

# Developments In Business Simulation & Experiential Exercises, Volume 17, 1990

## SUPERSTORE: A SPECIALIZED RETAILING SIMULATION WITHIN A SPECIALIZED MARKETING CURRICULUM

John L. Haverty, St. Joseph's University

### ABSTRACT

In this paper, a microcomputer-based simulation game designed for a specialized marketing curriculum, food marketing, is described. In this simulation, student groups are responsible for operating a supermarket for a one-year period, and receive feedback after each of fifty-two weekly decisions. In order to achieve portability and flexibility, the programs were written in the C programming language.

### INTRODUCTION

Product positioning is a basic marketing concept, but it is also an aspect of strategy crucial to the success of both profit and non-profit organizations of all sizes. It is ironic, however, that colleges and universities, whose professors regularly espouse the advantages of positioning and segmentation strategies in marketing classes do not implement this thinking in their own educational programming.

Kotler (1980, p. 207) indicated that the organization which practices "undifferentiated marketing?" typically develops a product and marketing program aimed at the largest segment of the market. Inevitably, the result is intense competition for the major segment and undersatisfaction of smaller segments, which seek more specialized offerings.

Most marketing programs offered by colleges and universities today are "undifferentiated" with the possible exception of engineering-oriented universities that attempt to specialize in industrial marketing, and several specialist or "commodity" approaches such as food industry, hotel management, and textiles. Marketing academics (McLaughlin 19Th) have noted that these approaches, although the exception rather than the rule, had an important role in marketing education.

This paper discusses a marketing simulation game developed for One such specialized program, food marketing. The paper briefly introduces the food marketing program, and then discusses the simulation used in that program.

### THE PROGRAM

The Academy of Food Marketing at St. Joseph's University in Philadelphia, under the direction of art independent Food Industry Board of Governors developed a specialized program in Food Marketing which has been in existence since 1962. Contrasted with traditional university marketing programs, the emphasis is specific to food channels, food

distribution, and food and allied industries' problems. This specialization is reflected in both the curriculum and non-curriculum dimensions of the program.

The food-marketing curriculum includes:

-fifty percent traditional liberal arts courses;

-twenty percent College of Business core requirements, including accounting, computer science, finance, management and statistics;

-ten percent generalized marketing courses including principles, research, promotion;

-twenty percent specialized food marketing courses such as food industry economics, wholesaling, retailing, and product policy.

The integrating thread throughout the curriculum is a new product project. In their junior year, students are required to develop and propose a marketing plan for a new product to be sold in retail food stores. Students are encouraged to make industry contacts and to discuss their ideas with cooperating firms. Often these contacts are food marketing graduates. In their final year, as part of a Product Policy course, students are divided into product teams, and these teams make an oral presentation of a marketing plan to a group of industry buyers. In recent years, various firms and foundations have sponsored this competition by providing substantial cash prizes to the finalist groups.

In addition to a specialized curriculum, the Academy of Food Marketing operates a food industry-specific library, specialized recruitment for food marketing students, specialized student job placement for both part-time and full-time employment in the food industry, a cooperative program in the food industry, and extensive fund raising targeted to food and allied industries.

The result of the strong food industry emphasis is a curriculum that, while admittedly more limited in scope than a traditional marketing curriculum, attains for St. Joseph's a position, which sets the food-marketing program apart from other marketing curricula. One indication of the success of this concept is that Food Marketing is now the second largest major at St. Joseph's University.

This situation is not without attendant problems (Lord and Haverty 1984). One significant problem for the instructor teaching a specialized food marketing

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course, such as food retailing, is the lack of available high-quality specialized food marketing instructional materials. This difficulty applies to textbooks as well as ancillary materials such as computerized simulations. Just as most textbooks are generalized marketing textbooks, most marketing simulation games are generalized marketing simulations. The same situation occurs in each subarea of marketing; e.g., there are few specialized food retailing instructional materials. This situation led to the development of SUPERSTORE, a supermarket simulation game intended to supplement a specialized course in retail and wholesale food distribution.

### THE SIMULATION GAME

SUPERSTORE is a computerized simulation game in which groups of participants operate a supermarket for a one-year period in competition with other participant groups.

#### Goals

SUPERSTORE was designed with the following objectives in mind:

1. The simulation should complement an existing course in retail and wholesale distribution that deals exclusively with supermarket operations.
2. The simulation should be suitable not only for traditional undergraduates, but also for supermarket management training programs.
3. The simulation should be operational on IBM compatible microcomputers, with a longer term goal of operations on the university's mainframe. In this mode decisions could be entered by telephone using electronic mail.
4. The simulation should be adaptable to different types of store formats. For example, it should be able to simulate a convenience store as well as a superstore.
5. The simulation should be paperless.

#### Participant Decisions

The task for each participant group in the simulation is to manage a supermarket for an entire year. In the most recent version of this simulation, the supermarket has six departments: grocery, produce, meat, bakery, frozen food/dairy, and non-foods. Participant groups make a set of operating decisions for a period, which represents one week of store operating time. As the decisions are made, various marketing research studies can also be purchased. The decisions for each group are entered directly on a floppy disk or via electronic mail. Once each group's decisions are available, the instructor runs the simulation and enters the results on a floppy disk (or electronic mail). The participant groups read the results and prepare new decisions for the

next cycle.

The decisions made each period are:

1. Departmental Gross Margins--Each firm is required to specify a desired gross margin percentage for each of the six Departments in Superstore. The gross margin is an overall measure of price level; the higher the gross margin the higher the price level for that particular department. In mathematical terms, gross margin percent is equal to sales minus cost of goods sold expressed as a percentage of sales.
2. Departmental Labor--Each firm is required to schedule labor for the upcoming week. Labor is scheduled on a labor dollar basis, and must be specified for each of the six Superstore departments. Insufficient labor may cause sales problems due to slow stocking, and it may contribute to a long-term negative consumer image. Use of part-time labor by Superstore permits some variations in labor scheduling to meet projected demand, but extensive variations in labor scheduling may result in difficulty in hiring good labor.
3. Advertising Budget--The advertising budget represents a purchase of newspaper or circular space. The higher the budget, the more newspaper or circular space is purchased. In addition, the allocation of the purchased space among the six Superstore departments is a management consideration as well.
4. Advertised Price Reductions--Superstore advertisements consist of large listings of items and prices. The price of the items can represent a real reduction from the "normal" price, or they could simply be the "normal" price. The extent of the true reduction in the newspaper and circular is under the control of Superstore management. Superstore budgets their price reductions in terms of a percentage reduction for each department from the desired gross margin discussed above.

#### Available Marketing Research

There is considerable marketing research available to Superstore management to assist decision-making. As in all marketing research, complete accuracy is never promised. Available research is divided into four categories: environmental research, competitive strategy research, competitive performance research, and image studies.

1. Environmental Research--Environmental research is broadly concerned with the non-competitive external environment of Superstore. Available environmental research studies include estimates of the size of various markets, the annual growth trend in the market area, and a weekly sales index.
2. Competitive Strategy Research--Competitive strategy research is concerned with monitoring the actions taken by your immediate competitors. Available studies are: Competitive gross margins, competitive labor expenditures, competitive advertising budgets, and competitive advertised price reductions.

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3. Competitive Performance Research--This research is concerned with the actual operating results of immediate competitors. Available studies include the following estimates: market shares competitors' sales, competitors' inventory levels, competitors gross margins, and competitors' profits.

4. Image Studies--Retail image studies are concerned with the perceptions that consumers hold of the various retail competitors. A customer's overall image of a single competitor is formed on a large number of dimensions. Marketing research is available to Superstore management that measures consumers images of the various competitors in the Superstore environment on the following dimensions:

- Grocery Department Price Image
- Grocery Department Product Assortment Image
- Produce Department Price Image
- Produce Department Quality Image
- Meat Department Price Image
- Meat Department Quality Image
- Bakery Department Price Image
- Bakery Department Quality Image
- Frozen Food/Dairy Department Price Image
- Frozen Food/Dairy Department Assortment Image
- Non-Food Department Price Image
- Non-Food Department Assortment Image
- Overall Image of Employee Courtesy
- Overall Image of Store Neatness and Cleanliness
- Overall Image of Price Specials

The studies measure each of the above image components on a 5 point scale with 1 being the poorest image in the eyes of the consumers sampled, and 5 being the most positive image. An image score of 3.0 represents the norm in the Superstore environment.

### Participant Reports

At the end of each weekly operating period in the simulation, operating reports are provided for each participant team. The reports are provided on a floppy disk (or an electronic mail file). These are:

1. Profit and Loss Statement--This statement shows total profit (or loss) for the week. This statement is broken down by the six departments in Superstore, and appropriate costs are allocated to the proper

departments.

2. Inventory Report--This statement shows beginning inventories, purchases, costs of goods sold, and ending inventories in dollars for each of the six departments.

3. Requested Marketing Research Studies-- Any marketing research studies ordered by a participant group is provided. The appropriate cost of the study is charged in the group's profit and loss statement.

### The Model

SUPERSTORE operates in a fairly realistic market environment that can be varied considerably by the SUPERSTORE administrator. The simulation can accommodate two to ten participant groups, with each group acting as an independent supermarket in direct competition with the other participant groups. The administrator can determine the percent of the market that these groups represent. For example, the simulation can run with five supermarkets that together represent ninety percent of the food market. Alternatively, the simulation can run with five supermarkets that represent only twenty percent of the market. In this manner, different competitive conditions can be simulated.

The simulation operates via an indirect system of multipliers, or corrections, to an average demand. The starting point is an average weekly demand that is determined by the administrator, and is adjusted by a series of weekly index numbers that represent weekly demand fluctuations encountered by a normal supermarket. For example, demand goes up before a holiday, or goes down during vacation time in the summer. This demand is then adjusted based on the respective decisions of the participant firms via an indirect process. The decisions first act on a series of consumer image components. These image components represent consumer perceptions of each supermarket's various departments. For example, a firm's low gross margin would result in a favorable price image in the mind of the consumers. The images are adjusted by a set of fifteen equations with random components. The images then influence current demand, with large fluctuations dampened by an exponential smoothing mechanism.

The entire simulation consists of five large microcomputer programs and several smaller utility programs was written in the C programming language which facilitates the portability and flexibility requirements of the simulation. The programs for each participant group are contained on a single disk, and the programs necessary for the administrator to run the simulation are contained on a single disk. The program is written to run on an IBM compatible computer with two disk drives or a hard disk.

### DISCUSSION

SUPERSTORE has been field-tested on a group of supermarket managers as part of a management development program who found it a

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generally useful experience. As a result of this test, numerous changes have been initiated, mostly in the area of user friendliness in the menu-driven marketing research request program. Some changes in the sales generating algorithms have also been made.

In conclusion, SUPERSTORE represents an attempt to develop a specialized simulation for a specialized marketing program. Despite this intent, SUPERSTORE could have application in a more traditional retailing course in which an instructor desired to emphasize mass merchandising concepts. The program has been found useful in a food industry-oriented management development, and its flexibility portends application in a variety of additional settings.

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