

IMPACT OF STRATEGIC PLANNING ON COMPANY PERFORMANCE IN A STRATEGIC MANAGEMENT SIMULATION GAME ENVIRONMENT

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ABSTRACT

It is well accepted that strategic planning improves the probability of success for organizations. It was hypothesized that it would also be true in a simulation game environment where student teams compete in a simulated industry by making decisions for their companies. In BSG-Online®, a simulation game, student teams can be assigned a strategic planning exercise for their company after the third cycle of decisions. Analysis of performance of one hundred and thirty such companies shows a strong relationship between strategic planning and improved company performance.

INTRODUCTION

The relationship between strategic planning and firm performance has been of interest to researchers for a long time. One of the earliest such efforts to review existing research was by Armstrong (1982). Most recently, Miller and Cardinal (1994) conducted meta-analysis of almost two decades of field research on this relationship, and concluded that strategic planning does positively affect firm performance.

The lead author has used simulation game as a pedagogical tool in Strategic Management capstone courses for several years. One of the assignments for participating students has always been to engage in strategic planning for the company they managed. It is natural that students ask whether such strategic planning is really useful, because not every student may see direct benefit from such exercise. Students made it important to ask the research question whether strategic planning has any effect on company performance in a simulation game setting. This paper describes our research and findings.

RESEARCH SETTING

The specific game that provided impetus for this research is the Business Strategy Game Online (BSG-Online®) by Thompson, Stappenbeck and Reidenbach (2004 - 2007). This simulation is set in an athletic footwear industry. There can be up to 12 companies per industry. Students are divided into teams of three to four students. Each team is expected to strategically manage a footwear manufacturing company by making decisions for the coming yearly cycle. Each company has operations around the world. Decisions involve most aspects of a manufacturing company including forecasting, production, distribution, marketing, human resources, finance, etc.

On a preset schedule, the game program processes decisions from all companies together and computes performance of each company for that year. Company operations and performance reports, and other reports on the industry are available to the students for analysis almost immediately. Based on this information, student teams make decisions for the next year. Company performance is evaluated on multiple criteria against a set of Investor Expectations. The Investor Expectation (IE) score is a composite indicator on a scale of 100. Since a company gets points proportionate to the ratio of company achievement to numerical goal set for the companies by investors on that criterion, a company

can achieve a score above 100 if the company has surpassed numerical goals. For the purpose of this research, the IE score was used as an indicator of company performance in each year of the game.

The BSG-Online assumes that all companies in an industry have been in existence for 10 years, are equal in all respects at the beginning of the game, and that teams begin with decisions for Year 11. The game administrator may assign a Strategic Planning (SP) exercise where teams systematically go through their strategies and set goals in all areas of performance to create a 3-year strategic plan. This exercise can be assigned in Year 14 or later.

This game therefore provided an excellent setting to test the relationship between Strategic Planning (SP) as an independent variable and company performance as dependent variable measured by Investor Expectation (IE) score. The year of SP intervention could be adjusted between Year 14 and Year 15 to test if the relationship is affected by timing of intervention. The BSG-Online website maintains data on both these variables.

HYPOTHESIS

If we theorize that strategic planning has a positive impact on company performance in the simulation game environment, then the population mean of trend in IE scores AFTER the strategic planning exercise intervention should be higher than the population mean of trend in IE scores BEFORE the intervention. Therefore, the null hypothesis to be tested can be stated as follows.

Ho: The population mean of IE Trends AFTER the strategic planning exercise intervention is less than or equal to the population mean of IE Trends BEFORE the strategic planning exercise intervention.

If statistical analysis results in rejecting this hypothesis at a significant level, then it may be inferred that strategic planning played a part in changing company performance in the simulation game environment.

METHODOLOGY

The subjects were undergraduate, senior students in capstone Strategic Management classes from spring 2005 through Fall 2006. Four of these sections were conducted in a face-to-face setting, while the remaining sections were conducted online. There were a total of 19 sections or industries with eight to ten teams competing in each industry for a total of 164 companies. Two (2) of these companies were eliminated either at the beginning or half-way through the game, leaving 162 companies in the Total Set of companies. All sections were given five weeks to study the game, develop strategies, and one or two practice year runs to get them familiarized with the mechanics of decision input as well as to test the way the game responds to decisions. Game data for all companies was reset back to Year 10 after the practice runs, and the game ran through 8 cycles, i.e. from Year 11 through Year 18.

The Strategic Planning exercise was assigned to 12 of the industries in Year 14 to as the Y14 Set. The other 7 industries or Y15 Set, were assigned the exercise in Year 15 for control purposes. The IE scores of all these companies were recorded for the eight years of run (Year 11 – 18).

Two trends were computed for each company - the first trend of IE scores BEFORE the strategic planning intervention year, and the second trend IE scores AFTER the strategic planning intervention year. Accordingly, for the Y14 Set, slopes were designated as “IE_Trend_Years11-14” and

“IE_Trend_Years14-18”. Similarly, for the Y15 Set, trends were designated “IE_Trend_Years11-15” and “IE_Trend_Years15-18” variable.

STATISTICAL ANALYSIS

Table 1: Paired t-test for mean IE scores of Y14 Set industries before and after the intervention

Trend of IE for Years	Sample Size (Y14 Set)	Sample Mean	Sample Standard Deviation	Standard Error of Mean
IE_Trend_Years14-18	106	5.63	7.70	.75
IE_Trend_Years11-14	106	-6.75	9.25	.90
Difference	106	12.38	14.97	1.45
95% C.I. for the population mean of the difference between Years 14-18 and Years 11-14 = (9.97, infinity)				
Paired t-test of population mean difference ≤ 0 versus > 0 t-value = 8.52 p-value = .000				

Table 2: Paired t-test for mean IE scores of Y15 Set industries before and after the intervention.

Trend in IE for Years	Sample Size (Y15 Set)	Sample Mean	Sample Standard Deviation	Standard Error of Mean
IE_Trend_Years15-18	56	4.25	7.81	1.04
IE_Trend_Years11-15	56	-1.32	6.19	.83
Difference	56	5.57	12.23	1.63
95% C.I. for the population mean of the difference between Years 15-18 and Years 11-15 = (2.83, infinity)				
Paired t-test of population mean difference ≤ 0 versus > 0 t-value = 3.41 p-value = .001				

CONCLUSION

As may be seen from these two tables, the null hypothesis is soundly rejected for both Y14 Set and Y15 Set at a 0.001 level of significance. Therefore, this research shows strong support for the assertion that strategic planning plays a part in improving company performance in the simulation game setting of BSG-Online®.

Due to space limitations, please email authors for discussion of alternate explanations of results, further research directions and references. The authors gratefully acknowledge the role of reviewer comments in improving this paper and suggesting future research directions.