

# Case Study: Marketing Peanut Butter in Accounting...Are you nuts?

By: Bunney Schmidt, Steve Teeter and Heather Baker\*

## Abstract

This paper presents a computer simulation used in an accounting education course that adds value to the course that would otherwise not be present. There are several outcomes that the simulation successfully meets to enrich the learning experience. The paper supports the argument that computer simulations are a critical component of successful teaching and benefit the users. The use of this simulation helps create a bridge between the classroom and the business world that is invaluable.

## Introduction

The use of simulations in the classroom can be a very valuable part of the educational experience. As stated by John F. Lobuts (1999), the role plays and simulations are but a disposition to the love affair, passion, commitment, and ideals that the authors call education, with simulations as a benchmark to the process. Some material necessitates the use of a unique approach to help the learner grasp the concept. Classroom simulations are a critical component of the learning process and should be incorporated whenever appropriate. Some concepts would not be successfully taught if education simulations were not used.

To gain knowledge of accounting information systems, and to utilize accounting information in making business decisions, students at our college participate in a business venture titled, Marketing Peanut Butter: A Computer Simulation that brings their education to life. This upper division course teaches financial, managerial, and cost accounting to students made up primarily of computer science and technology management majors. The simulation is intended to maximize the limited classroom time so that students leave with a hands-on understanding of accounting as opposed to just theory and memorization. Dietz (1992) refers to the computer simulation as an extremely powerful analytical tool. There are many objectives that need to be attained in accounting and are because of the use of this simulation.

At our college, many teachers love to teach and will do whatever it takes to drive the message home. It is not enough for students to memorize; they need to learn to think critically. The in-class simulation helps them do that. Many colleges will ask themselves, "Who are the stakeholders we are trying

to satisfy?" Most often, the answer is, "The employer who will hire the student in the future." Too many classes send students out in the real world unprepared and experienced to deal with real issues. If the employer is truly the most important stakeholder, we should prepare our students to meet the needs of these employers? Computer simulations not only strive to meet the needs of those employers, but help the student learn problem-solving skills that they can use in their personal lives. In addition, Robinson (2000) points out that "simulations offer a welcome respite from the everyday drill of lecture and testing." This is an additional benefit to the classroom experience.

In this simulation, students plan and carry out strategies using many of the same tools used by their counterparts in the business world: They research markets, plan and develop new products, alter product quality through research and development expenditures, price products competitively, distribute products through marketing channels into geographic territories, and promote them using advertising and sales promotion. The students also perform financial accounting functions by interpreting past information and managerial accounting functions by planning for the future.

So, are we nuts? The students say, "No way!"

The objective of the simulation is twofold:

1. Apply accounting and management principles in a competitive environment.
2. Attempt to produce a high quality product, and accumulate higher profit.

## History/Procedures

The students compete in this simulation during ten weeks of the semester. Two classes are divided into eight teams per class. A day class and a night class compete against each other so a total of 16 teams compete each semester. The team that finishes with the highest total profit at the end of the run is the benefactor of some extra credit points, a perk that adds to the competitive spirit. Upon the completion of the project, the students have the opportunity to complete a self-evaluation, not only scoring their participation, but also the participation of their

teammates. This helps form group cohesiveness from the beginning.

Each team is given a manual that provides a guide on decision-making, the business environment, marketing strategies, and marketing management. Teams receive information about the product choices, possible locations, costs of productions and promotion options. The teams also examine a management report that represents the previous quarter. **All teams are given the same beginning information.** A budget is included in this report that must cover all anticipated costs. Students are assigned into teams randomly with the explanation that they will have no idea who they are working with in the "real world." They are instructed to pick a company name and a peanut butter brand name. Some students use their full creative capacity even when it comes to just choosing a name and it becomes very interesting when they are shared among the class. Some company names are "Gimme an A Inc.," "The Other Nuts" and "Scoopy". Other outside accounting classes vote on the "best name" and the winning team gains a small advantage with market share. The teams put a spreadsheet together for "what-if" analysis in budget planning, and after that, "anything goes."

The teams meet, review all of the information and work together to make decisions on pricing, costs, and other business strategies. A decision form and a proposed profit plan is submitted to the instructor by each team each week. This decision form includes the territories where teams want to market, the sales price, amount to spend on sales promotion and advertising, amount to spend on research and development, and any market research reports that they would like to order. When the students return to the following session, they receive computer generated results from their decisions in the form of an updated management report. This report shows the total revenue earned, cost of goods sold, operating expenses and net earnings by territory. The simulation takes all teams decisions into consideration simultaneously, so the teams learn the process of competitors' choices and how competitors' choices or their own might affect others at the same time. It also magnifies the unknown element in business planning. Lederman (1999) states that computer technology, along with other technology enhancements, affords students an efficient means through which higher level thinking skills can be enhanced. This becomes evident in the process.

Each week this process continues with the teams making new decisions, adjusting expectations,

bench marking competitors, and hoping that the reports come back with a higher profit. All results are cumulative, so some teams can find themselves with profits of hundreds of thousands of dollars or losses of equal amounts. When the simulation is complete, the students are asked to evaluate the project in nine different areas. Table 1 shows the mean results for their evaluation which includes a 1 to 5 rating with the following breakdown: 1-strongly disagree, 2-disagree, 3-neutral, 4-agree, 5-strongly agree.

### Results

The following results were taken in the Fall Semester 2002 and are the combined average of the one day and one evening class. The results were compiled from surveys taken from approximately 60 students. The students were asked if they felt that the outcome was achieved.

| Outcome Number | Description                            | Mean Score |
|----------------|--|------------|
| 1              | Group Collaboration                    | 4.33       |
| 2              | Management Decision Making/Consensus   | 3.70       |
| 3              | Coping in a Competitive Environment    | 4.20       |
| 4              | Application of Accounting Concepts     | 3.73       |
| 5              | Quarterly Evaluation                   | 3.90       |
| 6              | Financial vs. Managerial Accounting    | 3.17       |
| 7              | Competitive Benchmarking               | 3.73       |
| 8              | Importance of Forecasting and Planning | 4.50       |
| 9              | Consequences of Risk Taking            | 3.90       |

Table 1. Results of Student Evaluations in Nine Areas

As you can see from the mean values, the students agree that the outcomes are achieved. When asked whether they had a better understanding of accounting in the "real world" through the use of this simulation, the mean response score was 3.9 which shows us that this is a helpful process. The outcomes, with some key observations, are covered in the remainder of this paper.

### OUTCOME #1--GROUP COLLABORATION

Working in a group is an essential part of this simulation. Many students feel the initial desire to work alone, but when they begin to work together, they quickly find the value of group decisions which is shared risk-taking and greater range of ideas. Working and making decisions as a group is evident in many aspects of the business world and this

synergy can produce many valuable elements for the business. Friendships are formed and enrich the learning environment even more. Some students mentioned that they were "humbled" when they compromised on decisions to the majority of the group only to find out that the group did in fact know what was best. The verbal element of talking it out and trying to help one another understand the data is also of value in this experiment. A student mentioned in her final report that "when someone came up with an idea, they had a tendency to feel very strongly about it but after hearing others opinions would often agree on a less drastic solution." This kind of result helps the students to see the group value of compromise.

#### **OUTCOME #2--MANAGEMENT DECISION-MAKING AND CONSENSUS ON DECISIONS**

As conflict emerges, it forces the students to review alternatives presented and to choose the most beneficial path. Compromises are made and the learning process is enriched. In almost all instances, a natural leader emerges and facilitates the team in making these decisions in a calm respectful manner. Leaders possess many traits that top executives have in the business world such as the ability to guide others through decision-making alternatives and inspiring participation from each member. In the "real world," compromises are made daily and are a critical part of a productive successful company.

#### **OUTCOME #3--LEARNING TO COPE IN A COMPETITIVE ENVIRONMENT**

Competition can be a healthy element in classroom learning and seems to drive students to perform at their best. The students are rewarded for being the best in their class by receiving extra points. The composition of students between the day and night classes is very different, and these differences drive the competitive spirit between classes as well. The day classes are primarily made up of younger students who have had little experience in the job market. Many of these students have only been out of high school for a short time. The night classes have many students who often have extensive job experience and are going back to school in pursuit of a degree. Competition is a very real part of the business world and a company must learn how to cope and thrive in order to attain success.

#### **OUTCOME #4--APPLICATION OF ACCOUNTING CONCEPTS AND PRINCIPLES LEARNED FROM THE COURSE**

The students appreciate the opportunity to take the concepts learned in a simulation in the

classroom and apply them to assimilation. Most non-accounting majors are overwhelmed when it comes to the most basic concepts of debits and credits and welcome the event that takes them out of their textbook and into real world application. Several of these students feel that they just "don't get it" until this simulation comes along. Their desire to perform successfully forces them to reach into the knowledge that has been presented to them to this point and find new ways to gain an advantage. Reading the financial statements helps them understand how this data influences future decisions. Students internalize what each individual element represents and see the real consequences that are the result of their choices.

#### **OUTCOME #5--QUARTERLY EVALUATION OF RESULTS OVER 10 WEEKS DURING THE SEMESTER**

The students have an opportunity to spend money on research. As they choose this expenditure, they discover the value of decisions is only as good as the information that they receive to make them. They take this information into consideration when preparing their future decision reports. The management report gives them the results of their past performance and allows the team to study previous decisions and plan ahead for market changes and conditions. Students interpret financial results with these reports. For example, if their revenue is low because of unit sales, they may consider lowering the price to increase demand. Teams may also add or discontinue a product line that is not performing positively. Different alternative decisions can be made on a weekly basis and these evaluations are an important part of learning.

#### **OUTCOME #6--DIFFERENTIATION BETWEEN FINANCIAL AND MANAGERIAL ACCOUNTING USING THE SIMULATION**

Financial accounting is based on information from the past, and managerial accounting is based on current or future information. The simulation shows students all the unknown variables that a manager must use to help make wise decisions. For instance, while few "unknowns" exist in financial accounting, (to the extent of estimates), there are many unknowns in managerial accounting--including budgeting, competitors' decisions and market conditions. A student referred to managerial accounting as the "profession that knows more than financial accounting." A manager is aware of all planning being put into place so a current loss may not mean a loss for the future. The project helps the student understand the risks of making bad decisions and

teaches them methods to lower those risks in the future.

#### **OUTCOME #7--COMPETITIVE BENCH-MARKING**

The teams try to determine what the competition might be doing more successfully. Teams use information about what other teams are doing when making decisions, and try to beat opponents in market share through manipulation of their pricing strategy. Some purchase research that will help them to meet their expectations. The results of both day and night classes are given to both classes so they can perform competitive bench marking. A student noted that "sometimes we didn't implement a teams decision because we could see that it did not work for some other team."

#### **OUTCOME #8--IMPORTANCE OF FORECASTING AND PLANNING USING A PROFIT PLAN**

As one student noted, "I have learned that it makes no sense to have a competitive price if you are not covering your costs." By forecasting, the teams are able to make sure that they are covering their costs and have a desired profit margin added in. Companies in the "real world" are in the business of making money so these profit projections become critical as planning tools. The creation of a budget can give the team a way to see how different decisions will affect their bottom line. As they incur more advertising, promotion, or research and development costs, they will need to have increased revenue to cover those costs. A flexible budget will give the team an opportunity to see the results of increased market share on their bottom line.

#### **OUTCOME #9--CONSEQUENCES OF RISK-TAKING**

Risk taking becomes a team decision. Teams are given their results weekly, and the reactions are very dramatic. Teams do not use real money since many students would be devastated when they read their results. Other students wish that they were using real money because of their huge profits. In either case, there is a direct relationship between the decisions made and the future profits that they experience, and they come to realize how careful they need to be when making financial decisions. One student mentioned that "it is a little easier to take risks in a game than it would be in the real world, but it definitely gave me a good idea of the stress that is there."

## **Conclusions**

Although the Peanut Butter Simulation has been around for many years, the program has shown an increasing value to our students recently as the importance of real world experience has become more apparent. Higher education has been experiencing many ongoing challenges and the old style textbook teaching is not enough anymore. We have seen the need to alter our methods by increasing the use of activities that will give the students the experience not just the knowledge of the subject matter. This simulation currently in use had become the stepping stone in the movement towards a higher quality education.

Students who participated in this simulation felt that more of these exercises would improve the overall learning process so that when they leave the classroom, and college, they are more prepared to work in their chosen profession. One student even declared that "this game kept me coming to class, wanting to participate and awaiting the outcome for the next period." Students say "it is a lot of fun," "even exciting," "educational," and "enjoyable." The simulation creates a bridge between college learning and the business world. The students appreciate the bridging of the gap as will their future employers. A simulation of this sort may sound a little "nutty" but based on the results; this project is an effective learning tool that students remember forever.

\*Lecturer Bunney L. Schmidt, MAcc, CMA, and CPA, and Professor Steve Teeter, MBA., teach in the Accounting Department at Utah Valley State College. Ms. Heather Baker, M.S., is a Provo High School Instructor.

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