unit cost gets bigger and bigger.

This blue curve also shows that the manufacturing cost increases in case of production batch smaller than 100,000 units. In the example on Figure 2, the unit cost would be $200 (a 33% increase) for a production of about 30,000 units. This inverse effect should be taken into consideration when launching a brand in small segment and/or market.

Firms can further reduce manufacturing costs by launching a cost reduction R&D project, i.e. a project specifying the same physical characteristics as the initial project, but at a lower base cost. This is represented by the red curve on Figure 2. Although the unit cost will initially be higher than $100 (point A’), the curve shows that transfer costs below $100 will be obtained as soon as cumulative production goes beyond point B’. Then, the transfer costs will be much lower than the ones achievable by the original blue curve.

Finally, one should not forget that costs will be adjusted for inflation; this will offset part of the reduction obtained through experience.

![Figure 2 – Productivity gains](image)

10. Marketing as a Profit Center

You will operate the Marketing department as a profit center. Your performance will be measured by the contribution that you generate.

A. Marketing Budget

Each period, you are allocated a budget for your expenses in R&D, advertising, commercial activities and market research. It is linked to your success: 40% of the net contribution generated in the previous period, with a maximum level where resources are reallocated to other divisions of the company, and a minimum level, when headquarters subsidize your division if you are not generating enough contribution.
In general, your budget for each period will be between 7 and 25 million dollars, depending on inflation. If total spending exceeds the allocated budget for a period, expenses will be automatically cut by the Finance Control department, starting with advertising expenditures.

You should not necessarily spend your entire budget in every situation. Indeed, you should not spend one additional dollar unless you expect this dollar to generate a return higher than one dollar.

*Please note that unused budget will not be carried forward to the next period.*

**B. Loans & Budget Increase or Decrease**

Your instructor may decide to grant you a loan or a budget increase or decrease. This will usually be done at specific periods and under certain conditions to be defined by your instructor.

A loan is characterized by its principal — the amount of additional money that you will get — its interest rate in %, its duration in years and the period P at which it is granted. For example, a $5 million loan is granted to team R in Period 3 at 4% interest rate over 5 years.

In the Markstrat world, loans are granted at the beginning of the year so that you can use the principal immediately, for instance to invest in new R&D projects. As a consequence, you will incur interests in the first year of the loan. However, you will not start to reimburse the principal before period P+1 so that it can be paid with the outcome of the period P investment. A complete example is detailed in Figure 3.

<table>
<thead>
<tr>
<th></th>
<th>Principal Received</th>
<th>Principal Reimbursed</th>
<th>Interests Paid</th>
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</thead>
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<tr>
<td>Period P</td>
<td>5 000 000</td>
<td>0</td>
<td>200 000</td>
</tr>
<tr>
<td>Period P+1</td>
<td>923 136</td>
<td>200 000</td>
<td></td>
</tr>
<tr>
<td>Period P+2</td>
<td>960 061</td>
<td>163 075</td>
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<td>Period P+3</td>
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<tr>
<td>Period P+6</td>
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*Figure 3 – Sample Loan Schedule*
IV. UNDERSTANDING YOUR ANNUAL REPORT

You will receive your annual report at the beginning of each decision round. It provides results of the period that just ended. It is composed of the Market & Competitive News, the Company Results, and the Market Research Studies that have been purchased.

Only the most critical reports are described in this document. Online documentation is available for the other ones.

*While reading this chapter, we advise you to review the tables and charts available in the sample report entitled Markstrat-Sample-Report.pdf available in the cloud at the URL below. Note: this report is for illustration purpose only; do not spend time analyzing it as your starting situation will be different.*


1. Company Results

Confidential company information that only your team can access. Except *Industry Benchmarking* study when available.

A. Company Dashboard

One page summary of the key performance indicators of your firm and your brands such as stock market data, market shares in value and volume, revenues and contribution.

B. Financial Report

Revenues, costs and profit information at the company, market and brand levels. The *Profit & Loss statement* of your company is explained below.

- **Revenues**: Number of units sold x Average selling price. The selling price is equal to the retail price (your decision) minus the distributors’ margin.
- **Cost of goods sold (COGS)**: Number of units sold x Unit transfer cost. The transfer cost is equal to the base cost of the underlying R&D project minus the productivity gains.
- **Inventory costs**: Inventory holding cost + Inventory disposal loss
  - Inventory holding costs: Units in inventory x Unit transfer cost x Inventory holding cost in % (given in the market news report).
  - Inventory disposal loss: Loss incurred when selling inventory to a trading company because of a product upgrade or brand withdrawal. Units in inventory x Unit transfer cost x Inventory disposal cost in % (given in the market news report).
- **Contribution before marketing (CBM)**: Revenues – COGS – inventory costs.
- **Contribution after marketing (CAM)**: CBM – advertising media – advertising research – commercial team costs (your decisions).
- **Research & Development**: budgets allocated to R&D projects during the period (your decision).
- **Market research studies**: costs of the market studies purchased during the period (your decision).
- **Interests paid**: Interest paid on loans granted in previous periods.
- **Exceptional cost or profit (ECP)**: Exceptional items such as brand withdrawal costs.
- **Net earnings**: CAM – market research studies – R&D – interests paid – ECP.

The *Market and Brand Contribution* reports are similar to the company profit & loss statement. They provide financial elements for each marketed brand as well as the consolidation of all brands by market.

C. Production Report

Information on the number of units produced, the number of units in inventory and on production costs for each of the brands marketed in the period. The variation between the production plan (your decision) and
the actual production (number of units produced) is due to the automatic adjustment of plus or minus 20%, depending on market demand.

The inventory at the end of period is equal to (inventory at beginning of period + actual production – units sold).

The Unit Cost, COGS and Inventory Holding Cost chart shows the unit transfer cost for each of your marketed brands. The current unit cost is the cost of the most recently produced units, while the average unit cost takes into account the units that were in your inventory at the beginning of the period. You may ignore the difference in most cases. Unit transfer costs are given in $; units sold in thousands of units. Cost of Goods Sold (COGS) are equal to Units sold x Average unit transfer cost.

This table also shows the costs incurred for holding your inventory throughout the period. Inventory holding cost is equal to Units in inventory x Average unit transfer cost x H%. In the case of a product upgrade or brand withdrawal, you must dispose of your inventory at the beginning of the period and a loss is incurred. Inventory disposal loss is calculated as D% of the value of your inventory at the beginning of the period. H and D are given in the market news.

D. Research & Development Report

Information on all R&D projects and online queries launched in the previous periods: just completed projects, completed projects in previous periods, projects that are not yet finished either because the allocated budget was not sufficient or because you have decided to shelve them. All reports include the same information:

- **Project name.**
- **Available since.** Completed projects only. This is the period when the project was completed.
- **Physical Characteristics.** This data is given in the relevant units for each characteristic.
- **Current and minimum base costs.** Manufacturing unit cost of the future product, assuming an initial production batch of 100,000 units. The current base cost is the one that you entered in the R&D decision form when specifying the project. The minimum base cost is the cost below which it is impossible to manufacture the future product without taking productivity gains into account.
- **Platform of brand.** This is the name of the brand that is based on this project.
- **Cumulative and required allocated budgets** for uncompleted projects only. The cumulative budget is the total budget that has been allocated to this project over time. The required budget is the budget required to finish the project. You may attempt to finish the project with a lower budget but its successful completion is not guaranteed.

E. Decision Review

This report recalls the decisions that your team made at the beginning of the current period. Note that the decisions shown in Period 0 were made by the previous management team which your team has replaced.

F. Feedback from your coach

Your professor will decide to provide or not the automated feedback, which provides a list of feedback messages that have been generated by the simulation based on your firm and brand situations. This report is aimed at helping identify some critical issues within you decisions and results. It is a nice complement to your own analysis, but certainly not a substitute. Make sure to spend a good part of your decision time to review and analyze your report and your market studies.

2. Market & Competitive News

It 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 documents.

A. Industry Dashboard

One page summary of key performance indicators at firm and brand levels such as stock market data, retail sales and market shares in value and volume, revenues and contribution.
B. Industry Information

Evolution of economic variables such as inflation rate and GNP growth rate, cost for the next period of items such as market research studies, commercial people, holding units in inventory or the disposal of inventory units in the case of a product withdrawal or upgrade. All cost calculations are done for you by the simulation, so you should not need to look at the report in detail.

C. Market Report

Market shares (in units and in dollar value), volume sold and retail sales of all marketed brands for the current period, as well as the variation with the previous period. Newly launched or upgraded brands are flagged. The physical characteristics, base cost and price of all marketed brands are given as well.

3. Market Research Studies

You may purchase up to 23 Market Research Studies each period.

A. Industry Benchmarking

Compiles general information from annual reports about each competitor to compare performance. The data provided includes sales, production costs, marketing expenditures and other expenses, including R&D.

B. Consumer Survey

Survey questionnaire administered to 3,000 individuals during the simulated period, translated in:

*Brand awareness*, representing the proportion of individuals who have unaided recall of a brand name, and *Purchase intentions* representing the proportion of individuals who would select a brand as their first choice, if they were buying within a year. Awareness has a high impact on purchase intentions. Indeed, if respondents are not aware of a specific brand they will not list this brand as the brand of their first choice.

Purchase intentions are adjusted so as to sum up to 100%. This facilitates the comparison between purchase intentions and market shares. Occasionally, this adjustment may produce purchase intentions figures that are higher than awareness figures. A typical example is the launch of the first Vodite brands: even if these brands are known by only a few passionate innovators, they will have high purchase intentions if they are the only ones on the market.

A newly launched brand is likely to have a low awareness level because it takes time to be known by the mass of consumers. At this stage, you may want to calculate its conversion rate (purchase intention divided by awareness) and to compare it with the ones of your competitors. A high conversion rate means that a high proportion of the consumers knowing the brand intends to purchase it. This is obviously a good sign and it shows that you should continue to invest in this brand.

Finally, *Shopping habits* represent, for each of the three channels, the proportion of individuals who would choose that channel when shopping for a Sonite or a Vodite product.

C. Consumer Panel

The consumer panel study is based on a sample group of over 500 consumers whose buying behavior is believed to be representative of the entire market. It provides market share by consumer segment as well as industry sales in the product category. The market share figures represent the proportion of individuals who have purchased a given brand during the simulated period. Additional charts give the unit product category sales by consumer segment and in total, as well as the relative sizes of the consumer segments.

D. Distribution Panel

The *distribution panel* provides continuous tracking of product sales to consumers based on information gathered at the retail point-of-sale. Information is primarily gathered from scanning cash-registers with supplementary store audits. Our read represents sales in about 45,000 retail outlets. This study provides the market shares, based on unit sold, by channel for each brand currently on the market. They also give the unit product category sales by channel and in total, as well as the relative sizes of the channels.

The *distribution coverage* figures represent the proportion of stores that carry a given brand, for each brand currently on the market. The number of outlets in each distribution channel is provided as well.
E. Semantic scales

The semantic scales study provides data based on a semantic differential questionnaire administered to 600 individuals. Several semantic scales corresponding to the physical attributes were presented to the respondents. Crucial information is derived from these questionnaires:

**Brand perceptions.** Respondents are asked to rate each brand on a scale from 1 (low) to 7 (high) according to the way they perceive the brand. Results are summarized using the mean value for each brand.

**Ideal values.** Respondents are also asked to indicate their preferred (also called “Ideal”) value on each scale. The reported results are summarized in a table, using the mean value for each segment.

**Importance of characteristics.** Respondents are asked to rate the importance of each characteristic in their purchasing decision. Although consumer segments differ on the exact importance of each characteristic, they tend to agree on the ranking of the scales, i.e. their “relative” importance. This is why only average values are reported. Ratings are given on a scale from 1 (not important) to 10 (very important).

**Brand maps.** Graphical representation of ideal values and brand perceptions on two dimensions at a time.

**Ideal value evolution** monitors the evolution of consumer needs over time. The preferred values on each scale over the past 3 years are recorded and displayed in a table for each consumer segment.

**Additional graphs** can be found by clicking on a link at the top of the study: a graphical representation of ideal point evolution since the beginning of the simulation, and the relationships that exist between brand physical characteristics and brand perceptions. These charts are mostly used to design R&D projects.

F. Multidimensional scaling of brand similarities and preferences

This study provides a joint space configuration obtained with non-metric multidimensional scaling. It relies on similarity and preference data on the complete set of brands available in the market. These data were obtained through interviews with 200 individuals.

**Perceptual Maps** give the minimum number of dimensions that are sufficient to provide a good fit to the data. For the Sonite category, three dimensions are necessary: Economy, Performance and Convenience. The study provides a graphical representation of the perceptual positioning of the marketed brands.

Respondents are asked to indicate their preferred (also called “Ideal”) position on the map. The reported results are summarized on the map, using the mean value for each segment. Only two dimensions out of the three can be represented simultaneously.

The circles Ex, Sh, Pr, Hi, and Sa on the graph represent the ideal points of the segments. The various geometric shapes correspond to the positioning of the brands as they are perceived by the market.

Building a perceptual map is a complex task that requires many data points. Hence, this study will not be available for the Vodite product category until several brands are marketed in the category.

**Ideal value evolution** monitors the evolution of consumer needs over time. For each consumer segment the preferred values on each dimension over the past 3 years are recorded and displayed in a table.

**Influence of Product Characteristics on Perceptual Dimensions.** You will see that the MDS study is useful in positioning brands. This is why it is important to relate the three dimensions identified by the MDS study to the most important physical characteristics of the category. An indication of the influence of product characteristics on perceptual dimensions is provided in a table. For example, you may see that “Performance” is strongly related to “Processing Power” and moderately to “Display Size”, while “Convenience” is strongly related to “Design” and only slightly related to “Battery Life” or “Features”.

**Additional graphs** can be found by clicking on a link at the top of the study: a graphical representation of ideal point evolution since the beginning of the simulation, and the relationships that exist between brand physical characteristics and brand perceptions. These charts are mostly used to design R&D projects.

G. Competitive Advertising and Commercial Team Estimates

**Competitive Advertising.** Competitive advertising budgets are given by firm, by brand and by consumer segment. The breakdown by brand and consumer segment is also provided.
Competitive Commercial Team. This study estimates the size of competitive commercial teams by firm, brand and channel, and how the teams are allocated to brands and channels.

H. Advertising and Commercial Team Experiments

Advertising experiment is conducted by increasing advertising budgets in a selected market. Results are used to project the level of awareness, market share and brand contribution that would have been achieved by each brand with the same increase in advertising and if competitive actions had remained unchanged.

Commercial Team experiment is set up by increasing the size of the commercial team in each channel in a selected regional market. Results are used to project the additional number of distributors, market share and brand contribution that would have been achieved by each brand with an increase in commercial budget and if competitive actions have remained unchanged.

I. Market Forecast

Provides estimates of the expected market size for the whole market and by consumer segment. 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. For the new Vodite market, the estimates are based on interviews of potential consumers, they often turn out to be optimistic.

J. Conjoint Analysis

Statistical technique used to calculate the value – also called utility – attached by consumers to varying levels of physical characteristics and/or price. Conjoint analysis is conducted by showing respondents a set of fictitious products – each having a specific price and specific levels of limited number of attributes – and asking them to sort these products by decreasing order of preference. By analyzing the preference data and the combination of attributes and price for each product, the methodology evaluates the utility attached by respondents to the individual elements making up the product.

As this study is rather complex and expensive, professors don’t always make it available to teams. The complexity increases dramatically with the number of attributes and the number of levels included. Hence, only price and the three physical characteristics that are perceived as most important are studied; four levels are tested for each attribute. For instance, the four prices $200, $225, $275 and $350 will be tested.

Relative importance of price and physical characteristics. Relative importance of price and the three physical characteristics that are perceived as most important in the market. Importance ratings for a given segment sum to 100%.

Utility charts. Utilities are attached to 4 arbitrary levels in each dimension included in the study, and are measured on a scale from 0% (very low utility) to 100% (very high utility): the higher the utility the higher the preference of the consumer for the corresponding level in this dimension. The four levels have been chosen in the feasible range for the dimension so as to test varying levels of interest. Results are broken down by consumer segment. It is important to note that the level with the highest utility is not necessarily the ideal level, as given in the semantic scales or MDS studies.

K. Semantic Scales versus Multidimensional Scaling versus Conjoint Analysis

The three studies give information on how to reposition a brand to provide more value to consumers. For the semantic scales and multidimensional scaling studies, your objective should be to get closer to the ideal point of the targeted segment. For the conjoint analysis study, your objective should be to maximize the overall utility of your brand. Please find below some recommendation about which study to use and when.

- Use the Semantic Scales study to design R&D projects, i.e. to determine the ideal level in each physical characteristic. This study is very much appropriate to do this because there is a one-to-one relation between the dimensions of the study and product physical characteristics.
- Use the MDS study to decide on your strategy. The MDS study is great for strategy because it provides a helicopter view of the entire competitive situation. Putting the two perceptual maps next to each other on the same page or screen will help you; find where to reposition your existing brands; where to launch new ones; and, last but not least, anticipate the moves of your competitors.
• Use the MDS study also for communication. The reason is twofold: (1) you will communicate on the dimensions that really matter to your customers: Economy, Performance, Convenience, ...; (2) You can reposition a brand along more physical characteristics by using MDS than by using Semantic Scales.

• Use Conjoint Analysis to validate or invalidate the findings made with the other two studies. Will the new characteristics or price of my product maximize total utility? But be cautious: this study may be misleading because only four levels are tested along four dimensions. The optimal level for a given dimension is usually in between two of the four tested values, but you do not know where exactly.