

Developments in Business Simulation & Experiential Exercises, Volume 8, 1981

EXTENDING THE SIMULATION PRODUCT LIFE CYCLE

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ABSTRACT

Every product, and the industry that grows to produce various brands of a product, proceeds through a series of sales phases called the "Product Life Cycle" (PLC). Simulation gaming, and the industry that supports it, is no exception to the life cycle concept. Most businesspeople and academics know about the "Product Life Cycle," but few understand the strategic benefits derived from "cycle analysis. The Simulation industry (more specifically each simulation author/publisher combination) might be able to improve sales significantly by following a few simple guidelines for product analysis.

INTRODUCTION

In this paper, the simulation entitled "COMPETE: A Dynamic Marketing Simulation" will be utilized as an example. COMPETE is a fully integrated, interactive marketing simulation. The COMPETE environment provides a decision-making laboratory for business students wherein price, salesforce, advertising, research and development, forecasting, and marketing research decisions are made on a recurring basis [3].

THE PRODUCT LIFE CYCLE

The PLC is commonly recognized as having four stages:

1. The Introductory Stage - Often called the development phase, wherein demand for the product needs to be proven, the product may not be technically proven in all respects, and sales are few and creep along slowly. This is when a new product comes to the market full of unknowns, uncertainty, and a great deal of risk. Demand for the product must be cultivated.
2. The Growth Stage - The normal characteristic of a "successful" new product is a gradual rise in its sales curve. At some point in this gradual rise, a marked increase in demand takes place. This has been characterized as the "take-off" point and signals the real beginning of the Growth Stage. During the Growth Stage, many competitors join the success parade, creating carbon copies of the successful pioneer product or providing minor functional/design improvements. Product and brand differentiation begin to develop.
3. The Maturity Stage - The first one that market maturity is being reached is evidence of "market saturation," i.e., most consumers who were regarded as sales prospects will be owning or using the product. Sales grow in response to population increases and replacement needs.
4. The Decline Stage - Downward sales volumes, low profits, and surplus supply facilities characterize a firm, industry or product in the Decline Stage. In most cases, the entire industry is transformed as the product loses consumer appeal.

Mergers and buy-outs are common among companies in this stage.

It appears that simulation gaming as a product, as well as an industry, is well along in the Growth Stage. As such, certain strategies should begin to evolve that will postpone movement into Maturity and Decline. Each firm in the industry should (very few do) examine the market carefully to determine what action(s) they can take to extend the Growth Stage. Theodore Levitt coined the phrase "stretching the life cycle," which stresses active rather than reactive strategies [9]. Levitt indicates that there are four basic strategic avenues open to a firm marketing a product in its Growth Stage (to be used singly, sequentially, or in combination with one another):

1. Generate more frequent usage of the product among present users.
2. Develop more varied usage among present users.
3. Create new users.
4. Identify new uses for the basic product.

To illustrate how the Growth Stage might be "stretched," Levitt utilizes "Jell-O" (General Foods) and "Scotch-tape" (3M) as examples:

1. Generating more frequent usage
 - The number of Jell-O flavors was increased from six to more than twelve.
 - Scotch-tape was sold in a variety of dispensers that made the product easier to use.
2. Developing more varied usage
 - Jell-O was promoted as a base for salads and this use was facilitated through the development of a number of vegetable flavors.
 - The Scotch-tape line was expanded by the inclusion of colored, waterproof, and patterned-tape items that were used to seal and decorate gifts,
3. Creating new users
 - Jell-O advertised itself as a product with weight-control appeal.
 - 3M introduced a lower priced tape and also added a commercial line.
4. Identifying new uses for the basic product
 - A completely flavorless Jell-O was introduced for men and women who wanted to use gelatin as a "bone-building" agent (e.g., to strengthen fingernails).
 - 3M developed a double-coated tape to compete with liquid adhesives, reflection tape, and markers that compete with paint.

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THE GROWTH AND MARKET LEVELING OF SIMULATION GAMING

When compared to the lecture and case method of instruction, business games are relatively new. But they've probably been around longer than most of us realize. Their direct ancestors are war games, dating at least from the German Kriegspiel of the mid-nineteenth century [83]. Perhaps the most famous and also the most ambitious war games were conducted at the Total War research Institute and the Naval War College of Japan, as part of the Japanese preparations for World War II. Strategic and tactical games were also developed for use at the United States Naval War College [7].

Market Introduction

In 1955, RAND Corporation developed a game which focused on U.S. Air Force logistics. This game, called Monopologs, required its players to act as inventory managers in a simplified simulation of the Air Force supply system [8]. Monopologs was considered by the Air Force to have been highly successful as a training device. The success of Monopologs may have been one of the most important factors in the early development of business decision simulations.

The first business decision game to become widely known was developed in 1956 for the American Management Association. In this top management game, five teams of players control manufacturing firms which compete in a hypothetical, one-product industry. Each team makes quarterly decisions covering price, production volume, budgets, research and development, marketing, and marketing information. The computer output includes reports on sales, revenues, costs and profits.

After a few trial runs and some polishing, this game was made the central feature of a special two-week course at the AMA's Academy of Advanced Management in New York in 1957. The game attracted many favorable and even enthusiastic comments from executives and academicians who participated in the two-week course.

Rapid Growth

From 1957, there was a rapid growth in the number and usage of business games. As an example of this, we can survey the growth of marketing games. The first survey of marketing games appeared in the Journal of Marketing in 1962 [10]. This listing included 29 simulation games, about half (15) being computerized, the remainder noncomputerized. Interestingly, 20 of these marketing simulations were developed by business firms for their training purposes and only 9 by academicians for university teaching. From this point, marketing simulation gaming for teaching purposes grew rapidly. A 1967 survey of American Association of Collegiate Schools of Business members reported that 94 percent of the respondents used decision simulations in some part of their curriculum [2]. More recently, a 1974 survey of marketing simulation games included 53 marketing games and this list was not complete [5]. Currently, there is probably something in the neighborhood of 100 marketing games of all varieties available through publishers, business firms and universities. It can be assumed that there has been a comparable growth in the number and usage of top management, financial and accounting games.

Business Games in Industry

The use of business Simulation games in industry for management training was very popular in the mid-1960's.

The following comment appeared in The Wall Street Journal. "The soaring popularity of business games stems from their effectiveness in supplementing the pamphlets, lectures, and case studies on which most management training and employee-indoctrination courses are based" [1]. A big user of simulation games at this point in time was AT&T. Business Simulation games "work because they get the total involvement of the participant," claimed John Cogswell, Director of Management Training Programs at AT&T [1].

Approximately 15 years ago, Procter & Gamble introduced a simulation game entitled Venture for sales personnel and management trainees. The game, used at all P&G plants and offices, put the participants in the shoes of the top management team of a manufacturer of cake mixes. At about the same time, the Boeing Co. was using three different simulation games. Operation Feedback was played by employees in line for management positions; Operation Suburbia was played by middle- managers; and Operation Interlock was played by top management.

Other companies and organizations extensively using business simulation games at this time included Grubb & Ellis (the second largest real estate firm in the U.S.); Joseph Magnin Co. (chain of over 50 retail outlets); Walden Book Company; May Department Stores; the Sun Oil Company; the American Institute of Bankers; and the United Auto Workers [4]. There were undoubtedly many others in addition to these firms whose simulation usage was reported in the business literature.

Market Leveling

While business simulation games for management training were very popular in the mid-1960's, they have ceased to be popular for this purpose in 1980. By far the heaviest usage now is at colleges and universities. Examine the business literature; it is nearly impossible to find any references to the use of business simulation games for management training. One recent source has summarized the current state of usage of business simulation games in industry as follows: "While techniques such as role playing and in-basket exercises have been used in management assessment centers, the use of business games has been limited; in fact, games have apparently been overlooked by many firms" [6]. Why has the business simulation game declined in popularity for management training purposes?

Certainly business games offer many benefits. The business game in industry can be used to serve at least three purposes: (1) screening current employees, (2) orienting new managers, and (3) continuing management training [11]. When a company hires a new manager from outside, it is not always possible to do a truly effective screening job. In effect, firms use a "hire and hope" policy. In this situation, the post-selection Orientation period is critical to the future success of the new manager and it is here that a simulation game may be quite helpful.

In addition to its use as an orientation device, the business game can also be used as a powerful tool for screening current employees who are about to move up in the management ranks. It is difficult to assess the behavioral skills needed for management success. However, analytical and decision making skills, although not the sole determinants of managerial success, can be observed; and a good way of observing them is through the use of a business game.

Finally, in addition to screening current employees and orienting new managers, the specific industry game can also be used in a continuing management development program. For experienced managers, industry gaming acts as a flight simulator; they know how to fly, but they

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can try their skill under some different circumstances. The cost of failure in a business game is nil compared to failures in the real organizational environment. For experienced managers, the business game may also serve to identify additional training needs which can be handled/corrected through other training methods.

STRETCHING THE SIMULATION LIFE CYCLE

How can the current market leveling pattern for simulation games be overcome? Using the above information and examples as guidelines, the strategic elements necessary for extending simulation sales growth can be outlined.

1. Generating more frequent usage
 - A. Increase the total number of simulations and the scope of material that they cover.
 1. To date, this has been the motivation of the simulation industry. In the last ten years, the number and type of simulations being created and published has expanded significantly.
 2. The authors of COMPETE have long considered writing a new marketing simulation that will not invade the current market for COMPETE (or the proposed COMPETE revisions).
 - B. Restructure existing simulation computer programs so that they will fit a wider variety of university facilities.
 1. Many smaller schools find it difficult to implement simulation usage (larger scale simulations) due to the computer hardware available to them. Most simulation programs can be stacked and reorganized to fit the needs of these potential users.
 2. COMPETE has taken the initial steps in its revised edition to accomplish this end. More effort in this area will be spent in the next edition.
 - II. Developing more varied usage
 - A. Promote simulation gaming as a non-academic training tool for business use.
 1. Seminars, in-house training, etc. are all viable markets for this type of promotion. Currently, most effort is at the university level.
 2. COMPETE has been utilized in several university workshops and each author is currently planning (independently) to free-lance the simulation in business sponsored training efforts.
 - B. Each existing (large-scale) simulation could be broken down into its separate phases of emphasis in an effort to permit users to implement separate segments of the total simulation in a piecemeal fashion rather than as a total entity.
 1. COMPETE, for example, could be split into four segments to provide the competitive dimensions of price, salesforce, advertising, H & D - forecasting. Each could be used as a small-scale teaching device and later be recombined for a total experience.
 2. If each element is segmented, the simulation better fits the teaching needs in a "Basic" or "Principles" course (where simulations are not typically utilized). These courses are normally much larger than the more advanced functional area courses and thereby offer an expanded market.
- III. Creating new users
 - A. Many simulations could be marketed through a third party specializing in the "in-home" computer market.
 1. Several large manufacturers/marketers who specialize in this area currently exist. Bally, Atari, Radio Shack, etc., all manufacture and market their own versions of small game-oriented "in-home" computers. Small-scale and segmented large-scale simulations would be ideally suited for this large (growing) market.
 2. COMPETE was once used as a competitive vehicle among one of the author's "game-playing" friends spread liberally throughout the country. If their enthusiasm is any indication of this market's receptivity, the sales efforts should do quite well.
 - B. Develop time-shared versions of large-scale simulations that could be somewhat simplified for use at the high school level.
 1. Some efforts are in-place currently, but not much has been done in the business/marketing area.
 2. Size of market could be a positive factor in determining efforts at this level.
 - IV. Identify new uses for the basic product.
 - A. In this case, the Simulation industry (as opposed to individual existing simulations) has the greatest promise. Each month new areas are being developed and refined in a simulation-type framework.
 - B. To the extent that computer technology advances can keep up with Man's creativity, there is no limit to the future development of simulated exercises dealing with problems and opportunities that are now untapped.

The focus of this paper has been on simulation sales growth, both from an industry as well as an individual perspective. Some may argue that the concepts expressed herein are premature. However, others will agree that the next ten years represent an unsurpassed growth potential that cannot be ignored. The time to create, to plan, and to implement is now. Individual authors and the industry as a whole cannot wait until the market exhibits downward trends. As the total body of knowledge regarding all simulation techniques continues to grow, and as simulation and its techniques are more widely accepted, a new era in conceptualization is being heralded. Now is the time to creatively (actively) plan for future growth.

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REFERENCES

- [1] Carlson, Elliott, "The Versatile Business Game: Its Growing Use in Industry," The Wall Street Journal, July 8, 1966, pp. 1-2.
- [2] Day, Ralph, "Beyond the Marketing Game--New Educational Uses for Simulation," Fall Conference Proceedings of the American Marketing Association, 1968, pp. 581-588.
- [3] Faria, A. J. , R. O. Nulsen, Jr., and J. L. Woznick, COMPETE: A Dynamic Marketing Simulation (Dallas: Business Publications, Inc., 1979).
- [4] "Game Playing to Help Managers Communicate," Business Week, April 9, 1979, pp. 76+.
- [5] Goeldner, Charles R. and Laura M. Dirks, "The Games Marketing Students Play," The Marketing News, October 1, 1974, pp. 6-7.
- [6] Gooding, C. and T. W. Zimmer, "Use of Specific Industry Gaming in the Selection, Orientation and Training of Managers," Human Resource Management, Vol. 19, Spring 1980, pp. 19-23.
- [7] Greene, Jay H. and Roger L. Sissen, Dynamic Management Decision Games (New York: John Wiley & Sons, Inc., 1959).
- [8] Jackson, J. R., "Learning From Experience in Business Decision Games," California Management Review, Vol. 1, No. 2, Winter 1959.
- [9] Levitt, Theodore, "Exploit the Product Life Cycle," Harvard Business Review, November- December 1965, pp. 87-93.
- [10] McRaith, J. R. and Charles R. Goeldner, "A Survey of Marketing Games," Journal of Marketing, July 1962, pp. 69-72.
- [11] "Teaching How to Cope With Workplace Conflicts," Business Week, February 18, 1980, pp. 136+.