



Software Review
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Using the Simulation Method of Teaching in Higher Education: Marketing and *Marketplace*

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Abstract

Historically, the case study method of teaching has been used by all of the leading business schools. A critical limitation of the case study method is that students never have an opportunity to see or be held accountable for outcomes of the recommendations they propose. The pedagogy of choice for today's cutting edge business schools is the simulation method of teaching. This paper describes the transition from using marketing management case studies to using a marketing management simulation, identifies ten critical teaching tips for faculty wishing to make the transition, and describes the challenges faculty should anticipate in using the simulation method of teaching. Specifically, the exemplary simulation that is the focus of this paper is *Marketplace*, developed by Dr. Ernest Cadotte, Professor of Marketing at the University of Tennessee, and marketed by Innovative Learning Solutions, Inc.

Introduction

Historically, the case study method of teaching has been used by all of the leading business schools (including Harvard, Michigan, Stanford, INSEAD, and IMD among others) (Stonham 1995). Pioneered at the Harvard University Graduate School of Business Administration (Andrews and Noel 1986), the case study method typically requires a small group of students to study the information presented in a case, draw conclusions about what should be done, and then discuss the case in class, describing and defending their recommended course of action (Andrews and Noel 1986).

The case method of learning can provide a host of benefits to business students:

1. Cases allow a better understanding of reality (Stonham 1995). Participants are presented with "messy, real-life problems" (Herreid 1994) which are not clearly defined and contain many variables, and for which there are several solutions (Sansalone 1990).
2. The focus is on students learning through their joint, cooperative efforts rather than on a teacher conveying his/her views to students (Herreid 1994, Merry 1954, Stonham 1995).
3. Cases have a strong appeal for many students who are turned off by traditional lecture-type courses that focus on facts and content rather than on the development of higher-order thinking skills (Andrews and Noel 1986, Herreid 1994).
4. The case method involves the development of skills in oral communications as students are called upon to defend their recommendations (Herreid 1994).
5. Students gain a sense of confidence in themselves and in relating to their peers (Erskine, Leenders, and Mauffetts-Leenders 1981).
6. Students are more likely to internalize concepts used to solve real-world marketing situations (Andrews and Noel 1986, Herreid 1994).
7. The learner retains a set of generally validated core concepts while at the same time acquiring "customized" learning that is powerful, personal and intimate (Bonoma 1989).
8. To the extent that students become more highly involved in a case, they have a tendency to "take ownership" of the company. Ownership is evidenced when students refer to "our company," "our product," "our strengths" or "what we should do" (Harrison-Walker 2000).

However, there is one very critical limitation to the case study method of teaching. Students set forth recommendations, yet never have an opportunity to see what happens once their recommendations are implemented. They look to their professor to find out the extent to which they “correctly” solved the case. As noted by Andrews and Noel (1986), feedback from peers and instructors on the quality of the analysis and the probable value of an action plan is essential to learning by case studies.

The simulation method of teaching is similar to the case study method in terms of the benefits it provides to students. However, the simulation method has some very important added benefits. First, and perhaps most important, the simulation method provides feedback to students regarding the outcomes associated with their decisions. Such feedback may take on various forms, including the impact of the decisions on firm profitability or market share, changes in consumer attitudes, and competitive reactions. Second, students are provided with multiple opportunities to fine-tune their decisions over a period of time. In a simulation, decisions are often made in a series of ‘decision rounds’ and students have an opportunity to change or adjust their strategies each decision round. Third, the situation that students are presented with is dynamic -- it is constantly changing -- and students must continually review and respond to new information as it is presented. Finally, students are able to directly compare their team’s performance to the performance of other student teams. These added benefits make the simulation method of teaching the pedagogy of choice for cutting edge business schools.

The purpose of this paper is to identify, based on personal experience, how to effectively incorporate the simulation method of teaching into a higher education marketing course. The marketing simulation that is the focus of this paper is called “Marketplace.” The Marketplace software is authored by Dr. Ernest Cadotte, Professor of Marketing at the University of Tennessee.

This paper is organized in four parts. First, some background information about the course and course structure are described. Second, the transition to the simulation method of teaching is described. Third, a number of teaching tips gained from five semesters worth of experience are shared. Finally, the challenges associated with using the simulation method are identified. The author has specifically elected not to describe the design or mechanics of the Marketplace software as this information is available from Innovative Learning Solutions, Inc. and is also described in the article by Ernest Cadotte in this issue of [Marketing Education Quarterly](#).

Background Information

The course for which the simulation was eventually used is called Executive Decisions in Marketing. According to the course description, this course is designed to provide students with an opportunity to make information-based strategic and tactical marketing decisions related to such areas as target market selection, product, price, distribution and promotion that increase the probability for success in a competitive marketplace. Many of the students taking this course have not had a class in marketing for several years and therefore basic marketing theory and concepts must be thoroughly reviewed before students can proceed with effective decision-making.

For several years, the course was taught using an adapted approach to the case study method of instruction (see Harrison-Walker 2000). Briefly, students were assigned to teams, two teams were assigned to a single case, and the two groups made presentations during a single class session. This approach allowed students to compare two sets of analyses and recommendations to see that (1) there is not one correct solution for a case study and yet (2) one approach may be more firmly based on the information provided than another. Cases selected for use in the course tended to focus on one aspect of marketing (such as price decisions) and thus theory could be introduced in a sequential fashion. Students were primarily evaluated based on two group cases analyses, and a midterm and final exam. Typically, a comprehensive case analysis involving multiple marketing decisions was given in lieu of an objective final exam.

Transition to the Simulation Method

In the summer of 2001, Innovative Learning Solutions, Inc. announced via the ELMAR subscriber service for marketing academics that they would be beta testing a web-based software for marketing strategy and were looking for classes to participate in the fall of 2001. The software to be beta tested was called "Marketplace." L. Jean Walker, Ph.D. at The University of Houston-Clear Lake volunteered two of her marketing classes to be involved in the beta testing. With only a few weeks notice, the entire format of the class had to change. The one thing that could not be changed at that late date was the textbook ordered for the semester. Fortunately, the casebook that had been ordered contained some marketing theory overview, which proved useful but not sufficient.

Changing from a case approach to a simulation presented its own challenges and concerns. The professor was not familiar with the simulation method of teaching, and it was difficult to gauge in advance the amount of work that might be required on the part of the professor as well as the students. Since the Marketplace software had previously been alpha tested, Innovative Learning Solutions kindly shared a syllabus from a professor who had been involved in the alpha testing. There were also concerns regarding how well the computer algorithm aligned with marketing theory and how responsive the support personnel would be to any questions or problems that might arise.

The approach taken this first semester was to front-end load the class sessions with a review of marketing theory so that students would be prepared to make the decisions required by Marketplace. Accordingly, a single comprehensive midterm exam on marketing theory replaced the midterm and final approach that was previously used. In accordance with the example provided by Innovative Learning Solutions, students were also required to submit quarterly decision summaries (initially required to be a maximum of one page), a marketing plan for the second year, and a final report at the end of the semester. Students were also required to take the Marketplace quizzes provided by Innovative Learning Solutions, however these were graded within-team and not used in calculating student semester grades. Thus, students' grades were primarily based on a comprehensive final exam (administered at mid semester), the quarterly summaries, the marketing plan, the final report, and the cumulative performance scores (based on the last four quarters of play) provided by Marketplace. At the end of the fall 2001 semester beta test of the Marketplace, the marketing students at The University of Houston-Clear Lake

placed second and third in the overall competition. UHCL teams also took first place in three of the seven individual games, and second place in three other individual games.

Because this first semester was a beta test, both the students and the professor were focused on continuous improvement. Students detected a number of minor glitches along the way and they learned to be flexible. The technical and support personnel at Innovative Learning Solutions were impressively responsive to student comments or concerns. The professor focused on improving the course for the following semester. The textbook was changed from a marketing management casebook to a marketing management handbook, quarterly decision summaries were allowed to go to three pages (based on the complexity of the decisions in latter quarters of play), and the marketing plan and final report were modified slightly. The Marketplace quizzes were dropped from use as they did not appear to provide any real benefit.

Top Ten Teaching Tips

In the spring 2002 semester, The University of Houston-Clear Lake marketing students again placed second and third in the overall competition. In fall 2002, UHCL marketing students placed first and second in the overall competition. Based on five semesters of experience with the Marketplace simulation, the following are offered as teaching tip to other faculty that may be interested in using this cutting-edge teaching methodology.

1. Teaching Modules. As mentioned previously, the course is best divided into two, somewhat overlapping modules, one based primarily on theory and the other based primarily on implementation. A potential course schedule is presented in Appendix A. Depending upon the scheduling of school holidays, the first eight weeks of the course might be used to cover marketing philosophies, marketing research, market segmentation, product strategy, pricing strategy, promotion, and marketing management. On the sample provided in Appendix A, quarter one decisions are due in week 6. A comprehensive final is administered in week 9. The marketing plan is due in week 11 and the final report is due in week 16.
2. Team Assignments. Ideally, members should be assigned to teams by the professor with the objective of creating teams that are balanced by skill sets. One way to do this is to ask students during week 2 to review a list of skills required for the semester (such as number crunching, leadership, writing and grammar, oral presentation, and so forth), to evaluate their personal capabilities, and then to list the skills in order from their strongest skill to their weakest skill. If this is done on the back of a 3X5 card on which other information is collected about the student (such as name, telephone, email address, employment, hobbies/interests, etc.), then the professor can easily sort the cards into the desired number of teams to ensure that the teams are balanced in terms of skills. The added benefit is that each student feels valued by the team for the unique set of skills s/he brings to the table.
3. Team Assignment to Games. The professor works with the technical support people at Innovative Learning Solutions to assign teams to games. Every effort should be made to assign each team in a class section to a different game. This allows students to compete only with teams from other schools. If

multiple sections of a course are offered, then one team from one section may compete against one team in another section, as well as against teams from other schools.

4. Advice. The role of the professor is not to give advice. The role of the professor is to serve as a coach, to address questions specifically about marketing theory, and at times to play devil's advocate by asking a team questions to stimulate thinking. The objective is to get the students to apply marketing theory to the situation they face in Marketplace. If students recognize that the professor has been involved in Marketplace before, they may attempt to get the "inside scoop" on how to win. Of course, any professional faculty member would avoid sharing inside information so that his or her students can get the most out of their learning experience. Furthermore, as any faculty member experienced in Marketplace knows, there is no one right way to win at Marketplace. The "best" strategies are totally dependent upon the dynamics specific to each game. What works in one game will not work in another.

5. Total Confidence. Faculty will be running several teams during the same semester and must keep the questions, strategies and decisions of each team totally confidential from all other teams. One team may ask questions that have not been raised by other teams, or begin to think in a particularly creative manner. If this occurs, then that team may have a competitive edge of its own making and should be confident that their ideas will not be shared with other teams.

6. Flexible Lecture Notes. Students may ask to have lecture notes provided to them in electronic format. Although the author has taught the marketing course using Marketplace for five semesters as of the time of this writing, the lecture material is constantly updated and modified for continuous improvement. Particularly in the early semesters of using the simulation, lecture notes need to be kept flexible. Updates may be made right up until class time, an approach the author likes to call "just-in-time teaching." Class notes are not provided in electronic form to students, even after the lecture. Taking notes is one more way that students interact with the course material and thereby aides in the learning process.

7. Marketing Plan and Final Report. After the first year of operations, students are asked to prepare a marketing plan for their second year. An outline of a recommended marketing plan is provided in Appendix B. The marketing plan is provided in electronic form to students via email to (a) help teams prepare an effective plan within the short time allotted (two weeks) and (b) assure uniformity of format across teams, which in turn makes grading easier.

An outline for the written final report (see Appendix C), due to its relative brevity, is simply included in the course syllabus. Only sections A, B and C-2 are presented to the class. The class presentations are the first time that teams get to learn about the dynamics of the other games and thus there tends to be many questions and comments from classmates as students share and compare their experiences. The order in which teams make final presentations is from lowest overall cumulative score to highest overall cumulative score. This has the effect of building a crescendo and interest grows, rather than wanes, with each successive presentation.

8. Closure Through Distribution and e-Marketing. While the Marketplace simulation is reasonably comprehensive in terms of the decisions that students are required to make, it does not require students

to make decisions with specific regard to distribution (channel structure, selection of intermediaries, warehousing, transportation, etc.), aside from the selection of geographic target markets. Therefore, during week 14, a lecture may be introduced to encourage students to think about the company's third year of operations and beyond. Various business-to-business channel structures can be considered, followed by potential expansion into individual consumer markets and the channel implications associated with such a move. Once the various channel decisions are discussed within the context of Marketplace, the pros and cons of distributing direct over the Internet can be debated. This lecture serves to complete the coverage of the four Ps of marketing.

9. Peer Evaluations. At the end of the semester, students are asked to complete an evaluation of themselves and for each of their team members on multiple dimensions of team performance. Measures might include, for example, (a) share of team tasks assumed, (b) team spirit, (c) dependability, and (d) contributions to integrative projects (e.g. the marketing plan and the final report). When all students in a group contribute equally to group projects, each member of the group receives the same group grade. On occasion, one student contributes above and beyond the work of anyone else in the group. Such a student may be awarded extra points over and above the group grade. Alternatively, if a student does very minimal work, according to the consensus of his or her peers, he or she receives the team grade less a penalty.

10. Competing Within School. During the spring and fall semesters, UHCL teams competed with teams from various schools around the globe. However, professors have the option during any given semester to compete within their own school. When competing within school, the professor determines all due dates for decisions to be turned in and Innovative Learning Solutions handles the processing of the quarterly decisions just as during the long semesters. Although the global competition is far more interesting and exciting for students as well as professors, the within school competition can also work reasonably well.

During the summer semester of 2002, there was no opportunity for UHCL teams to compete against other schools (primarily because UHCL's schedule of classes in the summer does not tend to match the summer schedule of other schools). Thus, UHCL teams competed within school this particular semester. Since there was a total of 40 students enrolled in the Executive Decisions in Marketing course in the summer 2002, eight teams of five students each were formed. Dr. Walker was able to structure the competition such that there were two games running with four teams competing within each game. At the end of the semester, this proved to be particularly effective since during the final presentations, teams could see the dynamics of each others' games. There are at least two potential drawbacks to the within school approach. First, since all teams within a game are in the same classroom, they must be particularly careful not to let the other teams overhear their discussions. The second drawback is that all teams are being trained by the same coach. In other words, student teams that compete within school are not unlike a football team that divides players in half to compete against each other for practice. There is much to be gained by playing against a team that plays the same game, yet uses a different playbook.

Challenges Associated with the Simulation Method of Teaching

If the simulation method of teaching is starting to sound close to ideal, then some words of caution should be presented. Any instructor considering the Marketplace simulation (or any other simulation package) should be aware of the considerable time and energy required of the instructor to support a positive and effective learning environment. Immediately following student registration with Marketplace, the professor should download and thoroughly review the 52-page help file. If the simulation has been used in the past, then the professor must be alert to changes in the simulation from one semester to the next as Innovative Learning Systems seeks continuous improvement.

Prior to and throughout the simulation, the professor needs to be available to students via email, providing rapid response. Being responsive often requires that the professor check his or her email at night and on the weekends.

As each round of decisions is processed, the professor will want to review the performance data for each team. Hard copy printouts of performance data (along with the quarterly decision summaries) should be maintained in a three-ring binder for ready reference. Effective coaching requires that the professor meet with each team on a regular basis, which is usually weekly.

Once the semester draws to a close, students should be advised not to pass along tips to their friends who will be taking the course in future semesters. For one thing, there is no one right way to play Marketplace and what works in one game may not work in another. Second, all students deserve the right to be able to reach their own decisions and find their own way.

Finally, professors should be cautioned that not all simulations are as well designed and supported as Marketplace. Professors will want to review a simulation to determine how well it fits with the course objectives, ascertain the extent to which the simulation aligns with marketing theory, and determine the quality and amount of support that will be available if questions or problems arise.

Although the simulation method of instruction requires a lot of work on the part of students, as well as a tremendous amount of time and energy on the part of the instructor, the benefits are many. Perhaps the greatest reward is when, on the last night of class, an instructor overhears students commenting to one another on their way out the door that they wish they could take the class again.

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**APPENDIX A
TENTATIVE COURSE SCHEDULE**

<u>Week</u>	
1	<u>Presentation of Course Requirements</u> Introduction to <i>The Marketplace</i>
2	<u>Marketing Philosophies</u> Collect Student Information
3	<u>Marketing Research, Market, Market Segmentation</u> Group Assignments
4	<u>Product Strategy</u>
5	<u>Pricing Strategy</u>
6	<u>Promotion</u>
6	Q1 Decision Entered Electronically
7	<u>Marketing Strategy</u>
7	Q2 Decision Entered Electronically
8	HOLIDAY - SPRING BREAK WEEK
8	Q3 Decision Entered Electronically
9	Exam
9	Q4 Decision Entered Electronically
10	Discussion of Marketing Plan
11	Second Year Marketing Plan Due
11	Q5 Decision Entered Electronically
12	<u>Sales Force Programs and Incentives</u>
12	Q6 Decision Entered Electronically
13	<u>Discussion of Final Report</u>

- 13 **Q7 Decision Entered Electronically**
- 14 Channels of Distribution and e-Marketing
- 14 **Q8 Decision Entered Electronically**
- 15 Group Work on Final Reports
- 16 **Report to Corporate Headquarters Due (with presentations)**

APPENDIX B
ABBREVIATED OUTLINE FOR MARKETING PLAN

- I. History of the Firm
 - A. Target Markets Selected to Date and Rationale for Selection - For each target market, one at a time:
 1. Identify brand by name
 2. Discuss rationale for brand name
 3. Identify what components you selected to address which consumer need and identify probable market response function for each component
 4. Discuss brand, ad and price performance history for Q3 and Q4
 - B. Identify which of your brands overall are most profitable; show margin calculations.
 - C. Geographic and Sales Decisions
 1. Identify where you opened sales offices that were active in Q4 and how each was staffed
 2. Calculate unit sales per salesperson per city and discuss demand load
 3. Identify which cities are most profitable; show margin calculations
 - D. Company Performance - Briefly evaluate each of the performance criteria.
 - E. Investments in the Future - Identify new sales offices opened in Q4 but not yet active, and brief rationale
 - F. Overall Assessment - Consider everything from items A through E and identify the strengths and weaknesses of your firm.
- II. Marketing Strategy for Second Year
 - A. New segments to be targeted (or dropped) and rationale for decision
 - B. Brand Strategy
 1. Existing brands - For each existing brand (one at a time):
 - a. Selection of new R&D features
 - b. Cost, pricing and margin with new R&D features, if any
 2. Introduction of new brands - For each new brand (one at a time):
 - a. Target segment
 - b. Design (which components selected to address what consumer need and probable response curve for each component)
 - c. Cost, pricing and margin with new R&D features, if any
 - d. Timing of introduction
 - C. Geographic Expansion - Timing and order of new markets, and brief rationale
 - D. Sales Force Staffing By Quarter for All Open Offices - Number and allocation by segment and service, by quarter, for each region
 - E. Advertising Strategy By Quarter (timed to match new offices and brands)
 1. Ad Designs
 2. Frequency by city for local advertising by quarter.
 3. Media selection and frequency by region for regional advertising by quarter
 - F. Sales Promotion Strategy By Quarter - use of POP displays and rebates
 - G. Financial Strategy

1. Cash Flow Requirements - Amount to be invested by quarter in R&D and new sales offices
2. Sources of Money – From corporate headquarters and profits
3. Profitability
 - a. Projections of profits by quarter
 - b. Return on investment by end of second year

Appendix: Tactical Plan

APPENDIX C
ABBREVIATED OUTLINE FOR FINAL REPORT

- A. Review of performance during the second year. Use only the year-end results. Discuss each performance measure, one at a time. Give the score and discuss why you scored as you did.
- B. Review of significant events that affected the company and/or market.
- C. Assessment of marketing strategy and performance during the second year.
 - 1. Comparison of actions taken against tactical marketing plan.
 - 2. Discussion of departures from marketing plan, justification, and outcome
- D. Assessment of strengths and weaknesses.
- E. Has the Marketplace simulation been helpful in developing your marketing skills? How?
(Note that this is not a critique of the design of the Marketplace software; you should focus on the benefits you derived from the Marketplace experience.) There are two ways to do this: you can present your thoughts collectively as a group, or each member can write a couple paragraphs.