
Sales Management Simulation: Bringing Reality to the Classroom

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This paper presents a Sales Management Simulation that was used in a class during Fall, 2003. The simulation is an online version that can easily be submitted by students and easily administered by faculty. As indicated by student responses to a survey, they found the simulation experience an excellent learning tool that helped them to understand sales force issues and made the course more interesting.

Introduction

There is increasing interest today in providing more opportunities for students to combine their learning of discipline-specific knowledge and approaches with analytical skills that will be of use to them in the workplace. One reason for this is that corporate recruiters are seeking business students who have “real world” skills in addition to just having a college degree (Scott and Frontczak 1996). A student graduating with a business degree today is expected to have experienced the complexities and uncertainties that come with decision-making in a business environment (Chapman and Sorge 1999). In fact, some employers believe educational institutions concentrate too much on theoretical issues and not enough on the practical application of skills and knowledge (O’Brien and Deans 1995).

According to researchers in the education field, students are responsible for building connections between the knowledge they acquire and the situation in which they are to apply this knowledge (Reeves 1997). However, some students haven’t applied much of the knowledge they have gained from their learning experiences to real world situations.

Group projects (case studies, term papers, simulations, presentations or classroom projects) give students direct experience with using teamwork to solve complex problems (Schoenecker, Martell and Michlitsch 1997). Along with learning about group processes, which is often a key goal of exercises, students can improve communication and leadership skills as well. However, it is often difficult to find learning activities in which students can experience the types of situations that require them to make strategic business decisions (Chapman and Sorge 1999). The problem of finding appropriate activities is particularly acute when looking for a learning activity in a course-specific context.

Business Simulations

One of these forms of group projects, business simulations, provides prompt, tangible and consistent response to the same decisions that are repeated over and over for specific periods of time (Keys and Wolfe, 1990). The analytical, problem solving and decision making requirements of these simulations are normally not available in cases and other types of exercises.

According to Keys and Wolfe (1990), business games started being used in the late 1950’s, primarily due to the developments in war games, operations research, and computer technology. Many corporations use business gaming in training their employees and have found them especially helpful in getting employees to better align their jobs with corporate business strategies (Solomon 2002; Chapman and Sorge, 1999).

A recent survey found that simulation games are growing in popularity, particularly in university courses at both the undergraduate and graduate levels (Parks and Lindstrom 1995). As the level of computer technology has become more mature, simulations have become more complex and widespread (Doyle and Brown 2000; Faria, 1998).

Simulation Benefits

Reviews of the business simulation literature present empirical support for use of business games and simulations as learning devices (Keys and Wolfe 1990; Hsu 1989). Recent findings include that complex games may teach more than simple games (Wolfe and Chanin 1993). The same authors concluded that conceptual knowledge is passed on to game participants and group play generates higher levels of learning than single member play.

One major advantage of business simulations is that they provide a fairly realistic model of the interdependence of the decisions made by managers in organizations (Thompson, Purdy and Fandt 1997). With simulations, students have an enhanced level of participation in decision-making and thus a higher degree of learning (Randel, Morris, Wetzel and Whitehill 1992). Simulations can help students begin to develop an understanding of business that includes clear insights into how functional elements within the corporation are coordinated (Keeffe, Dyson and Edwards 1993).

Business simulations provide a number of interconnected business situations in which students repetitively analyze the circumstances, establish their objectives, and plan coordinated activities that continue for several planning periods into the future (Wolfe 1997). The simulations offer a realistic representation of complex decision making and are helpful in studying cause and effect relationship (Keys and Wolfe 1990).

Business simulations have a high degree of association with many of the problems and situations that real-world business organizations face. However, it is done in a simple, experiential environment that provides enough reality to induce real world-like responses by those participating in the exercise. Students are presented with a series of situations that allow them to see the

links between decisions made in the corporation, thus teaching real world concepts (Wolfe and Luethge 2003).

Chapman and Sorge (1999) found that a business simulation made the course more interesting, helped students apply what they learned in class and overall was a useful learning tool. In fact, students said that it was the most useful pedagogical tool in the course. Additionally, in a five-year follow-up study Wolfe and Roberts (1986) found that an individual student's game performance was related to students' subsequent career mobility and career satisfaction.

Despite these glowing findings, there are also some problems that can be associated with simulations. In a review of 68 studies of simulations, Randel, Morris, Wetzel and Whitehall (1992) found that a majority of them (56%) showed no difference between simulations and traditional teaching methods, 32% showed that simulations led to better student performance, and only 5% favored traditional teaching methods.

Sales Management Simulations

There are a number of computerized business simulations that exist (Keys and Wolfe 1990; Wolfe 1997). While there is no specific empirical evidence available for the classroom use of a sales management simulation, it has probably not been used as much as general management simulations. In the past decade, there have been only three simulations widely available with a specific sales management emphasis, and two of them are no longer in print. There are also two new entrants targeted to sales management education. Those simulations no longer in print include Dickenson, John R. and Anthony J. Faria (1995) and Patton, W. E. III (1995), while the Dalrymple, Douglas J. and Harish Sujan (1995) is still being published. The two new entrants are Nentl, Nancy J. and Craig Miller (2003) and Cook, Robert W., James C. Cook, and Kathryn J. Cook (2003).

Faria and Dickenson (1994) believe that the greatest benefit of a simulation exercise is the experience derived from participation in the simulation. They suggest that to learn how to play golf, drive a car, or fly a plane, one must be actively engaged in that activity. Instruction alone is insufficient to gain a proficient skill level. Thus, in the Sales Management classroom, a simulation can provide experience in a safe environment for students to make decisions as sales managers. The MARS Sales Management Simulation is different from all of the other simulations that have been available for use in a sales force management context because it is Internet based rather than PC based. The authors present below a description of the MARS Sales Management Simulation and provide empirical evidence of its success in the Sales Management classroom.

The MARS Sales Management Simulation is unique in a number of different aspects. Historically, simulations were created on computer disks. For "competitive" simulations (the ones where the decisions of one team affect the results of others), professors were provided with a disk containing the simulation itself and the interface software. The simulation was then installed on the professor's computer, or on the school's network. Students used an instruction manual and had to submit their decisions to the professor (either by disk or hard copy on decision forms). The

professor would input the decisions of the students, run the simulation, and return the results.

The administrative process, required for every decision period, could be very time-consuming for the professor, particularly when student decisions were submitted on forms. The task of typing in student decisions for every team, double-checking the numbers, running the simulation, and printing out reports for every team could take as long as 45 minutes per team. Additionally, these simulations were often limited to 5 or 6 teams, thus requiring professors teaching large, or multiple, sections to run multiple concurrent simulations. As a result, this 45 minute administrative process was actually doubled or tripled for each decision period. For professors without student assistance, this became an administrative nightmare. In addition, PC-based simulations presented compatibility issues with both hardware and operating systems depending on the university's particular setup. These simulations tended to work well when first introduced, but over time they were not updated. Glitches began to creep in as university computing environments changed. There was often little that could be done to deal with the problems created.

The MARS Sales Management Simulation is Internet-based, so there are no equipment compatibility issues. Students directly input their decisions over the Internet, and receive their results in the same fashion. The professor only has to log on and click on the "run simulation" button, so the administration of the simulation to run each decision period takes only seconds. The MARS Sales Management Simulation is extremely professor and student friendly.

Because it is Internet based, the simulation can be accessed from any location with Internet access. Consequently, the professor can administer it from the office, home, or even when out of town. It is also just as easily used by students from a remote location. The professor can be at the main campus, and the participating students can be at remote sites around the state (or nation).

The MARS simulation is designed to accommodate from 2 to 16 teams. Assuming teams of 4 students each, it can accommodate class sizes from 8 to 64. With teams of size 5, the upper limit goes to 80 students, etc. Because of the simplicity of administration, the MARS simulation can easily be run in multiple concurrent simulations. Running multiple concurrent simulations results in fewer competing teams in each simulation, making it easier for student teams to conduct competitive analyses.

The MARS Sales Management Simulation is grounded in the Churchill Model of Salesperson Performance (Churchill, et. al. 2000): Role Perceptions, Aptitude, Skill Level, Motivation, and Personal, Organizational, and Environmental Variables. The MARS Sales Management Simulation incorporates many aspects of this model. In the simulation sales is a function of base compensation, quota, bonus, contest, recognition, supervision, training, account management, and salesperson satisfaction with rewards.

The MARS simulation does not purport to contain every conceivable aspect of each factor influencing salesperson performance. As with all models, it is a simplification of reality. But it is sufficiently complex and inclusive to prevent students from "gaming" a solution, and to illustrate the main drivers of

salesperson performance. Furthermore, because it is competitive, every use of the simulation results in different outcomes.

The Simulation Environment

Students take on the role of a newly promoted, first-line, district sales manager. Each team has the responsibility for directing and motivating 5 salespeople in their district. Each of the 5 salespeople in the district has a unique set of preferences, and experience levels and responds differently to the various decision input variables available to students. Each sales person is assigned to a unique, geographic territory. Since student teams cannot hire or fire their salespeople, they are forced to concentrate on the determinants of salesperson performance. Their job is to maximize that performance, measured by a variety of factors.

Participants in the MARS Sales Management Simulation make a total of 53 decision inputs for their district. There are 10 decisions that are made for each of their 5 salespeople (50 total decisions), and 3 contest-related decisions that are made for their district as a whole. In addition, students have the opportunity to purchase 7 research reports reflecting the outcomes of the previous decision period. They can also purchase benchmarking reports representing the input decisions for any other team in the simulation. In total, students are required to make sixty decisions each period. They must also decide whether or not to purchase a benchmark for each of the other teams in the simulation.

The MARS Classroom Experience

The MARS Sales Management Simulation was used in a Sales Force Management class, fall semester 2003 in a class of 22 students. The class was divided into 5 teams, and one independent study student was added as team 6. The independent study student was off-campus for the semester and participated from a location several hundred miles away. Therefore, Team 6 was at a competitive disadvantage in the sense that it was made up of a single student whereas the other teams were composed of 4 to 5 students. Each team made 12 simulation decisions over a 12-week period. This represented a simulated 3 years, since each decision represents a simulated business quarter.

One of the primary concerns in using a simulation is that it does not contain variables that can make or break a team with lasting effects. For example, in another salesforce management simulation one of the decision variables is a production request. If students make a mistake, and order a year's supply instead of a quarter's supply, they are stuck with very heavy inventory carrying costs and no means of disposal other than sales over an extended period of simulation decisions. They are essentially doomed by that one mistake to a last place finish. The MARS Sales Management Simulation does not present such problems. Other than Team 6 (the independent study student), teams moved upward or downward as the simulation progressed. For example, the team that started in first place (Team 3), successively dropped each period to fifth place; rebounded over time back to first place; and then finally back to fifth place. This was a positive result from two perspectives. First, the upward and downward mobility of the teams over time kept the excitement of the game going. Teams did not get discouraged, nor did they give up. Each team, except for Team 6, spent one or more periods in first place.

Second, where it was appropriate, textbook material was related to the simulation during classroom lecture/discussion periods. This took place during most lecture/discussion class periods. For example, the topic of forecasting was covered in class. The MARS Sales Management Simulation was used as the working example. It illustrated the usefulness of a time-series forecast, adjusted for seasonality. Students learned that they could forecast simulation demand (instead of purchasing the forecast at a cost of \$5,000), and use that to aid in setting their salesperson quotas. It gave them a basis for understanding the application of textbook concepts, and made them more receptive to the material.

Student Reaction

A questionnaire modeled after the Chapman and Sorge (1999) study was administered to 22 students who took part in the MARS SMS exercise as part of their Sales Force Management class. The results of the student evaluation of the MARS Sales Management Simulation were remarkably similar to results obtained in the Chapman and Sorge (1999) study. In both cases, students rated the use of the simulation significantly higher than use of the textbook from an educational standpoint. As with the Chapman and Sorge (1999) study, MARS Sales Management Simulation students felt strongly that the simulation made the course more interesting, helped them apply what they were learning in class, and overall was a useful learning tool. Their level of personal involvement was very high, and they confirmed the continued use of the simulation at a significantly higher level than they recommended continued use of the text.

Conclusion

The results of the present study confirm the results obtained in the study by Chapman and Sorge (1999). The use of a Sales Management Simulation can significantly enhance the perceived value of instructional materials in a sales management class. The simulation provided students with three computer-generated years of sales management decision-making experience. While the decisions were a simplification of reality to make them manageable in a course context, they were sufficiently complex to give the students an idea of what a career in sales management would entail. Simulation participants experienced a realistic view of basic sales management processes, thus enhancing the participants' business process perception.

The simulation allowed students to learn-by-doing. Their interaction with the simulation, coupled with immediate feedback, provided them with a very valuable educational experience. For students, classroom-obtained knowledge becomes a reality. In addition to basic sales management experiences, students learn about small group cooperation, leadership, and decision-making.

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