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Using Technology to Teach Pricing Concepts

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Abstract - This paper identifies a useful technology tool that aids in the teaching of pricing strategies and allows students to experience the interactive effects of decisions involving pricing, production levels, and promotional spend. This innovative technology tool can be easily implemented either online or in the classroom. Concepts related to pricing strategy do not typically evoke enthusiasm from students, and in many cases, both students and professors would welcome an engaging, innovative way to teach the key concepts of pricing strategy. In the past, attempts to convey pricing concepts through experiential learning have involved large-scale simulations that extend throughout the length of a course. However, many professors are beginning to question the pedagogical merits of these large-scale simulations and are finding that with the semester-long simulations, lessons related to specific areas of marketing, such as pricing, are often lost in the face of what students perceive as more glamorous decisions. Microsimulations are short, computer-based, dynamic games that can be played in one or two class sessions. The authors discuss the use of a specific pricing microsimulation that engages students in learning, improves student satisfaction with learning, develops greater understanding of content, and fosters retention of lessons learned.

Keywords – business simulation, business game, innovative pedagogy, marketing education, microsimulation, marketing simulation, pricing simulation, teaching pricing

Relevance to Marketing Educators, Researchers and/or Practitioners – the microsimulation described in this article allows marketing educators to teach pricing concepts in a fun and innovative way that fosters student understanding and retention.

Introduction

Many studies have shown that business executives perceive that business school programs are not teaching the behavioral and critical thinking skills needed for successful business innovation and management (Barr and McNeilly, 2002; Bennis and O'Toole, 2005; Chapman and Sorge, 1999; Datar et al., 2010; Ghoshal, 2005; Maiden and Kerr, 2006; Mintzberg, 2004; Pfeffer and Fong, 2002; Rousseau, 2012). Communication skills, interpersonal skills, problem-solving skills and decision-making skills have consistently been stressed as being even more important for graduates than the technical understanding of business processes, and as an important addition to theoretical knowledge (DETYA, 2000; Gosling and Mintzberg, 2006; Hogg, 2004; Maes et al., 1997; Abraham and Karns, 2009; Rousseau, 2012).

Perhaps most important among business skills sought is “the ability to analyze and synthesize information” (Atkins, 1999: 269). Business schools need to give students a more “empirically-grounded competency profile” (Jackson, 2009: 220), with competencies that are flexible and adaptable to changing business situations (Bell et al., 2008). Greiner et al. (2003) note that marketing graduates require “knowledge-in-action”, the ability to make spontaneous decisions based on the environment, and that developing this skill requires “a healthy dose of learning-by-doing” (Greiner et al., 2003: 402). Organizations such as the Association to Advance Collegiate Schools of Business (AACSB) consistently encourage faculty to actively engage students in the learning process.

Engaging a New Generation of Students

Professors in the twenty-first century are facing the challenge of adapting their teaching styles to best reach a generation focused on virtual entertainment, communication, research, and learning. Frequently, there is an unfortunate disconnect between current teaching methods and “the technology-rich V-gen learning world” (Prosperio and Gioia, 2007: 70). This virtual generation, also dubbed “NetGen”, requires teaching pedagogies and methods adapted to best take advantage of this new generation’s different learning styles and capabilities (Drea et al., 2005; Ganesh and Sun, 2009; Matulich et al., 2008; Sullivan, Colburn and Fox, 2013). Whereas some have called the current youth culture passive, Prosperio and Gioia (2007) argue that students today are not passive, they just expect to interact and participate, so they are unlikely to feel involved or satisfied in a traditional lecture class (see also Alavi et al., 1997; Li et al., 2007). They tend to prefer experience-oriented and active learning methods (Drea et al., 2005; Ganesh and Sun, 2008). To keep this generation engaged, educators must add more interactivity into the teaching environment. “Students now expect rich, interactive, and even playful learning environments.” (Prosperio and Gioia, 2007: 73; see also Bell et al., 2008; Chou and Liu, 2013) To reach this new generation, instructors need to move further from the “sage on the stage” model, and toward greater use of the “guide on the side” coaching model of teaching (King, 1993: 30; see also Ganesh and Sun, 2008; Kerr and Avila, 2013; Li et al., 2007; Prosperio and Gioia, 2007).

Studies have shown that increased levels of involvement not only improve students’ evaluation of courses, but also lead to higher order learning (Chapman and Sorge, 1999; Nelson and Bianco, 2013; Randel et al, 1992; Seaton and Boyd, 2008; Shellman and Turan, 2013; Wolfe and Luethge, 2003). While lectures and textbook reading provide knowledge at

the lower levels of Bloom's taxonomy, activities and assignments that involve the students lead to higher level learning outcomes (Cook and Swift, 2006).

Business Games and Simulations

Business games and simulations are active learning methods that involve students and give them the sense that they have had relevant business experiences without taking actual risk (Adobor and Daneshfar, 2006; Curland and Fawcett, 2001; Kerr and Avila, 2013). Playing business games gives students the opportunity not only to make decisions, but also to evaluate the results of those decisions and react with new decisions. Players are required to make repeated decisions under time constraints, in conditions of uncertainty, and in competition with other players (Wolfe and Luethge, 2003). Students participating in business games learn to consider the interactive effects of variables and the impact of change over time (Anderson, 2005; Cook and Swift, 2006). "The entire dynamic of a classroom changes when the student is given immediate feedback." (Seaton and Boyd, 2008: 113)

These experiential learning approaches lead to active participation and increased engagement of students, resulting in greater understanding (Adobor and Daneshfar, 2006; Drea et al., 2005; Stegemann and Sutton-Brody, 2013). Students exposed to business games and simulations have consistently stated that they learned more through this method than they would have in traditional lecture courses and that they are better prepared to make decisions in a business environment (Chapman and Sorge, 1999; Li and Greenberg, 2009). Business games increase students' dynamic, recursive, and generative learning (Feinstein et al., 2002; Li and Greenberg, 2009; Zantow et al., 2005) and enhance critical and strategic thinking skills (Adobor and Daneshfar, 2006). Studies examining various types of teaching techniques have shown business games and simulations to be the method leading to the greatest learning (Jennings, 2002; Li et al., 2007; Moratis et al., 2006; Teach and Govahi, 1993). Business games have also proven to be most effective at teaching skills that traditional lectures are weakest at teaching (Trapp et al., 1995; Murray, 2013), to help make course material more meaningful for students (Cook and Swift, 2006; Zantow et al., 2005), and to lead to longer retention of learned information (Drea et al., 2005).

The competition in most business games also offers the opportunity for students to develop teamwork and interpersonal skills (Faria and Wellington, 2004). In addition, business games and simulations are a very welcome form of learning for today's generation of marketing students. The majority of marketing majors have been found to have an "accommodator" learning style which favors active, experiential learning (Kolb, 1985; Loo, 2002). Assessments of game usage have shown consistently high levels of enthusiasm, commitment and involvement by students exposed to these games, with students rating simulations as the most interesting part of those courses where they are offered (Chapman and Sorge, 1999; Drea et al., 2005; Fawcett and Lockwood, 2000; Feinstein et al., 2002; Kerr and Avila, 2013; Mitchell, 2004). Simulations are also popular with the professors who use them. According to a study of 15,000 professors conducted by Faria and Wellington (2004), 96% of professors who have used business games in class say they will do so again (p. 196).

Microsimulations

Given the many benefits of using simulations in the classroom, one might expect wide usage. Faria and Wellington (2004) found that 35% of professors who did not use business games cited the lengthy preparation time required (see also Seaton and Boyd, 2008). Those who did use simulations said they spent nearly 30% of class time on the game (Faria and Wellington, 2004). Using almost a third of class time to focus on one mode of pedagogy has distinct disadvantages. Numerous studies have shown that students learn more effectively and develop a broader set of skills if a variety of teaching methods are used (Jennings, 2002; Lengnick-Hall and Sanders, 1997; Trapp et al., 1995). Each method teaches different skills and appeals to different learning styles (Drea et al., 2005; Teach and Govahi, 1993). “Individual differences among students as raw materials must be met by equally diverse learning process options if consistent, high quality outcomes are to result” (Lengnick-Hall and Sanders, 1997: 1335-6). Since students are co-producers in the learning process, pedagogical variety should be sufficient to accommodate a wide variety of student inputs (Barr and Tagg, 1995; Lengnick-Hall and Sanders, 1997). Given the time required for semester-long simulations, educators are hard-pressed to include the variety of teaching methods that appear to work best with the Net generation.

Numerous authors have suggested that some simulations are too complex, leading to confusion, frustration, and role overload by students (Frazer, 1985; Hall and Cox, 1994; Teach and Murff, 2008). Bell et al. (2008) caution educators that “more or richer information does not necessarily facilitate better learning. The key is selecting a mode of information presentation that will optimize learners’ ability to understand and make sense of the material.” (Bell et al., 2008: 1420) Researchers have noted that for business simulations to be effective, they need to be complex enough to reflect reality, but not so complex that it is difficult to see links between variables or to understand the relationship of the results to the decisions (Feinstein and Cannon, 2002; Thompson et al., 1997). In a study of business simulations conducted by Adobor and Daneshfar (2006), ease of use was shown to be directly and positively related to problem-solving learning. In addition, Lengnick-Hall and Sanders (1997) stress that to be effective and motivating, learning activities need to have “clear, challenging, but achievable, measured goals” (p. 1340). Teach and Murff (2008) bemoan the fact that business simulations have evolved into very large and complex undertakings. They recommend that professors move back to smaller, limited-purpose microsimulations for teaching relevant business skills and concepts (Teach and Murff, 2008).

Microsimulations are short, focused business simulations that provide one or two simple lessons and that can be played over one or two class sessions (Burns and Sherrell, 1982; Frazer, 1985; Teach and Murff, 2008). These microsimulations provide student learning benefits that are distinct from semester-long, complex simulations in that they allow students to actively participate in focused decision making without undue distraction and thus to more easily grasp the effects that specific decisions have on game results. Teach and Murff (2008: 206) quote Springer et al. (1965: 178): “The power of a model in solving a problem comes precisely from its not corresponding to reality except in those details pertinent to the problem at hand.” They maintain that a significant benefit of microsimulations lies in the fact that they represent the real world through the abstraction and simplification of reality, and that this makes it possible for students to focus on a specific problem (Teach and Murff, 2008).

Barriers to Effectively Teaching Pricing Concepts

Whereas educators and business executives agree that it is crucial for all business students, including marketing students, to have a solid grasp of accounting and financial issues (Curland and Fawcett, 2001; Marshall and Pearson, 2007), many studies have shown that business students, especially marketing students, generally have difficulty using numbers to make decisions and evaluate results (Abernethy and Gray, 2000; Curland and Fawcett, 2001). In fact, a surprisingly large number of marketing students actually have a fear of numbers (Curland and Fawcett, 2001). Classroom or online simulations can aid students in developing greater comfort working with numbers in a non-threatening environment, and can help teach them how to use numbers to make decisions and to interpret and evaluate feedback (Curland and Fawcett, 2001).

In addition, students and professors often find the topic of pricing boring and difficult to teach, so it doesn't receive the attention that it deserves in marketing courses (Haytko, 2006; Maxwell, 1998). Maxwell (1998) tells us that many marketing educators see pricing as the "most serious curriculum gap" (p. 338). Ferrell and Gonzalez (2004) argue that it is important for marketing educators to develop classroom exercises that will make pricing interesting and relevant to students (see also Heath et al., 2013). Marshall and Pearson (2007) state that since pricing requires constant adjustments to changing market conditions, in order to properly learn pricing students should have a "hands-on" experience making pricing decisions. Curland and Fawcett (2001) and Haytko (2006) found that using a business game in class to teach pricing substantially reduced students' apprehension in dealing with accounting information and had a positive effect on students' interest in pricing topics.

Price Production Promotion Strategy Microsimulation

One example of a microsimulation being used to effectively teach specific concepts and strategies is a series of pricing games that have been tested by these authors in a variety of marketing classes. This microsimulation focuses students' attention on specific decisions related to pricing, production, and promotion, and the interplay among these decisions. The first game in this microsimulation requires students to make pricing decisions within a particular customer and competitive environment. Once students have a feel for how the sales response function is related to their pricing decisions and their competitors' pricing decisions, the second game then asks students to also consider how their sales forecasts, and the resultant over or under-production of product, will affect their bottom line. Once students have become comfortable with both pricing and production decisions within this specific environment, the third game can be introduced, asking students to also make decisions regarding promotional spend and to consider the costs and potential market-building benefits of this spend.

Although many of these concepts are quite difficult to convey using traditional pedagogical means, this microsimulation is set up in such a way that students receive immediate feedback on the results from their decisions and hence very quickly learn the consequences of decisions in that particular marketplace. The microsimulation is designed

so that professors may decide how quickly they move students through these different decisions, and how and when to introduce each new variable.

The microsimulation described in this article includes three individual games and revolves around a “dynamic case” (Ganesh and Sun, 2009) that has been adapted, with permission, from a series of business simulations written as single-class exercises by Frazer (1986). This particular three-game microsimulation is from a series of games called *Frazer Business Simulations* (Frazer and Winsted, 2013), and is available from Winsted Publishing (winstedpublishing.com). The three individual games that are part of the microsimulation discussed here are: Pricing Strategy; Price Production Strategy; and Price Production Promotion Strategy.

This three-game microsimulation is extremely easy to set up and run, and is flexible enough to make it appropriate for many different levels of students, and many different levels of classroom technology availability. The microsimulation uses a Web-based platform, so that students can enter their decisions interactively in a computer classroom or using their own laptops or tablets (or even smart phones). Alternatively, instructors may ask for paper-and-pencil decisions from teams, and they may manually enter the team decisions into one centralized, professor-controlled computer.

To prepare for the first game in the microsimulation, students read a student manual and a short case (see Appendix 1) describing a business they “own” that makes care packages to send to students taking exams. Students are given information about fixed costs, variable costs per unit, current price, and a demand function for the product. The demand function is a formula explaining the relationship between a company’s choice of price for a given year of play, the average price that all competing companies are charging in that year of play (determined by inputs from all competing teams), and the resultant unit sales they will achieve. Built into the demand function is a brand loyalty factor stipulating that 30% of consumers will buy the same brand they bought the previous year and 70% will buy based on relative price. This short case presents an excellent opportunity for the professor to review the importance of cost information and how that information relates to pricing and profits, the role of price in building sales and market share, issues surrounding brand loyalty, and how competitive and demand situations might vary by industry.

After reading the case, and strategizing approaches, each student team is asked to make an initial pricing decision for the first “year” of the game. Often, it is helpful for the professor to point out that it can be critical to the team’s success to plan a strategy for the entire game, rather than just the first decision. Therefore, it is reasonable to allow 20 to 25 minutes for this first decision. After all teams have made their initial decision and these decisions have been input, the program generates feedback about the prices chosen by each team and each team’s resultant sales, market share, and profit. If an interactive version of the game is used, these results are displayed on all computer screens. If the professor has chosen the paper-and-pencil alternative, a results table can be projected or printed (see Appendix 2 for sample feedback). Students then review the feedback with their teammates, and, based on the results of the first year, strategize a price decision for the next year. After the first couple of decisions, play tends to move quickly, with decisions coming in almost immediately after feedback is provided. This first game in the microsimulation typically runs for nine decision years and requires 1 to 1 ½ hours of class time to play and discuss.

Depending on the course and classroom situation, the professor may then choose to have students play the second game, adding a production decision to the pricing decision. This second game in the microsimulation adds information about the costs of maintaining inventory, and requires student teams to decide how many care packages to produce each year, in addition to the price that they will charge. This new production consideration provides the professor with opportunities to discuss cost of inventory vs. opportunity cost of a lost sale, stockouts, and the importance of coordination between marketing and production within an organization.

The third game in the microsimulation allows the professor to add a promotion budget decision to the pricing and production decisions. This leads to classroom discussions about the role of promotional efforts and their effects on the bottom line, on sales, on pricing decisions, and on long-term market share. For low levels of advertising, sales are doubled, with sales increasing significantly as advertising spend increases.

In addition to its ability to run using desktop computers in a wired classroom, on individual laptops or tablets in a wireless environment, or on a central, professor-controlled computer, the microsimulation can also be administered in an asynchronous distance learning environment with students submitting decisions on their individual devices from any location.

Whichever format is chosen, instructor setup for the games is extremely easy. The professor inputs three choices to the software: (1) which decisions students will be asked to make (just price, price and production levels, or price, production level, and promotion spend), (2) the number of teams that will be playing, and (3) how many decision years will be played (this depends largely on how much class time will be available – each game is designed to be played in a single 1 to 1 ½ hour class session and a software-generated default number of years is suggested to meet this time frame). The professor hits “Begin Play” and students can then enter their decisions. Since sales and profit are, in part, dependent on each team’s position relative to other teams, with average price each period being a key component of the demand formula, each game is somewhat different from those that have been played in previous classes or semesters.

Using Pricing Microsimulations in the Marketing Curriculum

Each of the three games in this microsimulation can be used singly or together in sequence. As explained, the first game involves only a pricing decision, the second game adds a production decision, and the third game adds a promotion decision. Separate written cases and Excel decision sheets are provided for each game, and related homework assignments are also provided as optional supplemental material. A users’ manual is sold through the bookstore directly to students. Each manual has the printed cases for each game and the access code that allows students to access the Excel sheets, the homework assignments (if selected by the instructor), and the game programs for entering decisions and viewing results. Each game is designed to be run independently in a single class session of approximately 1 ½ hours. However, the program allows significant flexibility and all three parts could be run together back-to-back in a three-hour class session, or single games could be extended to cut across two shorter class sessions (or any other variation preferred by a professor).

The authors have successfully used variations of this microsimulation in a freshman Introduction to Business course (using each of the three games in three consecutive class sessions), an undergraduate Principles of Marketing course (using just the first and third games in two consecutive class sessions to teach pricing strategy), an MBA Marketing Concepts course (one class session devoted to playing just the third game with all three variables), and an Executive MBA online marketing module (all three variables used as an online game with asynchronous decisions). The microsimulation has also been used in liberal arts undergraduate programs to successfully teach students about leadership and decision making.

The first game, with just the pricing decisions, can be used to supplement the pricing chapter of a basic marketing course or an introduction to business course, or it could be used as a foundation for introducing pricing concepts in a more advanced course on pricing, or a microeconomics course. The second game, with the added production decision, could be played by itself in one class session of an operations management course or a graduate marketing course, or could be played after the first game in an introduction to business or basic marketing course. The third game, with the added promotion decision, can be used as the final game in the three-game sequence of this microsimulation, implemented in a series of classes for an undergraduate course, or it could be played by itself in one session of a graduate level marketing class.

Outcomes

Teams that are well-prepared and that have projected long-term sales and profits based on different competitive scenarios and strategies typically do very well in the games. Teams that are focused only on short term profits do not fare as well. In general, all student teams are extremely engaged in the decision-making, and, by the end of the microsimulation, understand what they did right or wrong as well as why the winning team won the game. This is a very important learning outcome of microsimulations that is not always achieved in the semester-long, complex simulations that are currently popular in marketing education. For example, in the initial part of the game, where only price is decided, two major factors regarding pricing strategy are involved. One of these is the importance of the price being charged for a product in comparison to the price being charged by competitors. Another is the importance of having a leadership position in market share and building a customer franchise.

Whereas in reality the relationship of sales to price is often quite complicated, the simple relationship used in this microsimulation is sufficient to make the point that one must often be sensitive to the prices being charged by competitors. In addition to sales being a function of the price chosen by a team and its competitors, sales are also dependent upon sales achieved in past years. This means that a price charged in any year has at least some effect on sales in all subsequent years. Hence, as students strategize for their initial decision in the first game of this microsimulation, it becomes obvious to most participants that a basic choice lies between: (1) charging low prices and getting low profits (or losses) initially but with a sales base for future use, and (2) charging high prices and earning high profits but losing future sales. It has been the experience of these authors that this hands-on encounter

with the concepts of market penetration and market skimming is very illuminating for students, and not soon forgotten.

In the second game of the microsimulation when production decisions are added, students learn the importance of accurate sales forecasts, as well as the devastating consequences of both under- and over-estimating future sales. In addition, pricing strategies learned in the first game can be practiced and reinforced (if using the games in sequence).

In the third game of the microsimulation, students learn the value of a well-spent marketing budget, with increased promotional spend dramatically increasing sales and market share. This game also reinforces the production lessons, since it is especially critical to forecast sales well and make enough product to guarantee availability when spending large sums on advertising.

In all three games, students are highly engaged in the play and sufficiently motivated to “win” that they put forth great effort to make sense of the marketplace dynamics that they are experiencing. In the authors’ experiences, this provides a multitude of “teachable moments”. Students who have experienced this microsimulation self-report high levels of content mastery and retention of the lessons learned. In addition, students report very high satisfaction with, and enthusiasm for, the microsimulation (see Appendix 3 for sample evaluations). Perhaps most importantly, students have a great time while they are learning. And, in addition to having fun and learning about pricing, students are also learning about decision making, leadership, negotiation, and teamwork, while at the same time building community with classmates.

It has also been the authors’ experience that, when the lessons learned from the microsimulations are assessed through traditional means such as examinations, the vast majority of students who have experienced this microsimulation demonstrate an understanding of the material covered. As noted earlier, a number of authors have beseeched educators to eschew large-scale, semester-long simulations and consider smaller, limited-purpose microsimulations which allow students to focus on a specific problem with clear, challenging and measured goals (Burns and Sherrell, 1982; Lengnick-Hall and Sanders, 1997; Frazer, 1985; Teach and Murff, 2008;). The technology tool described in this paper is an excellent example of the many pedagogical benefits of microsimulations.

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Appendices

APPENDIX 1 PRICING STRATEGY*

SETTING

Care Packages for Examination Rituals, Inc. (known as CAPER) is one of several companies selling packages that are designed to bring students some solace and sustenance during exam weeks. The packages are made up ahead of time and all sales are made from supplies on hand.

CAPER has been charging \$20 for each package and has been selling 3000 packages each year. Analysis of costs shows that CAPER has \$20,000 in fixed cost each year and a variable cost of \$8 per package. From these figures, we can calculate the profits for CAPER when they charge \$20 and sell 3000 packages.

The calculations are:

$$\begin{aligned} \text{Income} &= \text{Price} \times \text{Sales} \\ &= \$60,000 \end{aligned}$$

$$\text{Income} = 20 \times 3000 =$$

$$\begin{aligned} \text{Product Cost} &= \text{Fixed Cost} + (\text{Variable Cost} \times \text{Sales}) \\ &= \$44,000 \end{aligned}$$

$$\text{Cost} = 20,000 + (8 \times 3000) =$$

$$\begin{aligned} \text{Profit} &= \text{Income} - \text{Product Cost} \\ &= \$16,000 \end{aligned}$$

$$\text{Profit} = 60,000 - 44,000 =$$

CAPER has recently been faced with some competition on campus by companies preparing very similar packages. The company recently conducted a research study of their operations to determine the effect of price on the potential sales of CARE packages. The study showed that potential sales are affected both by the price charged relative to the average price charged by all companies, and by the sales that the company had in the previous year. As long as the price is not changed by more than 50% of the previous year's price, then 30% of the previous year's customers will want to buy again (brand loyalty). The other 70% will buy if the price is right. Sales from this 70% of customers have been found to be determined by the formula: $40,000 \times (\text{Average Price of all Firms} \div \text{Firm's Price}^2)$. Thus, the potential sales for each firm in a year will be:

$$\text{Potential Sales} = (.3 \times \text{Previous Year Sales}) + (40,000 \times (\text{Average Price} \div \text{Firm's Price}^2))$$

THE GAME

Play of the game will last for nine years (unless otherwise specified by the instructor), with the winner being the firm with the highest cumulative profit at the end of the game. For the first year, each firm will be assumed to have had a price of \$20 and sales of 3000 packages the previous year. Price changes of more than 50% will not be permitted in any year (so the first year price must be between \$10 and \$30).

Each year, each firm will submit a price decision. After each year, each firm will be informed of the price, sales, profits and cumulative profits of all firms. In each year, a firm's sales will be determined by the sales formula outlined above. To submit an initial decision, each team needs to log on to the game, enter team #, and then enter a price decision. Each year, the team will then enter a new price decision on the same computer.

**Note: Sample calculations are also given to students in the actual case distributed, as well as an Excel worksheet for doing calculations and making decisions while playing the game. This is the first case, written for the first game of the microsimulation, and is the simplest of the three games. The other games include sections on production and promotion.*

APPENDIX 2

SAMPLE FEEDBACK

Pricing Strategy*

Team	Price	Sales	Profit	Cumulative Profit
1	18	2810	8100	16640
2	12	5987	3948	5140
3	18	2810	8100	16640
4	17	3118	8062	15881
5	16	3485	7880	14864
6	14	4470	6820	11606

*Sample feedback given to students for a six team game of Pricing Strategy after the second year of play.

Price Production Promotion Strategy**

Team	Price	Production	Promotion	Inventory	Sales	Profit	Cumulative Profit
1	18.00	3000	2000	148	2998	7388	15344
2	12.00	6000	4000	0	6000	0	-7000
3	18.00	6000	8000	2385	3615	-1390	-1390
4	17.00	3000	15000	0	5364	13267	10548
5	16.00	8000	30000	56	8321	16344	19820
6	14.00	6000	8000	67	5976	7588	11158

**Sample feedback given to students for a six team game of Price Production Promotion after the second year of play.

APPENDIX 3

EVALUATION OF THE GAMES*

Statements about use of simulations in class	Percent who agree or disagree
The games were helpful in learning business concepts	100% agreed
Learned more by using business simulations than would have in regular lecture class on the same topic	100% agreed
Would have preferred more lecture/Power Point	100% disagreed
Changing teams was a good way to get to know classmates	95% agreed
Prefer playing short games in class instead of a semester long simulation	94% agreed
Sample Quotes from Students	
“I think playing the simulations is great and it is something every business class should do because it is a fun way to learn concepts and to get to know your peers.”	
“The games are a great way to have fun while learning”	
“The simulations are both entertaining and educational”	
“These games are great because they provide hands-on learning”	
“The simulations are very worthwhile and a lot of fun”	
“The business games are a great way to get students involved – it is easy to participate”	
“My favorite part of the course was the pricing simulations”	

*Statistics are from a freshman introduction to business class. Quotes are from that class as well as principles of marketing and upper level marketing courses.