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Working to Enhance the Business Simulation Pedagogy: Goals, Strategy, Features and Benefits

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Abstract

Simulations are a form of competitive training that can provide transformational learning to inexperienced students. However, simulation adoptions in our business schools have trailed expectations, often because they have not been easy to use. In order to rectify this limitation and advance the potential for simulation learning, the *Marketplace* business simulation was recently redesigned from the ground up. In the process, the entire simulation pedagogy was rethought. The overall goal was to create a learning experience that far surpassed prior simulation exercises. The purpose of this paper is to summarize this development process and thereby illustrate how a valued pedagogy can be enhanced through careful planning and thoughtful consideration of the goals, strategy, features and benefits of the learning experience.

Introduction

There are many methods of management training. Textbooks, lectures, and case studies represent forms of solitary training. Business simulations represent a form of competitive training in which students pit their business skills against those of formidable opponents under the watchful eye of a training coach. Simulations can help students develop an almost intuitive understanding of business, including a seamless integration of marketing activities and how marketing should work within the rest of the organization.

In spite of the great potential for deep-rooted learning, simulations have played a relatively minor role in business education. Adoptions have trailed expectations because simulations have not always been easy to use. Students are often faced with endless tables to analyze, little direction on how to put the pieces of the puzzle together, and no real narrative to hold their interest from the beginning to the end of the exercise. They are pretty much left to their own devices to chart their path through the maze of information and decisions.

Perhaps the greatest hindrance to adoption has been that faculty perceive simulations as requiring too much work. There are usually disks to handle, programs to run, and data to print and distribute. Also, faculty do not teach so much as they coach. They must help students to understand the market in which they compete, the options that are available to them, and the implications of their choices. All of this takes time and effort. In an environment where research and publication is goal number one, less labor intensive learning options take precedence.

As a developer of simulation learning tools, I have tried to incrementally address these limitations over the last 15 years. Recently, I had the opportunity to completely rebuild my *Marketplace* simulation from the ground up. The impetus was the total overhaul of the undergraduate business curriculum at the University of Tennessee. Jan Williams, Dean of the College of Business Administration, asked me to create a business flight-simulator for our students that was not only relevant but also engrossing,

stimulating, and easy to use. He gave me the resources and allowed me to recruit a wonderful development team to push back the limits on simulation learning.

Given this Greenfield opportunity, I took the time to carefully select my pedagogical goals, formulate a development strategy, and create a well thought-out set of features that would benefit students and instructors alike. The overall goal was to create a learning experience that far surpassed prior simulation exercises. The purpose of this paper is to summarize this development process and thereby illustrate how a valued pedagogy can be enhanced through careful planning and thoughtful consideration of the goals, strategy, features and benefits of the learning experience. In this paper, each of these aspects of the simulation design and development will be reviewed.

Pedagogical Goals

We established six pedagogical goals for the design team. See Table 1.

Table 1: Pedagogical Goals
maximize the learning
be highly relevant to the student’s career
make it easy to teach and learn
eliminate the administrative work
make the learning experience more fun
give instructors a choice in selecting a simulation to fit their course/learning objectives.

Our **number one goal** was to **maximize the learning** potential of a business simulation. Simulations are often seen as transformational experiences because through them students are able to internalize many business concepts, principles, tools and ways of thinking. We wanted to take this inherent strength of simulations and optimize it; that is, to achieve levels never realized before.

For our **second goal**, we wanted to create a learning experience that would provide knowledge and experience **highly relevant to the student’s career**. The takeaway know-how should significantly enhance the student’s ability to do his or her job after graduation. We were not only interested in abstract knowledge, but also in concrete, hands-on skills.

For our **third goal**, we wanted to **make it easy to teach and learn**. No one should have to worry about the mechanical aspects of managing or participating in the simulation. As a companion goal, **we decided to take over all of the administrative work and remove** what we perceive as **the single greatest barrier to adoption**. There should be very little for the instructor to do other than provide guidance to the

students and monitor results. And, the students should focus their energies on strategy, information, decisions, etc., rather than be distracted by busy work.

For our **fifth goal**, we wanted to **make the learning experience more fun**. Simulations are inherently fun, but we thought we could make them even more interesting. We wanted to add more graphics to the interface and data presentation plus personalize the graphics and messages for the students.

For our **final goal**, we wanted to **give instructors a choice in selecting a simulation to fit their course/learning objectives**. One size does not fit all. A single simulation cannot be good for all courses. Therefore, we wanted to create a family of simulations where each has a target course for which it has been optimized.

Development Strategy

Although these goals were simple to state, they required a great deal of work to translate them into a finished product. The next step in this process was to formulate a development strategy. The key elements of that strategy are listed in Table 2.

Table 2: Development Strategy

- Consult with faculty from all of the business disciplines to insure the relevance of the decision-making environment
- Formulate a learning strategy that makes the exercise believable, intuitive, interesting, and relevant
- Focus on decision-making at the tactical level while simultaneously dealing with the broader issues of strategy and resource allocation
- Instill a mental discipline of strategic and tactical management that is based upon information, an integrative perspective of the firm and a balanced set of goals
- Develop web-based delivery that is easily accessible by students and instructors
- Design an interface that is easy to use and has an intuitive look and feel
- Eliminate the administrative tasks that do not add value to the learning process
- Build a family of simulations with varying scope, complexity and context

For the remainder of this paper, I will review the strategic thrusts of the design team and how these were translated into design features and benefits for students and faculty.

Team of Faculty Consultants

A dozen key faculty and industry practitioners were recruited to provide guidance on the content of the exercise. Each was asked: What should students learn, if they could master just a handful of critical issues within the professional's discipline? What, in essence, does every manager need to know? The resulting set of concepts, viewpoints, principles, tools, and ways of thinking were then carefully designed into the simulation. Our goal was to help students develop the competence and confidence they would need to be effective, responsive and competitive in their ensuing careers.

Learning Strategy

At the outset, we decided to rewrite the way simulations are typically formulated. Our goal was to better organize the learning approach so that the simulation experience was more believable, intuitive, interesting and relevant. We also wanted to take more control of the learning in order to increase the impact on the students and lessen the burden for the instructor. Table 3 contains a list of the key features of the learning strategy, along with the benefits we sought for the student and instructor.

Table 3: Summary of Learning Strategy	
Features of Learning Strategy	Benefits
Create a storyline to hold together the flow of the simulation	Organizes the experience from beginning to end Provides a sense of direction Makes the simulation more interesting
Use a new venture situation as the basis for the storyline	New ventures start modestly and build in complexity as the business grows New ventures tend to be exciting All players start with exactly the same resources, no one has an advantage
Gradually layer in new content as the new firm progresses through its lifecycle	Makes it easier to absorb the whole complexity of the simulated business
Organize the work (information and decisions) in a logical fashion using a step-by-step approach	Presents information and decisions in their logical sequence within the story Makes it easier to understand how things fit together Reinforces the proper decision making process Reduces anxiety and confusion Reduces demands on instructor
Write a narrative that follows the life of the firm	Takes the students by the hand through the simulation Helps students focus on the right things at the right time
Use the narrative to help students see how their world is changing	Provides comfort that the evolving situation is normal for a business Facilitates understanding of the new issues and decisions faced each decision period
Use the narrative to introduce new learning material at the point at which it is relevant to the decisions being faced	Students see how various tools and ways of thinking become useful as the firm expands its operations and must take on new tasks and responsibilities. The logic of our business practices becomes more intuitive.
Repeat important concepts, tools, principles, and ways of thinking	Facilitates absorption into the natural thinking of the students

The new venture scenario is key to the learning approach. It allows us to start at the beginning of the story versus in the middle as with a mature firm. Students see how various tools and ways of thinking become useful as the firm expands its operations and must take on new tasks and responsibilities. In this way, the logic of our business practices becomes more intuitive.

The narrative storyline is also integral to the learning approach. It is designed to read like a business novel with student teams acting as the characters. The flow of the story is carefully choreographed¹, but the story is played out by the participants who can take it in any number of directions - a kind of a "choose your own adventure".

The step-by-step menu and the narrative guide the students through the decision-making process. We carefully control what is presented to the students to make sure they are thinking about the right things in the right order. The storyline introduces everything within its proper context, thus making it more believable and intuitive.

For example, the students are always given relevant information (e.g., market data, operational statistics, and/or profit analysis) before they make any decision. They are also provided with the issues, conflicts, constraints and tradeoffs to consider at every juncture in the exercise. The goal is to make it easier to think and work through a complex business program and to develop a thought process that students can carry into the real world.

I consider this learning strategy to be a major breakthrough in simulation pedagogy. First, we continually reinforce the mental discipline to 1) use information to make decisions, 2) consider the links between this decision area and all others, and 3) make sure it all fits within the larger strategy of the firm. Second, we increase the odds that learning will occur because relevant guidance and instruction is provided at a point in time when students are most receptive to learning (i.e., when they are facing a problem that must be

¹ In the simulation, we choreograph each decision period like a chapter in a book. Each period has a dominant activity and a set of decisions that are linked to it. The first chapter or decision period focuses on organizing the team and company. The story then shifts to deciding the firm's future via a market-opportunity analysis and an initial strategic plan. The players then go to market to test their ideas and operations, discover the market's response functions and see what the competition is doing. The chapters/decision periods go on to deal with 1) the preparation of a formal business plan and its presentation to investors, and 2) developing the market via new and refined products, advertising, distribution channels, etc. As students work through the chapters of the firm's life cycle, we phase in managerial content that is relevant to the current decisions.

The idea of choreographing the learning process in this fashion was drawn from the pioneering work of Pier Capretz and his experiential method for learning French. Capritz developed a video (and companion storybook) where actors play out a lighthearted and entertaining story of intrigue and romance. Students learn the French language and customs by vicariously participating in the lives of the characters on the screen. It is a great way to learn French. See Pier Capretz, *French in Action: A Beginning Course in Language and Culture*, Yale University Press (1987).

resolved in order to successfully proceed). Third, we make the story interesting so that students can get caught up in the drama and not even realize they are learning about marketing and business. Finally, we make it easier for instructors to do their jobs. We provide much of the guidance within the simulation. As a result, instructors must deal with fewer questions and less handholding.

Focus on Strategic Planning

The process of strategic planning is emphasized throughout the exercise. Because the competitive landscape is constantly changing, the firm is constantly evolving, and new conditions are choreographed into the storyline, every quarter of play is different. Thus, each decision period requires a reassessment of the situation, an evaluation of options, a reformulation of the strategy and the revised deployment of tactics.

The exercise provides for more than “on-the-run” strategic planning. After the first year of business, the students pause in the play of the game in order to develop a formal, one-year business plan. They are asked to reassess the market, rethink their strategy, and then develop a detailed plan to map out all of their decisions and financial requirements for the next four quarters of play. At the end of the exercise, they must report on their company’s performance, any departures from the business plan, justification for the deviations, and a plan for the future.

Tactical Detail

The new simulation is differentiated from many existing simulations due to its focus on tactical decision making as part of an overall business and marketing strategy. One of the reasons for the focus on tactical detail is that 99% of the work is in the execution of a plan. To paraphrase Thomas Edison, strategy is 1% inspiration and 99% perspiration. The strategy is the inspiration. The tactical execution is the perspiration. And, as Admiral Rickover was fond of saying, “The Devil is in the details.”

A second reason for this emphasis is the desire to take participants to the lowest level of strategic planning so that they can build a strategy from the bottom up, as well as from the top down. This kind of knowledge will help students to formulate strategy in the future. They must know their tactical options and the requirements for implementation. These represent the building blocks of future strategies.

Third, the deployment of tactics is in a constant state of flux. While goals often remain fixed and strategy fairly stable, skillful adjustment of tactics is the rule in execution. New problems, threats, constraints, and even opportunities continually present themselves. The dynamic environment in which strategies are executed once again requires that business people fully understand their tactical options.

Finally, tactical decision-making is more representative of the business environment students will face upon graduation. Let me illustrate.

The simulation is set within the personal computer industry. Among other things, customers buy ease of use, the ability to work while traveling, and the ability to work on tiny details in engineering design. These

benefits allow customers to be more productive, advance in their companies, and thus earn more money and achieve greater security in life.

While customers buy benefits to achieve end states, the firms within the simulation produce components such as disk drives, modems, monitors, etc. The challenge is to select the correct components so that the final product will deliver the desired benefits. For example, to deliver the benefit of being able to use a computer on the road, the students would have to realize the value of (1) a flat display to reduce the computer's size and weight, (2) a rugged design so that the computer can be carried around and handle bumps and falls, and (3) an internet connection in order to send and receive information to and from customers and the office.

This level of tactical detail is a hallmark of the simulation. Whether it be product design, media planning, sales force management, production scheduling or cash budgeting, the goal is to make the decisions representative of the kind that the participants will face in their business careers. Thus, the transferability (relevance) of the learning is much higher.

Balanced Scorecard

Students deal with strategy and tactics, but they must take a balanced perspective in the execution of each. A Balanced Scorecard (Kaplan and Norton, 1996)² is their primary mechanism for checking performance relative to goals. It is a quantitative measure of the student team's ability to effectively manage the resources of the firm. It considers both the historical performance of the firm as well as how well the firm is positioned to compete in the future.

The most important component in the scorecard is the team's financial performance, and thus its ability to create wealth for the investors. However, the focus on current profits has caused many executives to stress the short-term at the expense of the future.

The long-term viability of the firm requires that the team be good at managing not only the firm's profitability, but also its marketing activities, human resources, supply chain, cash, and financial resources. The management team must also invest in the future. These expenses might depress the current financial performance, but are vital to creating new products, markets, and supply capabilities.

In my experience, the best managers are naturally good at managing all aspects of the firm in a balanced way. However, most people tend to focus on a smaller set of objectives and optimize around them. The value of the Balanced Scorecard is that it conditions everyone to develop a discipline of balance and to think and manage in a multidimensional way

From an instructor point of view, the Balanced Scorecard makes it easier to grade. It provides one performance number for each team that is highly related to the quality of the thinking and decision-

² Robert Kaplan and David Norton. *The Balanced Scorecard*. Harvard Business School Press, 1996.

making. It is also a very effective diagnostic tool allowing one to easily to spot a team's strengths and weaknesses. As such, it facilitates the instructor's role as a coach and mentor.

The Mental Discipline of the Simulation

One of our learning goals was to develop and reinforce a good mental discipline for decision-making. At the foundation of this mental discipline is the belief that decision-making is a process that is based upon information, an integrated perspective of the firm, and a plan that links actions to outcomes. By example and through many repetitions, we try to help students think through decisions to their logical conclusion. We make sure that outcomes are always linked to decisions so that they can discover the cause and effect relationships. We make it clear that each decision is not an isolated event but can have positive and negative ramifications on other aspects of the business.

We have gone to great pains to make sure students see the big picture as well as the tactical details. They must frequently revisit their overall strategy and evaluate its performance relative to their goals, current market conditions and available capabilities. We provide tactical planning charts that make it easy for students to literally see all of their major decisions at a single point in time and over all of the decision periods. We make it easy to plot tactical decisions into the future and project the pro forma financial outcome of these actions. We want students to have a crystal clear understanding of the financial implications of their business decisions by linking them to cash flows and bottom line performance. At every opportunity, we push them to consider how one decision impacts another and to consider how the entire set of decisions must be coordinated to achieve the desired outcomes.

Easy to Use with Web-based Delivery

When we started this project for the College of Business Administration, we faced a daunting challenge in the projected numbers of students. At least 700 students, and as many as 1100, would enroll in the class each year. Therefore, the simulation had to be comparatively easy to use by a large number of students with varying levels of computer familiarity and computer access. We also had to create a simulation that required less instructor support than typically provided.

The web represented our best option for large-scale delivery to hundreds of students and a half-dozen instructors. Fortunately, the development tools available for the web are tremendous. Nonetheless, we spent two years of development and testing. Here is a list of the key features that we were able to design into the simulation. These features are also demonstrated in a short, flash demo at:

<http://marketplace-simulation.com/sample-screens/flash-demo.php>

Easy access. The entire simulation is housed on an Internet accessible web server. Consequently, the simulation can be accessed from any computer with an Internet connection and a web browser. Students are able to work from school, home or work at any time. They can even work at the same time.

Virtual teams. The web setup greatly facilitates teamwork. As each student completes his or her work, the decisions are saved to the Internet server. The next student can pick up from the last one and continue the work. There is even a log that shows what work was done, when it was done and who did it.

Easy setup. With the web, there are no downloads, installations, or floppy disks. A processing center has been set up to create the simulation game according to instructor's specifications. The instructor can specify which level of difficulty he/she wants to use, the schedule for completing each quarter's decisions, the number of teams and number of students.

No administration work. After the instructor specifies the schedule for the simulation, the administrative details are handled by the processing center. Automatically, students are reminded when decisions are due. The decisions are processed according to the schedule, the data on the web server is updated, and the students and instructor are notified when they can view the latest results. The instructor does not have to touch anything.

Error Checking and Quality Control. We constantly worry about the "happiness factor." If a team makes an unfortunate key entry error or a serious blunder in their decision-making, they could lose their interest in the exercise, and thus their motivation to learn. Therefore, a validity check is made before the students are able to submit their decisions for processing in order to determine if all decisions have been made correctly. Students receive fatal errors if something critical has been overlooked or if they have made decisions that are considered fatal to their future. They also receive various warnings if the decisions could cause problems, but are allowed if the team has thought through the potential impact carefully.

Finally, the processing center performs a final check on the results to make sure that everything is within the normal bounds. If there are unusual results, the instructor is informed and consulted regarding the disposition of the problem. The goal is to keep the students out of trouble and motivated, and thereby, increase the "happiness" of the instructor.

Easy to monitor student work and results. The instructor has instant access to all student work. With a password, the instructor can monitor the students' progress online. He or she can view the activity and decisions of every team at anytime, even before they are finalized. It is also possible to trace the activity of every single student within each decision period, and for the exercise as a whole.

Once the decisions have been processed and the results are available, a variety of reports and graphs are prepared for the instructor to quickly see how the teams performed. At a glance, the instructor can view market demand, revenue, and profitability. He or she can drill down into measures of customer satisfaction, demand fulfillment, channel profitability, etc. Everything is at his or her fingertips.

Diagnostic Coaching System. In addition to making it easy to setup and administer the simulation, we wanted to make it easier for the instructor to manage the learning process. To this end, we created a Diagnostic Coaching System.

As noted above, the simulation includes a Balanced Scorecard composed of multiple performance indicators. In order to reinforce the use of this management tool, the major part of the Diagnostic Coaching System is built around the balanced scorecard indicators. At the highest level, the system highlights a team's strengths and weaknesses relative to the other teams in the exercise. We use a color-coding scheme to highlight the top performers (various shades of green) and poor performers (various shades of red) in each performance area. This color-coded report is available to both students and instructors.

By clicking on any performance indicator, the instructor and students can drill down into the performance criteria that make up each indicator. The goal is to help everyone to diagnose the potential causes of a problem.

We also built a qualitative monitoring component. Specifically, the system monitors the team's use of relevant information in making decisions. For instance, the instructor can see if a team has reviewed the profit reports on each brand and channel or competitive pricing data when it decides on which brands to sell or their price. It is possible to discover if weaker teams are benchmarking the better brands in their target segments or reviewing the market data on customer needs. (That is, is the team using information or intuition in making its decisions?)

By knowing what information is or is not being consulted, the instructor is able to spot potential trouble areas. This knowledge will allow the instructor to challenge the rationale for these decisions in team meetings. It also presents the opportunity for a mini-tutorial on the use of information in decision-making.

Finally, we provide a performance report for each team member. Each person on the team selects a predefined job title when the executive responsibilities are set in quarter 1. With these job titles come designated areas of responsibility, which in turn, have relevant performance criteria assigned to them. We have prepared a report that highlights how well the company is doing within that student's domain of responsibility. This report is available to both the instructor and the student.

The goal of these student reports is to tighten the link between executive position, responsibility, and performance. There is an old saying, if you want something done, measure it and reward it.

Easy to Use and Intuitive Interface

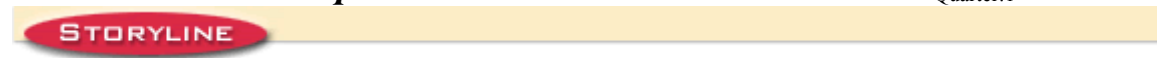
Another of our design goals was to create an interface that is easy to use with an intuitive look and feel. The visual impression is just as important as the substance. Table 4 contains a summary of the interface that was ultimately created.

Everything is organized according to the storyline and the tasks to be completed. Everything is point and click. The step-by-step directions guide the users through the tasks they need to complete within each decision period. There are also extensive help files in which the managerial background to any decision or piece of information is presented. We have tried to place everything the students need to know at their fingertips. The goal is to reduce the technology threshold that students must cross to successfully learn.

Table 4: Design Interface of the Simulation

How to Use *Marketplace*

Shark Computers
Quarter:1



Each *Marketplace* screen is divided into several parts:

The set of icons at the top



There is a set of icons that are always displayed across the top of the screen. These icons give you easy access to several useful options:



Use the <**Sign Off**> icon to end your *Marketplace* session. All your previous work will be saved and you will be able to access it whenever you sign in to *Marketplace* again. Use this option when you want to end your work with *Marketplace* or whenever you complete and wrap up the decisions for a particular quarter.



Use the <**Wrap Up**> icon, to signal to the Processing Center that you (your team) have completed all the entries and changes in your decisions for current quarter. Every quarter, you need to make sure that you wrap up your decisions before the deadline time announced at the beginning of the simulation.



The <**Previous Quarter**> icon allows you to review historical data - decisions and results of previous quarters. You may not make changes in historical decisions. Remember to always switch to the current quarter after reviewing the historical data.



The <**Next quarter**> lets you advance to the next quarter after your decisions are processed by the Processing Center. This icon also allows you to return to the current quarter after reviewing historical decisions. You may need to click this icon several times if you had switched back several quarters.



The <**Activity Log**> icon displays the log of all activities that were performed by the members of your firm within the current quarter.



The <**Professor Help**> icon allows you to access the on-line help materials.

Additional Information and Decisions

This option provides you with access to the additional information and decisions which are not listed in the task list. Click the small arrow on the right of the box to display the list of available actions.

The Task List



To the left on each screen is a list of actions to be performed in the current quarter. You can enter any decision area by clicking on the related topic in this list. A set of step-by-step actions will take you through the decisions to be made each quarter. This step-by-step approach is a logical way to study the data and make your marketing decisions.

The Decision Area

Each screen will present information for you to review and act upon. It is divided into several sections:



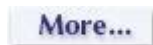
The Storyline section summarizes the latest trends and situation in the market.



The Task section explains the actions which you need to take in a particular decision area.



The Workspace section is your actual workspace where you enter your decisions and view the results.



If there is more information available in a particular section than can be easily shown on the screen, the <More> button will appear at the bottom of the section.

In the Workspace section where you will be entering your decisions, the following buttons will appear:



Clicking on this button will allow you to start making your entries/changes in the workspace area. Only one person can modify a decision area at a time. If a teammate is making changes to a marketing decision, you will not be able to modify the entries in this area. If no one else is making changes, then you will be free to enter your decisions. At this point the decision fields will open up and you can type in your entries. When you are satisfied with your decisions, click on the <Save> button.



Clicking on this button will save any entries or changes you made in the decision area.



Clicking on this button will exit the decision area without saving any changes.



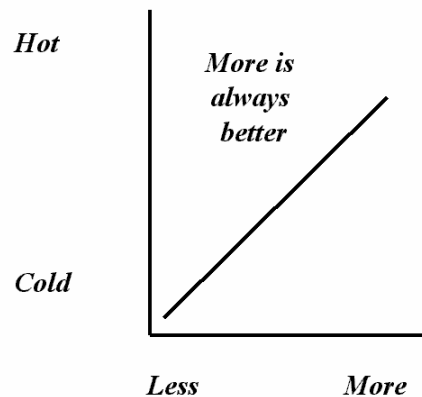
This button will be useful in some screens to compute totals after you have made your entries.

Instructor Choice in Selecting a Simulation to Fit Course Needs

For more than 20 years, I have been refining my business simulations. Realism has always been my number one goal. I reasoned that the more realistic the exercise, the better the learning experience. I thought my customer's response function looked like Figure 1, more is better.

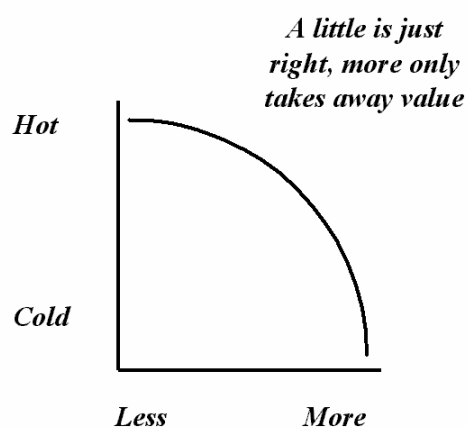


Figure 1: Assumed Response Function for Realism (Complexity) in All Simulations



What I failed to realize was that more realism also translated into more complexity. As I added complexity, I increasingly made it more difficult for participants to learn, a fact that hit home when I began to develop a simulation for an introduction to marketing course. Added realism in this case caused dissatisfaction, and the curve looked more like Figure 2.

Figure 2: Response Function for Complexity in Introductory Course

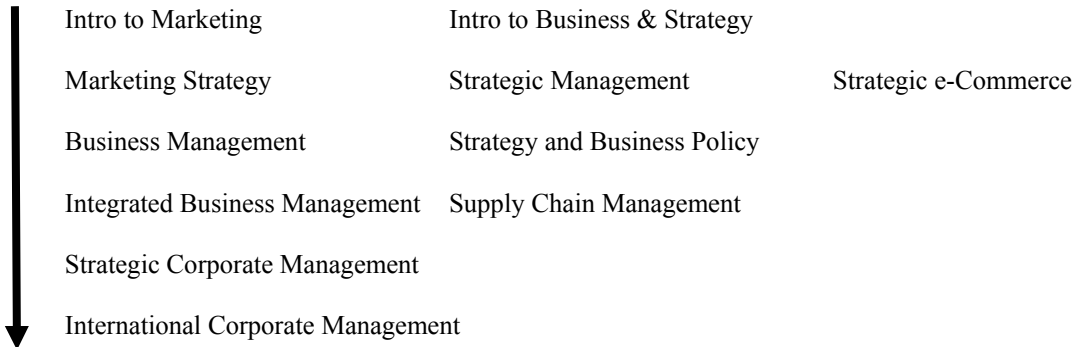


I realized that “ease of use” was an important goal for student groups with less business experience. In much the same way that Windows made the PC a household tool and Netscape made the internet available to everyone, the easier I made it to learn, the happier students and faculty became. Thus, ease of use is a primary goal for introductory courses and realism is my goal for advanced courses.

The tradeoff between ease of use and realism plays out in a number of ways in the simulations that have been designed. As shown in Table 5, a family of simulations have been created.

Table 5: Target Courses and Simulation Options	
Target Course	Simulation scenario
Marketing Principles / Introduction to Marketing	Introduction to Marketing
Marketing Management / Strategy	Marketing Strategy Business Management
Product Design	Marketing Strategy Business Management
Introduction to Business	Introduction to Business and Strategy
Business Policy	Strategy and Business Policy Venture Strategy Introduction to Business and Strategy
New Ventures	Venture Strategy
e-Commerce	Strategic e-Commerce
Advanced Logistics/ Supply Chain Management Advanced Channel Management	Supply Chain Management
Integrative/Capstone Course, especially at the MBA and EMBA level	Integrated Business Management Strategic Corporate Management International Corporate Management

This family is designed to give the instructor a choice in selecting a simulation that best fits the learning objectives of the course. The level of difficulty in the simulation increases in the following order (low to high):



There are three factors that determine the level of difficulty of these simulations; disciplinary emphasis, number of decisions, and complexity of decisions.

Disciplinary Emphasis. The simulations vary relative to the emphasis placed upon the different disciplines within the simulation. For example, the Introduction to Marketing and Marketing Strategy simulations focus almost exclusively on marketing issues. See Table 6.

Table 6. Relative Emphasis of Marketing Content in a Simulation	
Simulation Scenario	Emphasis of Marketing in Simulation
Introduction to Marketing Marketing Strategy	Pure marketing
Business Management	Marketing dominates but manufacturing, finance and accounting issues must be taken into consideration

Strategic Corporate Management	Marketing on equal footing with manufacturing, distribution, finance, accounting, and human resources in an integrated firm
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In contrast, while marketing dominates the decision making within the Business Management simulation, marketing decisions are placed within the context of a whole firm. Students must deal with related issues in manufacturing, finance and accounting. In the case of Strategic Corporate Management, marketing has an equal footing with the other functional areas. Marketing is totally integrated into the fabric of the firm and the teams must deal with many tradeoffs and conflicts between marketing, manufacturing, distribution, human resources, finance and accounting.

Number of Decisions. The simulations also vary in terms of the number of decisions that must be made. Table 7 summarizes the decision content of each of the twelve simulations that have been designed. Listed down the left-hand side of the table are all of the decision areas that appear in various simulations. Choosing from this list, simulations have been built that either highlight the fundamentals of the discipline (i.e., Introduction to Marketing) or provide in-depth treatment of the decisions that are typically faced by professionals in that discipline (i.e., Marketing Strategy).

Table 7. Simulation scenarios, course focus and decision content

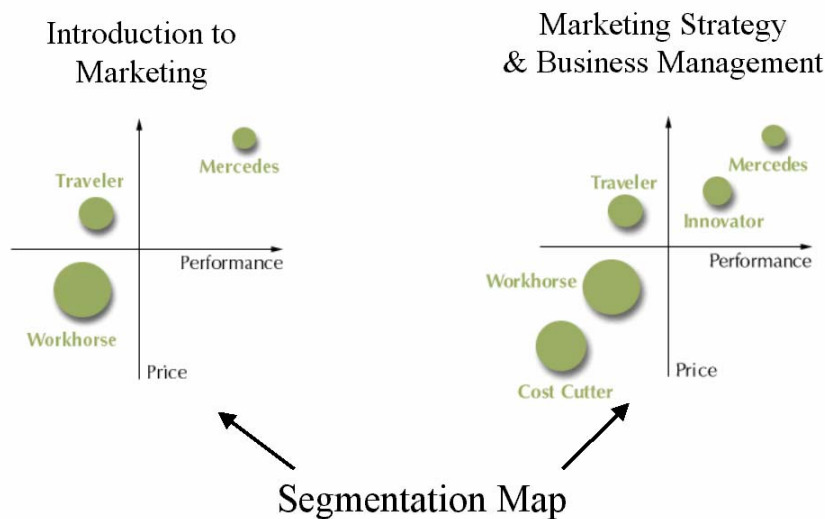
Decision Content	Introduction to Marketing	Marketing Strategy	Advanced Marketing Strategy	Introduction to Business and Strategy	Business Management	Venture Strategy	Strategic E-Commerce	Strategy and Business Policy	Supply Chain Management	Integrated Business Management (2-year and 3-year)	Strategic Corporate Management (2-year and 3-year)	International Corporate Management (2-year and 3-year)
Target Courses:	Marketing principles, introductory marketing courses	Marketing strategy, marketing mgmt, capstone marketing courses	Marketing strategy, marketing mgmt, capstone marketing courses	Principles of business, introduction to business courses, also business policy	Marketing management, new ventures, capstone marketing and capstone business courses	New ventures, business policy, and capstone business courses	e-commerce courses	Business policy, and capstone strategy courses	Advanced logistics and supply chain, advanced channels course	Integrative business courses	Integrative business courses	Integrative business courses
Basic Info:	6 quarters 4 regions 3 segments	8 quarters 12 regions 5 segments	8 quarters 20 regions 5 segments	6 quarters 4 regions 3 segments	8 quarters 20 regions 5 segments	6 quarters 4 regions 3 segments	6 quarters 4 regions 3 segments	6 quarters 4 regions 3 segments	6 quarters 3 regions 3 segments	8 to 12 quarters 20 regions 5 segments	8 to 12 quarters 20 regions 5 segments	8 to 12 quarters 20 regions 5 segments
Time per decision round:	½ to 1 hour	1 to 2 hours	2 hours	½ to 1½ hours	2½ to 3 hours	1½ to 2 hours	1½ to 2 hours	2 to 3 hours	3 to 3½ hours	3 to 3½ hours	3½ to 4 hours	4 to 4½ hours
Marketing Fundamentals	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Profit Analysis ABC (Activity Based Costing)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Advanced Marketing Tools Regional media, brand promotions, sales force incentives		✓	✓		✓					✓	✓	✓
Accounting, Finance and Manufacturing Fundamentals				✓	✓	✓	✓	✓	✓	✓	✓	✓
Financial Analysis Financial ratios, pro-forma planning				✓	✓	✓	✓	✓	✓	✓	✓	✓
Business Partner Negotiations Licensing R&D features					✓	✓	✓	✓		✓	✓	✓

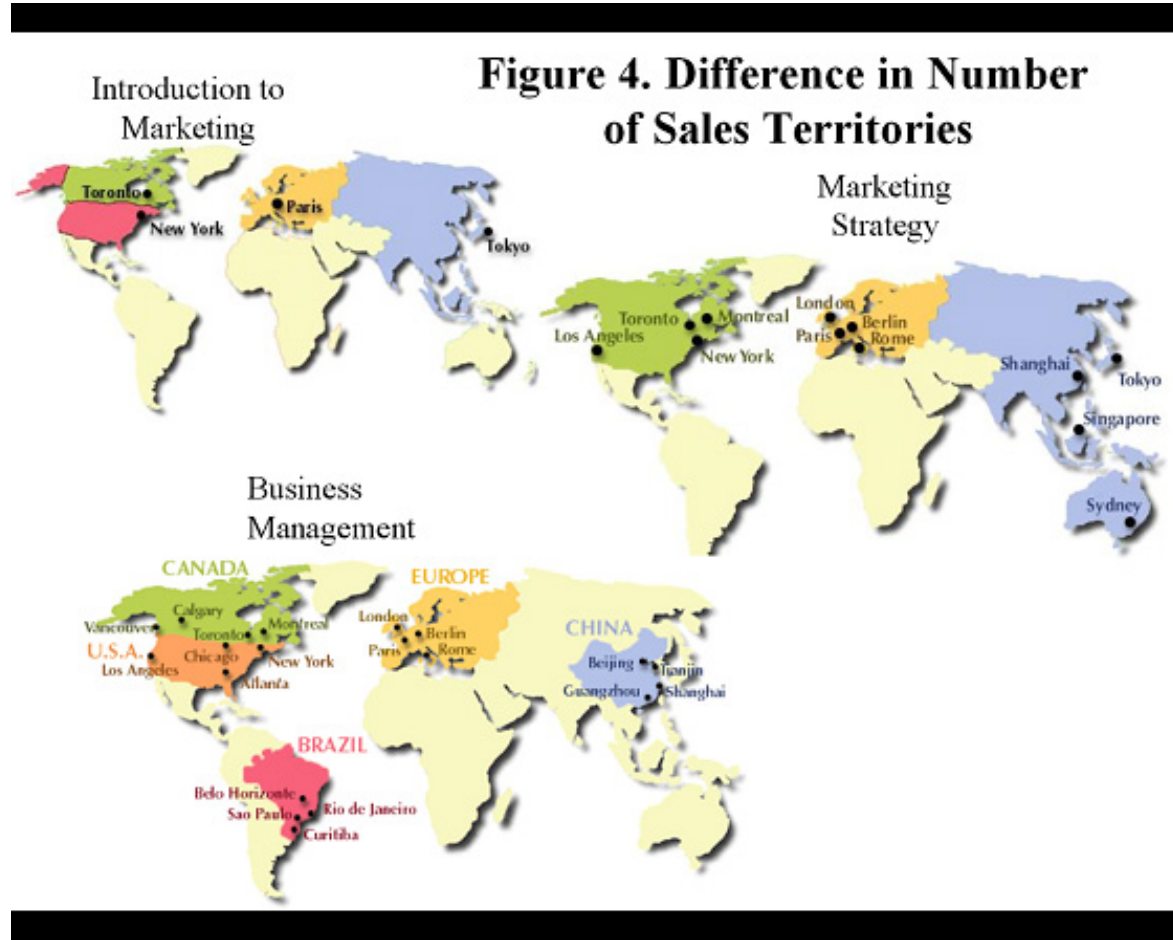
Human Resource Management Compensation, productivity issues	✓	✓	✓	✓	✓	✓	✓
e-Commerce Brick and mortar + web sales channel		✓	✓	✓		✓	✓
Advanced e-Commerce Competition Resource intensive web marketing			✓			✓	✓
Advanced Strategic Planning Strategic planning & analysis template				✓			Optional
Advanced Manufacturing Options Production scheduling, brand changeover, quality control					✓	✓	✓
Capital Structure Short & long-term loans						✓	✓
International issues Political changes, tariffs, exchange rates					✓		✓
Outsourcing Negotiate & manage buyer/supplier logistical system					✓		Optional
Advanced Sales Channel Firms specialize as either manufacturers or resellers					✓		

Complexity of Decisions. With certain courses, the objective is to touch on the fundamentals of marketing in order to illustrate the nature of marketing. The desire is to have a short, fun exercise that clearly illustrates marketing thought. In other cases, the instructor may want considerable depth and sophisticated decision-making to prepare a student for a career in that disciplinary area. The complexity of a simulation was varied by adjusting 1) the scope of the game scenario, 2) the amount of information presented, 3) the number and variety of decisions in any tactical area, and 4) the number of options to choose from for any decision.

Scope of Game Scenario. In terms of the scope of the game scenario, the number of sales territories and segments that must be targeted was adjusted. Figures 3 and 4 illustrate the selection of the segments and sales territories for the Introduction to Marketing, Marketing Strategy and Business Management simulations. By adding in more markets and segments, the strategic and tactical options can be expanded in the higher level simulations, and thus the complexity.

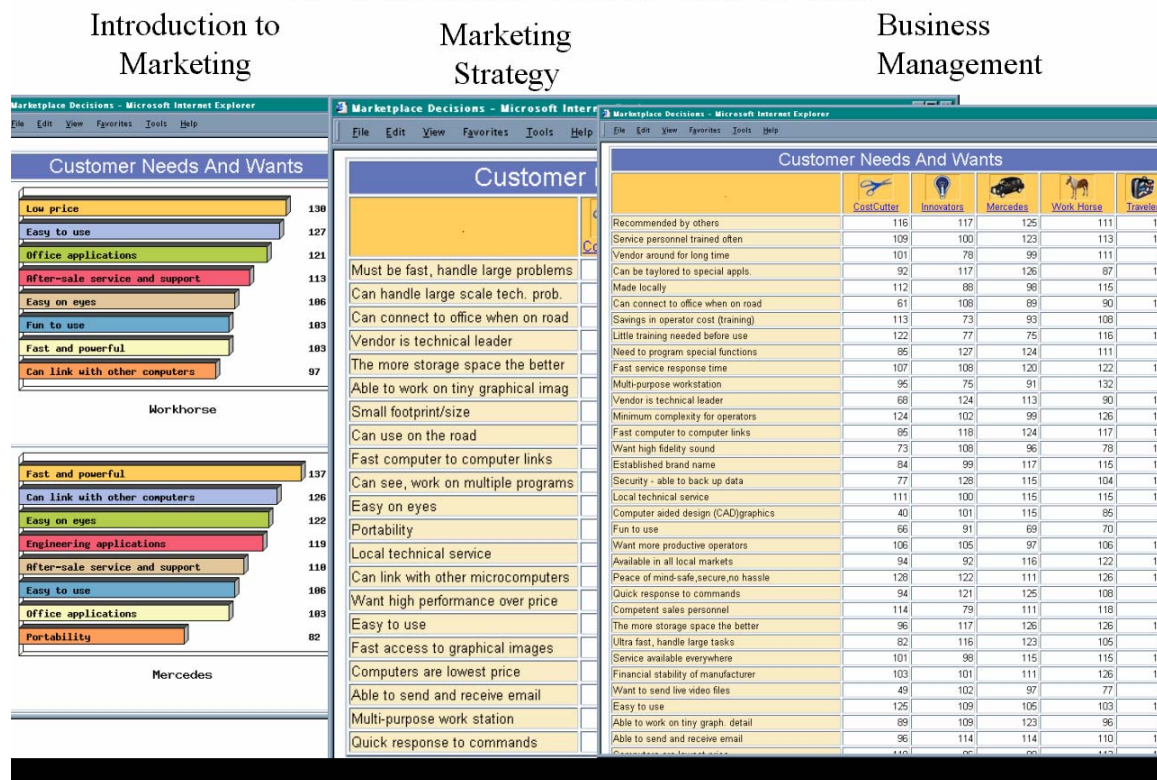
Figure 3. Differences in Segmentation by Level of Simulation Difficulty





Amount of information. To illustrate how the amount of information presented has been adjusted, consider Figure 5. In all of the simulations, the students must deal with designing brands, creating advertising campaigns, setting product prices, etc. These decisions are largely based upon the market research that is presented regarding the needs and wants of the customers. In the Introduction to Marketing simulation, the list is limited to the most important needs and wants while the list is very extensive in the case of Business Management.

Figure 5: Variation in Detail of Customer Needs and Wants



Number of options within a decision. To add or reduce complexity, the number of options that are available within any decision area has been adjusted. Figure 6 illustrates the tactical detail in designing brands and Figure 7 illustrates the tactical choices in designing ad copy. Figure 8 illustrates the sales management decisions that exist only within simulations with the more advanced marketing content.

Figure 6: Differences in Brand Design Options by Level of Simulation Difficulty

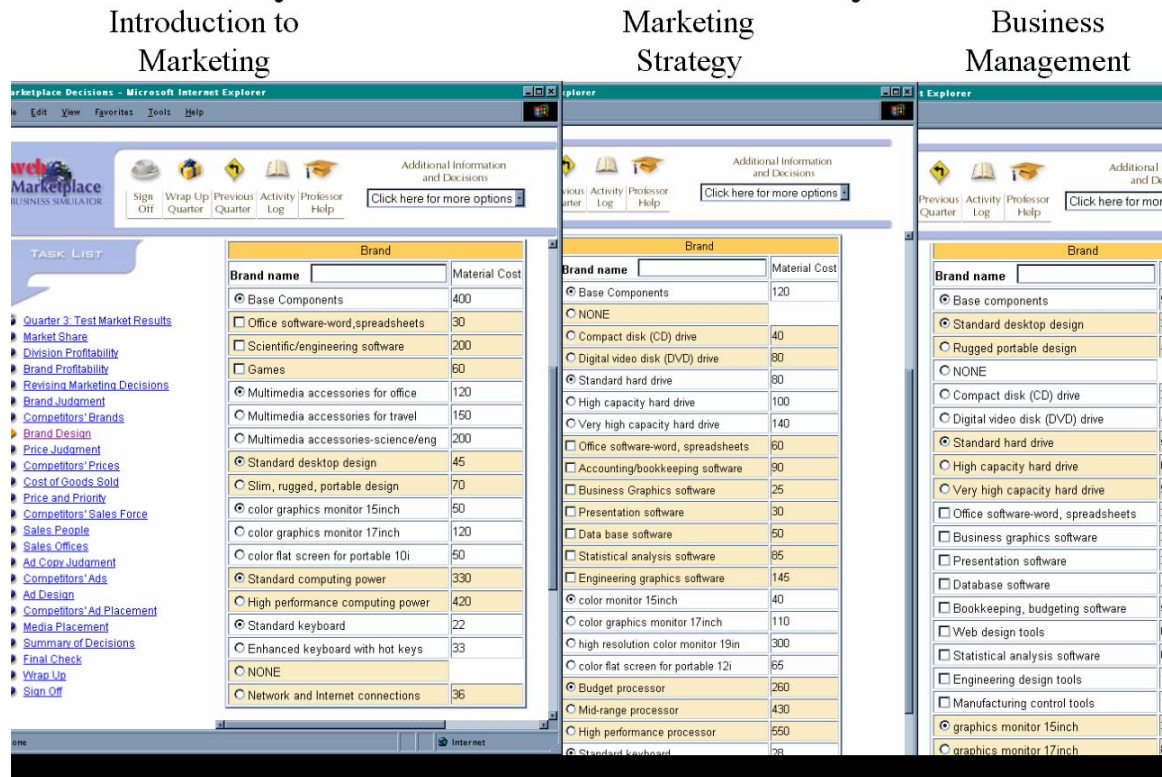


Figure 7: Differences in Ad Copy Options by Level of Simulation Difficulty

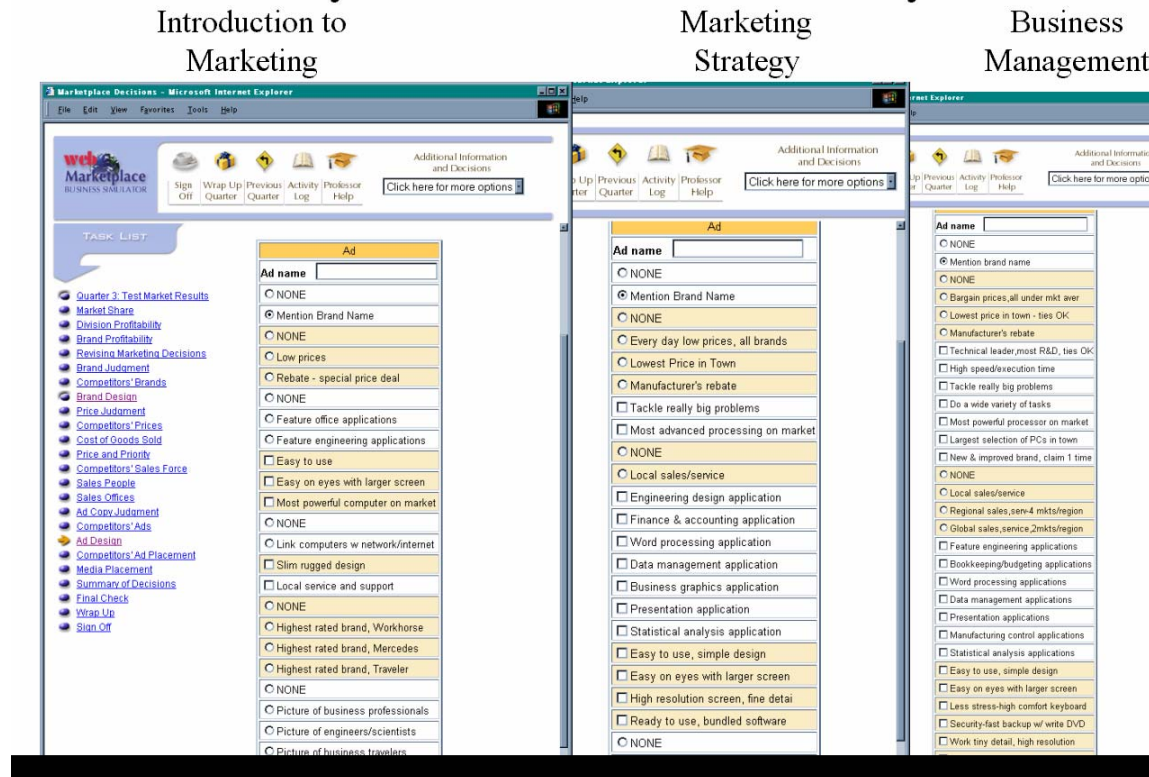


Figure 8: Availability of Sales Management Options in More Advanced Simulations

Only in Marketing Strategy & Business Management

The figure displays two side-by-side screenshots of an Internet Explorer browser window, showing simulation options for sales management. Both windows have a navigation bar with 'Previous Quarter', 'Next Quarter', 'Activity Log', and 'Professor Help' buttons, and a 'Click here for more options' link.

Left Window: Special sales force programs

Number of sales people	
Total:	72
Last Quarter:	67
New:	5

Sales Force Professional Training Program	
Typical cost per salesperson	1,000
Expenditure per salesperson	0
Total expenditure for this program	0

Sales Force Contest Program/Special Vacation Trip for Top Third of Sales Force	
Typical cost per salesperson	2,000
Monetary value of vacation	8,000
Total expenditure for this program	192,000

Sales Force Demonstration Kit Program	
Typical cost per demonstration kit	200
Expenditure per demonstration kit	0
Demonstration kit expires in quarter	15
Total expenditure for this program	0

Right Window: Sales Force Promotions

United States

Total Sales People in Region: 41

Brand	Cash Bonus for Top Third of Sales People	Free Gift (SPIFF) for Top Third of Sales People
	Typical: 500	Typical: 100
Hurricane	500	0
Schlitz	500	0
2DMBoss	500	0

Canada

Total Sales People in Region: 5

Brand	Cash Bonus for Top Third of Sales People	Free Gift (SPIFF) for Top Third of Sales People
	Typical: 500	Typical: 100
Hurricane	500	0
Schlitz	500	0
2DMBoss	0	0

Conclusion

No single learning approach can fulfill all of the needs of our students. Innovative technological tools can refine and advance management education, giving us greater freedom to help students visualize, experience, comprehend, and retain what we want them to learn. There is almost nothing we cannot simulate or present in sufficiently realistic detail.

The purpose of this paper has been to illustrate the process by which a business simulation was systematically redesigned using these technology tools to achieve new levels of experiential learning. The fundamental goal was to maximize the learning potential. To achieve this goal, an innovative learning strategy was formulated and executed. This strategy was to more carefully control the learning process in order to make it more interesting, intuitive, relevant, and easier; thus improving the odds that important concepts, principles, tools and ways of thinking become absorbed into the fabric of the participants.