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FLOWERS FOR THE WORLD: DEVELOPING A BUSINESS GAME TO SUPPORT THE TEACHING OF IS CONCEPTS

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Abstract

One of the key problems in teaching fundamental concepts in information systems is how to ground the theory in experiences that the students can relate to. To overcome this problem, a business game called Flowers For The World has been developed and used across a wide variety of IS courses. This paper will describe the game and the result of using it for a 300-level course in analysis and design. The possibility exists that the game could be developed to provide a common business foundation across all business school curricula.

Keywords: Pedagogy, business games, IS concepts

Introduction

One of the key problems in teaching fundamental concepts in information systems is how to ground the theory in experiences that the students can relate to. In other words, it is often difficult to demonstrate to a student the value of, say, a transaction processing system, unless the student has experienced some of the problems managers face in gathering data on basic business activities. To overcome this problem, a business game called Flowers For The World (or FFTW, for short) has been developed and used across a wide variety of IS courses. The game is based on the idea of a company buying flowers at an auction and then fulfilling specific orders from customers on a week-by-week basis.

This paper will describe the game and then provide an example of how FFTW was used in a 300-level analysis and design course to provide a richer experience of business problems upon which further analysis (and design) could be based. It is intended that this game will be further refined, with a set of tools developed that will support the playing the game and, ultimately, to allow the game to be used as a foundation for all courses across a School of Business. The idea here is that after playing the game elements of the game can be used as examples for all the courses taken by the student in the School of Business. The game allows sufficient variations to allow each playing of the game to be a unique experience.

How to Play the FFTW Business Game

The game is typically played over a period of two weeks for a 3-credit course. The students are divided into groups of at least four, but no more than six. Each group is one instance of FFTW and are not in direct competition for flowers at auction or customer orders. The company has a traditional/hierarchical structure, with a Managing Director overseeing the company, and a Purchasing, Sales and Financial Manager playing their respective roles. Students assume one of the available roles. The instructor plays the role of a Referee, presenting the auction and customer order details at the appropriate time, and accepting or rejecting team bids or quotations.

The game progresses in a series of weeks (week 1, week 2, etc.) of between 10 and 20 minutes duration. Two practice weeks of 20 minutes duration are played at the beginning to allow the students to work out how to play the game and organize their information flow between managers. The week duration is then reduced to 15 (and then 10) minutes to apply further pressure on the students and as a test of how well they have organized themselves and determined their information needs. The rate at which the time duration is reduced depends on how well the groups are playing the game. Each week has the same cycle of activities.

First, there is a flower auction of approximately 5 minutes. For simplicity, there are only three types of flowers, namely, Roses, Irises, and Daffodils. An auction would have, say, 5 lots of Roses, 4 lots of Irises and 3 lots of Daffodils available. The Purchasing Managers must present a written bid for the flowers they wish to buy. For every auction the Referee has a secret minimum price for the lots. If the bid presented meets or exceeds that minimum bid, the Purchasing Manager is told they are successful. The Purchasing Manager is given three chances to secure the bid. There is a weekly storage fee of $25 per 100 flowers (or part thereof), and any flowers more than 4 weeks old cannot be sold and must be scrapped from inventory.

After the auction the game progresses to the customer order stage that lasts for the reminder of the week. Again for simplicity, there are only two customers called Customer 1 and Customer 2. Customer orders are typically for odd numbers of flowers, say, 33 Roses, 175 Irises, etc., so as to impact on storage calculations. For each customer order the Referee has a secret maximum price per flower and delivery time. The price per flower is set so as to guarantee a healthy profit. The Sales Manager must present a customer quotation showing both price per flower, and the delivery time. If the quotation is equal to or less than the maximum price per flower and delivery time then the Sales Manager is told they are successful, otherwise, they have two more chances to get the price or delivery time correct.

When the week ends the Financial Manager must produce a Financial Statement for the previous week. The Financial Statement must show their opening balance, total income, total expenditure, closing balance, and profit/loss for the week. Failure to submit a Financial Statement in time results in a $500 fine. Having completed all these tasks, the next week begins. A minimum of 10-12 weeks is recommended in order for the groups to really get to grips with the game.

What Happened in the Analysis and Design Course?

Analysis and design is one of the most difficult courses to teach, specifically because good examples to illustrate the concepts are few and far between. The FFTW game was introduced to provide a basis upon to which to apply the techniques. The game was played with two sections of students taking a 300-level analysis and design undergraduate course. There were eight groups in Section 1 and seven in Section 2. Groups began with an opening balance of $1000 and given some marketing information that provided a basis for their subsequent auction bids and customer quotes. None of the groups played the game particularly well. After playing more than 10 weeks, three of the 15 groups posted a loss in their final closing balance, with the greatest loss posted at $4803. The highest closing balance was $983.70. After the game was concluded, each group presented what they learned from the game.

Most groups realized the importance of proper record keeping, with many developing standardized forms to aid in communications as well as record keeping. In general, it took about 3 to 4 weeks for groups to become familiarized with the rules of the game, with most groups beginning to think strategically after 5 to 6 weeks of play. All groups agreed that excess inventory was the main issue that prevented them from making a profit during the game. A few groups decided near the end of the game to sell off their inventory cheaply to avoid storage costs. Another strategy used by many groups was to focus on the most profitable flower, Roses. As the final financial statements showed, however, these strategies did not prove entirely successful.

The post-game presentations clearly showed that most students had developed a good understanding of the information problems inherent in being a manager in the game, which was exactly the result the game was intended to provide. The course is due to continue for the rest of the semester with functional groups (Purchasing, Sales, Financial, etc.) analyzing their respective information flows and designing a system to support their functional area. The game, however, will allow each student to analyze and design with a clear understanding of the underlying business processes and how they relate to other areas of the business.

Further Development of the Game

The game has now been used at three Universities around the world and for a wide range of IS courses. The results across all these courses tend to be same: The students approach the game with genuine enthusiasm, and develop a good appreciation of information problems in an organizational setting. Tweaking aspects of the game, such as the rate at which prices change, and having groups in direct competition with each other for auction lots and customer orders, allows each playing of the game to be a unique experience. The next step is to develop a set of materials to support the running of the game and to provide examples of game solutions to aid post-game discussions. The main problem for the instructor is to keep track of what each team is doing and to provide a genuine analysis of their performance, rather than rely on their self-reported financial status. This suggests the need for an automated system to run the game itself, storing the values for auction bids and customer orders, and allowing the instructor to keep track of how each group is playing.

There is also a need to test the merits of the game as a tool to provide a common foundation across the whole range of curricula within a School of Business. Given the Management, Marketing, Financial, and Accounting issues inherent in playing the game, the possibility exists that the game could be used as a foundation learning exercise that each discipline could then pick up on in their respective courses. There are numerous case studies papers in the literature to support analysis of the flower industry in terms strategy (e.g., Booker and Hoffman, 1995; HBR, 1995) and the use of technology (e.g., Gunnerod, 1991; Heezen and Baets, 1996). This would allow for a far richer learning experience than is currently possible in a School of Business curriculum.

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