Simulation Gaming for Sales Management Training

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History

The direct ancestors of business simulation games are war games. These date back at least to the German *Kriegspiel* of the mid-nineteenth century. Perhaps the best known, and most ambitious, war games were those conducted at the Total War Research Institute and the Naval War College of Japan as part of the Japanese preparations for the Second World War. War games have also long been used by the British and Americans to test battle strategies and to prepare troops.

In 1955, Rand Corporation developed an instructional simulation game which focused on the US Air Force logistics system. This logistics simulation exercise, called Monopologs, required participants to perform as inventory managers in a simulated Air Force supply operation. The participants were thus able to gain decision-making experience in a risk-free environment. The participants could learn from their mistakes, while the mistakes caused no "real" harm. The Air Force considered Monopologs to be a highly successful training tool[1].

The first widely known business decision-making simulation game, Top Management Decision Simulation, was developed by the American Management Association in 1956. In this simulation, five teams of players operated firms competing in a hypothetical, one-product industry. Each management team made quarterly decisions covering price, production volume, budgets, research and development, advertising, and salesforce and could request selected marketing research information. The computer output included reports on unit sales, dollar revenues, costs and profits. This game attracted many enthusiastic comments from the executives and academicians who played it at the AMA's Academy of Advanced Management in New York in 1957, and it became a continuing part of this programme for many years[2].

The format of the Top Management Decision Simulation represents the typical format for current business simulations. That is the business game establishes a hypothetical business environment in which teams of players operate business firms in competition with other teams of players. The competing teams sell one or more products to one or more target markets and the participants are responsible for a wide range of management decisions. Each decision period normally represents three months of business activity. The decisions of each management team are evaluated by computer model and a wide range of sales and financial results are returned to the participants. Based on the results, a new set of decisions is formulated.

The number of simulation games available grew rapidly in the 1960s. A survey of marketing simulation games appeared in the *Journal of Marketing* in 1962[3], and listed 29 marketing games, of which 20 had been developed by business firms for management training purposes and nine by academicians for university teaching. The *Business Games Handbook*[4] listed nearly 200 business games of all varieties, while the *Guide to Simulation/Games for Education and Training*[5] provided descriptions of 228 business games.

In the widest-ranging survey of simulation game use reported, Faria[6] surveyed university business instructors, business school deans, management consulting companies, and training and development managers. The findings reported suggested that over 200 business simulation games were being used in approximately 1,733 business schools by nearly 8,600 university professors in the USA alone. Further, these numbers included only four-year universities; community colleges were not included in the survey. In addition, over 5,800 business firms were reported to be using simulation games as part of their training programmes. Finally, a 1992 survey of over 12,000 businesses with more than 100 employees found that 48 per cent of the responding companies were using simulation games in their training programmes[7] and at least one source expects the use of simulation games in management training programmes to increase dramatically[8].

Simulation for Management Training
Business simulation games offer many benefits for management training. The business game can be used to serve at least three purposes:

(1) To orient and train new employees.

(2) To screen current managers or would-be managers.

(3) For ongoing management training.

When new managers are hired, they must be provided with some insight into their new company and given some initial training. A problem at this stage, however, is that they are inexperienced and the company may not want to give the new recruit important decision-making responsibility. The use of simulation games in initial training programmes solves this problem. The simulation game gives the new managers opportunities to gain decision-making experience without the risk to the business firm of suffering the consequences of a wrong decision.

The business simulation game can also be used as a powerful tool for screening current employees who are about to move into the company's management ranks or to higher levels of management. It is important that managers possess good analytical and decision-making skills. These can be measured through the use of simulation games and, if lacking, can be taught. Where the simulation involves group decision making, behavioural skills can also be assessed and taught.

Business games are also useful in continuing management development programmes. They allow the executive to sharpen decision skills, experiment with strategies that the executive might fear using without a trial, learn new analytical techniques, identify areas in which the executive has further training needs, correct bad habits, and gain insights into other areas of the company's operations.

In general, business simulation games offer the following advantages:

(1) They allow for learning in all areas of management, ranging from goal setting, to strategy formation, to specific tactical decision making.

(2) A wide range of analytical techniques can be taught and used.

(3) Participants learn to work with, and through, others.

(4) The participant is active throughout, not passive, as with other training methods.

(5) Participants gain experience without paying the price of wrong decisions in a real-world setting.

(6) Time can be compressed with years of business activity simulated in a single day.

(7) Feedback is immediate.

(8) Simulations bring excitement to the learning experience.

(9) Simulations allow participants to experience something rather than just talk about it.

(10) Participants can be given a more global view of their businesses.

The greatest benefit of simulations, though, is the experience which they provide[9]. To learn how to play golf, drive a car, or fly a plane, one must actively engage in the activity. In the same fashion, to learn how to make decisions, one must actually gain experience in decision making. Further, during the simulation exercise, the trainer can view the mistakes being made and suggest corrective actions[10].

Of interest to users of business games in management-training programmes is whether simulations possess external validity. This is usually defined to mean that the simulation captures the essence of the real-world environment it attempts to replicate. While no definitive answer can be provided for all business games, research reported by Carvalho[11], Mehrez *et al.*[12], Norris[13], Slack[14], and Wolfe and Roberts[15,16] suggests that business games do exhibit external validity.

An additional issue of concern, when considering the use of business games in training programmes, is how they stack up against other instructional methods. In this regard, major review articles by Greenlaw and Wyman[17], Keys[18], Wolfe[19], Miles *et al.*[20], and Randel *et al.*[21] provide positive results for simulation games. These articles reviewed a total of 160 studies comparing learning gained from participation in simulation games with learning from

other instructional forms. Overall, simulation games were found to be superior in 75 of the studies (46.9 per cent), not so effective in 27 of the studies (16.9 per cent), while no learning difference was found in 58 of the studies (36.2 per cent). The general conclusion from these reviews is that simulation games are at least as good as other instructional methods and possibly superior.

Simulations for Sales Management Training
Given that simulations offer many potential advantages for management training, what types of simulations exist for sales and sales management training purposes? Surprisingly, in light of the importance and ubiquitous presence of sales management, very few general purpose sales management simulations exist. Tables I and II briefly summarize out-of-print and existing selling and sales management simulations.

As can be seen, only one simulation game currently in print, The Sales Management Simulation (1994), as described in Table II, is a true general purpose sales management simulation. That is it is a simulation that covers all aspects of a sales manager's job. All the other simulations focus on only one, or very few, of the activities which comprise a sales manager's job.

The Sales Management Simulation Game
The Sales Management Simulation (SMS) is a personal computer-based simulation designed for use in sales management and salesmanship courses, as well as in sales training programmes. Participants assume the role of the top sales manager for a large business firm. The simulation is placed in the industrial marketplace, actual secondary data define the industry, and the simulation content reflects the industry experience of the authors. Numerous features have been incorporated reflecting accepted principles of sales management. The hardware and software supporting the game's administration take advantage of the most modern and widely available technology. The SMS simulation has already been used both in university sales management classes and in business-training programmes with experienced sales managers and has performed extremely well in both settings.

Simulation Environment
The Sales Management Simulation places participants in the role of the top sales manager for a large business firm in the industrial marketplace. The industrial or "business" marketplace setting is large, with annual shipments of well over $6 trillion. Also the promotional mix of industrial marketers is typically dominated by personal selling as opposed to advertising and sales promotion. The SMS context, then, is reflective of a realistic and prominent setting in which sales managers function. Complementing this realism, the SMS environment is defined in the *SMS Player's Manual* using actual industry data from sources readily accessible to participants.

Name/Source	Focus*	Description
Amston Business Game (1959) – ARS Corporation	MT	Operation of wholesaler salesforce with decisions covering salespeople's time allocation, call rate for customer types, hiring and firing, plus general marketing decisions.
Industrial Sales Management Game (1975) – Didactic Systems, Inc.	MT	Participants make decisions covering hiring and firing, territory assignments, time allocation training, and bonus payment.
Industrial Sales Management Game (1960) – John Wiley & Sons, Inc.	A	Participants serve as sales managers for an industrial products company and select, train, compensate, and assign salespeople to territories.
The Industrial Sales Game (1977) – Wayne State University	A	Sales/marketing manager participants make decisions covering sales forecasts, salesforce size, sales training, and territory allocation.
Pillsbury Sales Management Simulation (1961) – Pillsbury Corporation	MT	Participants, in the role of sales manager, make decisions on compensation, hiring, firing, and allocation of salesforce time, plus other marketing decisions.
Prospectville (1962) – Hardy and Harman Co.	MT	Participants make decisions about territories and time allocation of salespeople.
The Sales Management Game (1978) – PPC Books	A	Participants, serving as sales/marketing managers, make decisions on price, size of salesforce, hiring and firing, allocation of salesforce effort, and promotional support.
The Sales Management Organization Game (1967) – Richard D. Irwin, Inc.	A	Serving as the sales manager for a small company, participants make hiring and firing, territory, transfer, and training decisions.
SESAME (1965) – CEIR, Inc.	MT	Participants in the role of sales managers make decisions including hiring and firing, allocation of sales effort, compensation, plus some general marketing decisions.

*A = Academic
 MT = Management Training

Table I.
Out-of-Print Sales
Management
Simulations

Name/Source	Focus*	Description
Planned Action Management (1992) – Ward Associates	MT	Participants serve as sales managers for a bank making hiring and firing, training, supervision and time allocation decisions.
Prospect Organizer (1985) – Dow Jones/Irwin	MT	Participants match salespeople to sales territories.
Sales Blitz (1987) – University of North Carolina	A	Participants are put in the role of salespeople who must allocate their time by customer type.
Saleshire (1989) – Wayne State University	A	Participants attempt to hire the right salesperson for each of a number of sales territories.
Sales Management Simulation (1989) – John Wiley & Sons, Inc.	A	Participants serve as sales managers making hiring and firing, training, regional allocation, and compensation decisions.
The Sales Management Simulation (1994) – South-Western Publishing Co.	A & MT	Participants are placed in the role of sales managers for a large company and are responsible for salesforce organization, hiring and firing, sales training, sales meetings, quotas, bonuses, salary, commission, sales contests, time allocation, and sales territory decisions. Participants are also responsible for sales department budgets and salesforce evaluation.
The Sales Manager (1986) – Market Power, Inc.	MT	Participants make decisions on commissions, quotas, and sales territories.
Sales/Marketing Management Teaching Tool (1984) – Loyola Marymount University	A	Participants are asked to evaluate salesforce performance based on facts provided.
SPREE (1986) – University of Nebraska	A	Participants are provided with facts about the performance of various salespeople and are asked to evaluate their performance.
Territory Management (1992) – Sales Technologies, Inc.	MT	Participants establish sales territories, routeing plans, and call plans.
TYME Management (1986) – Richard D. Irwin, Inc.	A	Participants make decisions on salesforce size and time allocation.

*A = Academic
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Table II.
Currently Available
Sales Management
Simulations

Simulation System
The Sales Management Simulation system comprises two components: one for use by the simulation administrator (sales manager), and one for use by the simulation players (sales manager assistant). Each component consists of the appropriate manual plus related software:

SALES MANAGER	{<u>SMS Administrator's Manual</u>
	{
	{<u>SMANAGER</u> (sales manager) administrator
	{ diskette

SALES MANAGER	{<u>SMS Player's Manual</u>
ASSISTANT	{
	{<u>SMASSIST</u> (sales manager assistant) diskette

Strategy Decision Mix
The mix of SMS strategy decisions encompasses most of the functions which make up the basic responsibilities of sales managers. A total of 29 strategy decisions which affect salesforce performance are made by the participants each period. In addition, nine market research reports may be purchased, providing information as to competitors' strategies and sales performances.

Basic Organization
Perhaps the most fundamental decision within the sales management function is the basic *organization structure* of the salesforce. A significant feature of SMS is that the salesforce may be organized on either a product basis or a customer basis. The products embody a wide range of target markets, sales volume, unit value, stages in the life cycle, need for technical knowledge, and so on. Similarly, the customers, of which there are seven major target markets, comprise a diversity of buying modes, order sizes, degrees of customization, numbers of potential customers, and so on.

At the beginning of each simulation year, the organization structure may be changed from product to customer or vice versa. This fundamental decision pervades nearly all elements of the sales manager's strategy. Specifically, of the 28 remaining essential decisions (excluding research report requests), 24 are on a "segment" basis. That is, these decisions are specific to a given product or customer segment. Each segment, be it one of product or customer, is endowed with a specific market response protocol. Thus the simulated environment actually comprises six sets of parameters, a given subset of three coming into play depending on the organization structure decision.

As in reality, competing companies need not be organized on a common basis. The SALES MANAGER algorithm is able to reconcile strategy decisions made under both organization bases. In addition to having participants make this fundamental decision, with its many implications for sales management

strategy, this feature also captures the principle of segmentation in marketing generally.

Personnel Management

SMS participants must determine the *size* and *geographic allocation* of the salesforce, which essentially involves hiring, firing, and transferring, with the accompanying cost and effectiveness implications, in each product/customer segment. The *number of district sales managers* is also decided. Both oversupervision and undersupervision result in inferior salesforce effectiveness.

Salespeople, dissatisfied with their compensation or work environment, will resign, with implications for both the general experience level of the salesforce and delays in restoring the size of the salesforce to full strength. A degree of normal turnover also occurs.

For the purpose of communication between management and the salesforce, any number of sales meetings may be called. As a form of basic call planning, the proportion of salesforce time allocated to each product/customer segment must be decided. All personnel management type of decisions are repeated within each product/customer segment.

Salesforce Development

Newly hired individuals automatically enter a sales-training programme and, thus, are not fully effective during their first period of employment. Beyond this, advanced sales training for present salespeople may be conducted at both the out-of-pocket cost of the training programme and the opportunity cost of their being absent from the field during the training period. Salespeople who have received this advanced training, however, may be expected to improve their sales performance.

A sales conference may also be held, involving the entire salesforce. Sales conferences entail a substantial monetary cost as well as the impact of all the salespeople being out of the field during the conference.

Sales Promotion

Salespeople may, within limits, offer potential customers a discount from list price as an inducement to close the sale. Salespeople may also bring co-op promotional programmes to the attention of wholesale and retail customers.

Compensation and Incentives

Consistent with the classic compensation model, the salesforce may be paid either a straight salary, or a percentage commission on sales, or a combination of salary and commission. Commission may be computed in several different ways.

In keeping with the sales management function of setting goals, sales quotas may be specified and a bonus paid, based on salespeople achieving the specified quotas. Any of three types of sales contest – cash, merchandise prize, vacation

– may also be conducted as a special form of incentive. Awards are made on the basis of salespeople exceeding their participant established quotas.

Simulation Results
Player Feedback
Basic feedback to participants after each period of the competition is in the form of financial statements, sales and market share data, and information specific to the management of the salesforce. This includes salesforce status with regard to size, the number who have received advanced sales training, morale, quotas made, bonuses paid, turnover, and similar personnel issues.

Market research reports, as purchased by players, provide information on competitors' strategies and sales performances. Feedback may be provided in either printed form, as generated by the administrator, or via players' SMASSIST diskettes. With the diskettes, players may either display feedback information on their computer monitors or produce print output themselves.

Multiple Performance Criteria
Bottom-line performance of SMS companies is, of course, profit or cumulative earnings per share. However, other criteria more specific to the sales management function may be invoked by the game administrator, such as turnover, resignations, morale, various cost/benefit ratios, market penetration, and so on. This and other information for administration purposes may be either displayed or printed by the administrator using the SALES MANAGER diskette.

Computer Administration
Manual
Administration of SMS is computer-based. In its "bare bones" mode, players write their strategy decisions on forms provided in the *SMS Player's Manual.* These handwritten forms are submitted to the administrator who is responsible for entering these into the computer (using the SALES MANAGER diskette). Once all the companies' decisions have been entered, the SALES MANAGER software analyses the decisions and produces results for the period. The administrator may then print results for return to each company, as well as reports for the administrator's own use.

Diskette
Instead of submitting written forms to the administrator, participants may alternatively place their strategy decisions on the SALES MANAGER ASSISTANT diskette and submit the diskette to the administrator. This mode basically avoids the logistics of the administrator having to enter decisions manually and also reduces decision entry errors.

In this mode, results may also be returned to players on the SALES MANAGER ASSISTANT diskette. Players may then print the results themselves and/or review the results on the computer screen.

Administrator Control

The Sales Management Simulation may be administered in a very straight-forward fashion. By using default options, all that is essential to start a new competition is for the administrator to specify the number of industries and the number of companies in each industry. The performance of a given SMS company depends on (1) overall market sales potential and the effectiveness of the company's decisions relative to (2) the fixed environment defined by the SALES MANAGER software and (3) competing companies' decisions. Alternatively, (1) overall market potential, (2) the sensitivity of the environment to each of 28 strategy decisions, and (3) the balance between environmental versus competitor determination of strategy effectiveness may be specified by the administrator at the start of a new competition and altered at any time during the competition.

Computer User-friendliness

Many features of SMS are designed to enhance user-friendliness, i.e. to both administrator and participant. Among these are specifiable levels of administrator familiarity, a complete menu-driven format, thorough error detection, screen-based keyboard entry of decisions for both administrator and players, numerous default options, back-up recovery procedures, and so on.

Market Response Model

The algorithm by which SALES MANAGER processes strategy decisions is custom-designed for the sales management function. Rather than making use of a single-equation generic demand model, the market response to each strategy decision has been operationalized separately, taking into account fundamental forms of relationship, threshold conditions, diminishing marginal response, decreasing response, and so on. Unrealistic decision values are processed in a regular or "natural" manner, without the imposition of arbitrary measures. That is, the model behaves regularly for all decision ranges.

In many instances, strategy decisions interact, allowing for realistic synergistic effects and capturing the importance of an integrated strategy. Obviously, some sets of strategy decisions are more effective than others; company performance in SMS is in no way arbitrary. At the same time, the ability of the administrator to customize the environment sensitivity to any or all strategy decisions, the presence of interactions, and effectiveness being determined in part as a function of competitors' decisions, results in there being no single "best" strategy. Rather, the overall performance of a given company depends on the players' abilities to adapt their strategies to the environment and to their competitors' strategies.

Hardware Requirements

For the administrator, the SALES MANAGER software operates on a stand-alone basis, requiring only a single IBM-compatible personal computer, having

at least 640kbytes of internal memory and a hard disk drive. An 80-column (or wider) dot-matrix or laser printer is also required. A colour monitor is optional.

The administrator may choose between players' handwritten decision forms or players' SALES MANAGER ASSISTANT diskette as the mode of strategy decision input. With the latter, it is required that players have access to an IBM-compatible personal computer with a high-density floppy disk drive.

The SMS in Use
The Sales Management Simulation has been extensively tested in both the classroom and in sales seminars with experienced sales managers. Such use will be described.

A major pharmaceutical company held a week-long meeting of its regional and district sales managers from across the country. Two days of the meeting were devoted to an intensive sales strategy seminar. The seminar included eight presentations on topics such as recruiting salespeople, motivating salespeople, establishing quotas, analysing sales results, evaluating sales performance, and so on. Between the presentations, the sales managers at the seminar were grouped into teams of four participants each for The Sales Management Simulation.

Starting early each morning, participants made a decision in the SMS competition and, while the decision was being entered into a laptop computer for analysis, gathered together for one of the topic presentations which would run for 30 to 45 minutes. At the end of the presentation, the simulation results would be returned to each company. At this time, the participants broke back into their groups and were given 60 minutes to analyse their results and turn in a new set of decisions. Each of the groups had a laptop computer at their table to help them with the data analysis from the competition. This process continued through 12 decision periods representing three years of SMS competition.

As each period's simulation results were returned, the sales management group with the best performance results was awarded a rotating, large trophy which stayed on their table as long as they held the lead in the competition. Competition for the trophy became intense, with teams cheering and parading around the room with the trophy as they took over the competition lead. Prizes, such as a large glass jar of gourmet jelly beans, were also awarded for certain period-to-period achievements, such as most new accounts opened. At the end of the two days of competition, a thorough debriefing took place.

The intermixing of presentations with decision making in the SMS competition allowed for a nice combination of sales strategy theory to be coupled with practical use of the theory. Sales managers were able to exchange ideas within their groups and benefit from the insights of others.

The response to the seminar was outstanding. All participants agreed that they would like to participate in the SMS competition again, felt that they learned more by having to make decisions in the competition than by just having topic presentations, enjoyed the opportunity for interchange with other

sales managers from their company, felt that the SMS competition was very realistic, and all agreed that it would be worthwhile for any experienced sales manager.

Conclusion
Business simulations have achieved a prominent and meaningful role in the development of managerial skills, in both academia and management training. Simulation games are widely used in both universities and business firms. The validity of simulation games, and their effectiveness relative to other instructional and training methods, are well established.

Over more than three decades, several simulations dedicated to the sales management function have been developed, though many of these are no longer in print. Of the currently available sales management simulations, most feature a limited mix of sales management decisions. The recently developed Sales Management Simulation is an advance over these simulations. It encompasses a more comprehensive set of sales management functions, a segmented marketplace, a realistic industrial environment and is supported by a user-friendly computer base for both administrators and participants.

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