

# Developments in Business Simulation & Experiential Exercises, Volume 10, 1983

## THE WORKSHEET APPROACH FOR SIMULATION GAME STRATEGY ANALYSIS

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### ABSTRACT

An approach for student simulation analysis is presented to provide a stronger focus on analytical direction, performance criteria, and examination of thought processes. A worksheet system is used which gives a format which, when followed, results in a clear, well organized, evaluation and strategic plan.

### SIMULATIONS ANALYSIS

Business simulation games have become an important part of the academic stable of teaching tools. The ability of simulations to provide the experience of responding to the pressures of a dynamic environment is critical to assimilation and understanding of marketing strategy concepts. The scope of traditional pedagogical approaches such as readings, lectures, and cases in the teaching of strategy and planning is more limited, primarily due to the lack of feedback

[11]

Compared with cases, simulations have been found to provide higher measures of concept mastery, knowledge, skill, motivation, interest and overall learning [16, 19]. A greater effectiveness in creating awareness of the interrelationships of functions within a firm and in gaining insight into the planning process is an additional benefit [13].

Nevertheless, simulation gaming has been criticized for its lack of depth [15] and the lack of congruence between the structure of the game and the learning objectives set forth [4], a reflection, perhaps, on the instructor more than the simulation. Students have been allowed to engage in inconsistently applied techniques of analysis and ad hoc decision making processes. Problems are perceived but formal, rational, analytical procedures are not used enough [18].

Criticism seems to be focused on the lack of appropriate written assignments designed to provide analytical direction, performance criteria, and focus to student thought processes [6, 13, 15]. There is a need for subjecting simulation games to a similar level of written analysis as more traditional cases to enhance the integration problem [19]. There is a need for a structured, comprehensive, integrative model for the structural deficiency in the pedagogical application of simulation gaining classroom experiences. The purpose of this article is to offer a tool to facilitate improved written analysis of simulation games.

It is naturally important that the "remedy" match the appropriate learning objective(s). Learning objectives can be classified as knowledge comprehension, application analysis, synthesis, and evaluation, with appropriate techniques for derived objectives. Each of these pertain to different end results of the learning process. Simulation gaming as a teaching tool may be more appropriate in the

type of course that emphasizes a higher level of learning [5]. Analysis and application appear to be appropriate learning goals for the teaching of strategy formulation and execution. However, based on the previously mentioned structural inadequacies, the game alone would appear to be inadequate in terms of achieving these goals. The appropriate analytical tool interfaced with the game should aid in making these goals realistically obtainable. The structure of strategic approaches would also be an appropriate point to consider prior to the selection of an analytical tool.

Several reputable texts [2, 9, 8, 10] deal with a structural approach to strategy. This structure typically consists of a situation analysis (which includes background data, forecasts, strengths and weaknesses) an objectives section, and a strategy section pertaining to the fundamental logic by which business intends to achieve its objectives. Also included is the action program which describes specific tactics to be used and the control mechanisms used to gain feedback on performance.

### THE WORKSHEET APPROACH

Hughes [7, 8] developed an approach which lends itself very readily to simulation analysis. With this approach the general planning skills of analysis, synthesis, creation, and communication are applied through the use of a prescribed decision focusing process.

His approach uses a fixed outline worksheet for each stage of the analysis. The first is an environmental analysis worksheet which looks at where a firm is. Starting first with a look at organizational values, objectives and policies then organizational design and the situation which consists of generic demand, brand demand, competition, public policy, etc. For each area of concern a set of "critical questions" is developed encompassing the important relevant variables. Each critical question is addressed independently in three columns (Figure 1). Students are required to find and present the current facts regarding the issue in the first column. The instructor can quickly review the assignment for accuracy and relevancy. The second column addresses the assumptions made regarding the critical question and the additional information requirements they would seek. Assumptions can be critiqued as to how they relate to current facts. Perhaps more research would be needed as opposed to making an assumption without sufficient facts. If the students feel they need more research, the appropriateness of their suggestions can also be evaluated. Conclusions are then evaluated in column three on how the current facts and assumptions and research are interpreted and given meaning. Nonsequiturs can be easily identified. If the conclusions are properly formulated, they should synthesize logically into a statement of opportunities and problems.

This is then followed by a strategy worksheet which focuses on pertinent decision areas as they should conform with the statement of opportunities and prob-

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Figure 1

## Environmental Analysis T.V.C.C.

Environmental Elements	Current Facts	Assumptions or Research Needed	Conclusions
Organizational values objectives and policies	Personal values of management are not clear. Amount of control of key management personnel is not clear. Policies are lacking. Only one clear-cut objective appears to exist - that of expanding into related markets.	There is a need to examine personal values, policies and objectives in order to define conditions more precisely. Growth seems highly valued.	Success may be determined arbitrarily unless specific objectives are established.
Marketing Organizational Design	<p>Organizational Chart</p> <pre> graph TD     TVCC[TVCC Partners Daniels etc.] --- SW[Storm Windows Nelson]     TVCC --- Siding[Siding]     TVCC --- Q1[?]     SW --- P1[Production]     Siding --- Sales[Sales]     Siding --- P2[Production ?]     Siding --- Q2[?]             </pre> <p>Common multidivisional salesforce of 30 reps. Compensation is by straight commission. There is a high absence and attrition rate among the sales reps. Production people can earn commissions on sales.</p>	There is a need to look at lines of authority plus compensation in terms of the control of personnel such as sales reps and production people.	Possible lack of control of sales force exists.
		Compensation from siding division similar. Sale force goes with easiest sale.	Sales force will expend energies in easiest commission sales area. Storm windows may be harder to sell in summer so little effort would be made to sell them.

Figure 2

## Strategy Worksheet

Strategic Element	Current Strategy	Alternatives and Recommended Strategy	Estimated Effect
Demand Strategy Generic	TVCC is looking for expansion of their business into related markets. Expenditures could possibly contribute toward generic demand expansion.	If new viable markets are found then promote use of product for the immediate level of generic demand (per economic forecasts).	Expanded generic demand would be favorable. Forecasted demand will be subject to economic fluctuations.
Product	Storm window market seems defined as including all windows,	Recognize at least residential and commercial as distribution markets,	Will require development of distribution plans for two markets.
Brand	Positioning awareness is lacking in current strategy. Current strategy capitalizes on lack of competition in private homes. Bids for larger accounts have been ineffective.	Position competitively (if possible) in commercial accounts in terms of price and quality. Maintain current position on private homes,	Maintain level of market share in private homes. Penetration of larger accounts would smooth production (if counter-season), increase profits and market share in that segment.

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lems. The decision areas include demand strategy, strategic goals, product line strategies, research, and a profit plan. Three columns are also used in this worksheet. (Figure 2) The first column consists of current strategy. This focuses on the decision areas of the analysis. Students must describe the nature of the "given" simulation strategy, or lack thereof. In later stages this is an evaluation of past strategy success and failure. The second column presents the recommended strategies. Changes from prior periods are presented along with any alternative review deemed necessary, or contingency strategies for alternative future expectations. Changes in strategy can be readily evaluated by the comparison of the first two columns for congruence with the statement of opportunities and problems. The final column is for expected effect. The estimated effect of any change should logically follow. Special attention should be given in instruction to focus on specific statements rather than broad generalities such as, "improved sales." The financial impact of these proposed actions can then be summarized using a profit plan pro forma balance sheets and income statements. Both of these worksheet structures force the student to establish and expose their thought process.

### EXPERIENCE

The present authors used the Hughes worksheet approach along with the Compete simulation [3] in both upper division, undergraduate and graduate level marketing courses. Students were assigned an initial Environmental Analysis and Strategy worksheet prior to the beginning of the simulation game. This was done to further familiarize students with the game manual and provide practice with the analysis. This assignment was repeated at the end of each of two years of simulated competition.

This method appeared to force students to dig deeper into the available material about the games parameters, thereby minimizing wasted simulation time on ill conceived or fallacious input. The structure of worksheets did appear to force students to focus on the critical questions surrounding environmental elements and strategic decision areas. Strategic formulation had to be justified on analysis and subject to reevaluation in order to properly conform with worksheet structure. Concise format also has the advantage of reducing the volume of verbiage contained in many written assignments, thus allowing the instructor to evaluate the actual content of the report. If the flow of logic did not follow, this could be readily pointed out and graded accordingly.

It was observed that a degree of anxiety was initially present with this approach because this was different from the traditional lecture! term paper approach. It is believed that despite lecture time spent on analysis, some students didn't really understand the process until they attempted it.

### CONCLUSIONS

This type of approach applied to simulation gaming should aid in bringing about a "maturation" process between an introductory lecture based course and a live case based course. It is thought that taking a student to the live-case level with only one or two introductory courses may be somewhat overwhelming. [1] For example, an evaluation of cost/benefit criteria for students, faculty, clients and institutions for particular marketing research class projects [12] indicates that a key "cost" of this advanced class methodology is time. It is obvious that an overwhelmed student prematurely placed in this type of learning environment could be costly to all parties because of the wasted time involved. The appropriate type of analysis tool combined with a simulation game could, therefore, be the "bridge" needed between the lecture and live-case.

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