

Experiential Learning Enters the Eighties, Volume 7, 1980

STRATEGIES, MANAGERIAL APPROACHES, AND DECISION MAKING IN A GENERAL MANAGEMENT SIMULATION

Burnard H. Sord, University of Texas at Austin

ABSTRACT

The objective of the paper, like the other two papers previously presented is to identify and record the types of learning experiences which may result from participation in a general management simulation. In this paper the strategies, organization, and managerial approaches used by each team in the General Management Simulation will be examined and discussed. Since the paper will be limited, only two simulations will be examined and compared. Seven teams each with four members participated in the first simulations examined. Six teams each with three members participated in the second simulations examined. The timing of basic decisions, the approaches utilized in setting prices, purchasing equipment or materials, and the type of analysis utilized by the teams will be compared. Also, the strategies of each team, the organization of information for decision making, and the evaluation of competitors will be discussed.

INTRODUCTION

The simulation selected for study was an interacting general management simulation of a small manufacturing firm. Real world rules had been utilized in designing the computer programs for various business activities included in this business simulation. Decisions were made quarterly in order to include two or more annual financial reports as feedback for participants. Usually the simulation covered either 8 or 12 quarters. Participants were assigned to a team and each team had from 3 to 5 members. The number of teams in a particular simulation had varied from 6 to 10.

Each quarter all teams received the following feedback in their computer outputs. A production status report which was presented in a standard cost accounting form showing inventories of raw materials, work-in-process, finished goods, and statements of the cost per unit of work-in-process, product A, and product B; a statement of general overhead expenses and the allocation of general overhead to the three cost centers; a machine status report showing production schedule, depreciation, remaining book value, original cost of each machine, size of the labor force, shifts operated, and overtime; a salesmen status report of sales by each salesman, commission earned, salary, and total expense; a typical income statement and balance sheet; a sales report of total sales by products A and B in each region; and the sales prices of each company in both regions.

DECISION MAKING EACH PERIOD

Pricing Decisions

Price of Product A and the price of Product B in Local Region and in the North Central Region and the bid price on outside sales contracts had to be determined. Outside sales contracts did not affect the sales volume of the two regions, and there was no

marketing sales cost associated with the contracts.

Production Decisions

Number of shifts. Overtime on Shift 1 and Shift 2 (could be scheduled up to 20% on each Shift). Production workers hired or fired. Maintenance workers hired or fired. Foremen hired or fired. Emergency purchases of raw materials and/or total number of units and quarterly deliveries of yearly or six months raw material contracts. New price lists of emergency and contract sales were issued every six months. Planned production of units of product A and units of product B had to be specified each quarter. Whether or not extra maintenance expense for production should be changed. The number of days to operate each machine and the type of product, A or B, to be produced on each F machine.

Purchase of Equipment Decisions

New or reconditioned F or W production machines could be purchased for cash or on credit each quarter. F or W machines also could be sold each quarter. W machines produced work in process and F machines produced finished goods. A plant expansion decision could be made at the beginning of a quarter and the cost added to the current mortgage or cash could be paid for the expansion.

Marketing Decisions

Current advertising expenses could be either continued or changed each quarter in the Local Region and the North Central Region. Current advertising expenses, sales salaries, sales expense allowances, commission rates, and sales quotas could be either continued or changed each quarter. Salesmen could be moved each quarter from the Local Region to the North Central Region or vice versa. New salesmen could be hired or current salesmen could be fired at the beginning of each quarter. Also new or current salesmen could be placed in a sales training program at the beginning of a quarter.

Financial Decisions

In addition to the financial decisions relating to whether or not to pay cash or use credit in purchasing machines or in expanding the plant, bank loans for one year could be made and the interest and principle repaid quarterly.

COMPANY 1-77

Objectives

Our basic objective was to follow good business practices. We estimated a 40% or greater growth rate. We were concerned about inventories. One objective was to convert totally to B product in 3 years.

Experiential Learning Enters the Eighties, Volume 7, 1980

Decisions and Strategies

Decisions were group decisions. Market information was obtained from the semi-annual balance sheet on each company. Salesmen were paid high salaries, a \$1.20 commission rate, \$1500.00 salary per quarter and an \$870.00 expense allowance. We plotted past performance and projected the future of the market. B product didn't develop as we thought that it would. We were late in going into the North Central Region. We expanded the plant. We purchased 3 new machines. Our advertising was too low in the North Central Region. Production cost per unit was cut as much as possible. The purchase of new machines was more efficient than reconditioning old equipment. We only used overtime in the 1st quarter. Our return on investment was 22%. In analyzing our competition we could determine inventories and pricing policies. We ended by operating 3 shifts.

COMPANY 2-77

Objectives

Move into B product. Go into the North Central Region as soon as possible. Minimize capital expenditures.

Decisions and Strategies

We reacted more to what was happening in the industry. We retooled and bought 3 F machines. We spent considerable money. Our decisions were made by the group. There were strong differences of opinion quarterly. The market newsletter was not valid. Marketing strategy was based on what we could make and sell. We bid on but did not receive any of the contracts. We had no trouble in calculating cash flow, competition pricing, accounts receivable and our percent of market. We made sure that liabilities were under control. We retooled one machine. We were aggressive in the North Central market. Our share of the market was good and we were quite successful in obtaining our share of market. We advertised heavily and split advertising between the Local and North Central region. We placed 60% of our advertising on B very early. On the compensation for salesmen we determined that using only a commission rate did not work. We reacted and over-compensated our salesmen. We looked for some type of mix for salesmen's salaries in the first 2 quarters. We did penetrate the North Central market. We finished the simulation with 6 salesmen. We maintained a consistent work force. Advertising was not at the proper level and a cut-back did not lower sales. We should have looked at plant expansion.

COMPANY 3-77

Objectives

Highest sales possible, build the company, provide the best possible facilities.

Decisions and Strategies

We always worked toward our forecast. The market was not a realistic one. We sold out of products a number of times. We compared our total sales to the forecast, and we produced what the forecast called for. We sold our inventory in the 1st quarter. We bought a new W machine and sold the old W. Purchasing a new F machine was more efficient than other machine alternatives. We added to plant space. We operated 2 shifts for quarter 1 to quarter 5. We operated 3 shifts on all F's. We had an 18,000 unit capacity on our machines.

The inventories in the 2nd and 3rd quarters were ahead of schedule so we did not run overtime. Our percent of market was 19% of the total market in quarters 2 and 3. Our net profit after taxes was \$139,000 in the first year with an 8% profit margin, \$110,000 in the second year with a 8-1/2% profit margin and \$82,950 in the third year with a 4.3% profit margin. It took us 4 quarters to get a handle on the simulation. We didn't borrow money in the early quarters. We did buy F machines on credit. We priced below our competition. We never changed quotas or the \$1.11 commission rate. We purchased the market research survey. The economic indicators in the newsletter were of no use. We trained sales men for 2 weeks and this was very effective. We did not price above the market.

COMPANY 4-77

Objectives

Maximize earnings. Maintain and increase our share of the market. We wanted to determine our costs. Bid on contracts for products A and B. Review labor each quarter, analyze equipment, and set marketing prices and volume.

Decisions and Strategies

We made decisions as an executive committee. We had only 2 emergency purchases. We were operating all new machines at end of game. We would meet or beat anyone's price. We increased sales incentives. We increased advertising budget and it was \$3,500.00 to \$2,500.00 at the end. We had 4 salesmen. We entered B market early. We entered the North Central in the 5th quarter. We borrowed money to buy an F machine and entered into long-range raw material contracts. We minimized borrowing. We had minimum cash balances and we incurred one small overdraft. We changed from a low price and raised prices as the market increased. No information was purchased. There was no training of salesmen. 80% of our production was in B product at end of game. We were awarded 2 contracts and made a profit on these. 60% of advertising was spent in the North Central Region. \$1500 and \$3500 was the highest advertising expense. Our production strategy was anything necessary to lower costs. We used overtime only twice. We used new machines rather than reconditioned ones. There was no plant expansion. We spent \$1,250 for maintenance. There was no loss in production.

COMPANY 5-77

Objectives

Expand the business and meet the requirements of an expanding market. We used a cautious approach. We wanted a 20% return on investment.

Decisions and Strategies

We operated as a group and built a cohesive team. We moved into B as soon as possible. We moved into North Central Region as soon as possible. We purchased new F machines. We expanded the plant twice. We effectively trained salesmen. We were a little heavy on maintenance expense. We increased maintenance by \$1500 at one time. The actual ROL was 18.93%. We didn't want to be the company with the smallest increase in the surplus. We assumed that product B would come on strong. This was a mistake. We purchased new F machines and reconditioned some old F machines. We balanced these purchases with a forecast and machine capacities. All F's were equipped to produce product B.

Experiential Learning Enters the Eighties, Volume 7, 1980

Overtime was avoided. We ran 3 shifts at end of simulation. We spent quite a bit on maintenance. Our prices were going down. We were in the tipper limits of pricing. We gained our fair share of the market. We did pretty well in our marketing. Our prices were higher than others.

COMPANY 6-77

Objectives

Maximize profits. Balance production operations. Minimize hiring and layoff. Replace machines and add a 2nd and 3rd shift.

Decisions and Strategies

Used a minimum of training for the sales force. Purchased 7 new F machines. We did not have any long term debt. We analyzed competition and checked price sensitivity. We developed a map of profit margins. Our unit cost was \$19.40 for all units produced. Our additional maintenance cost increased every quarter, it reached \$1,100 per quarter. The replacement of F's started in the 3rd quarter. We had no overtime at all. We maintained a matrix of financial performance and a plan to expand production.

COMPANY 7-11

Objectives

Our plan was to follow the information in the B Market research report.

Decisions and Strategies

We were producing very heavily on product B. We did produce both B and A by quarter 4. We reviewed the number of laborers needed each quarter. We planned for steady growth. We analyzed the status of the F machines and the W machine. We balanced the F machines with W machine. Our pricing was higher. We had a sales forecast. We were advertising adequately. Salesmen were reviewed each quarter. Our price was higher than average price on A and B. There were not many problems in the 1st year. We had 3 salesmen in the Local Region all trained for 2 weeks and 2 salesmen in the North Central Region were all trained for 2 weeks. We had the best salesmen in the Local Region. We sold all units produced in quarters 6,7, 8, 10. All four members agreed on decisions. We calculated: ROE, Profitability, Inventory Turnover, Unit Cost, Short term debt at end of each quarter and Debt to Equity. We didn't expand plant. We received three contracts which we had bid on.

COMPANY 1-24

Objectives

We thought that if we were put in charge we could not lose - this was a mistake. We wanted to be profitable We wanted to get our fair share of the market. We tried to operate as if we owned the business.

Decisions and Strategies

The group did not plan adequately. Our planning was weak. We tried to identify what to do. We were doing several things right, and were trying to determine what we were doing correctly. We

learned a lot about ourselves. Interaction was effective. The strong individuals in the group controlled the decisions. One person wanted more in advertising, and it was useless to argue this point. Every member came in with good ideas, but others didn't agree. At first, we did not have much cash. We tried to keep prices high. We were not trying to force anyone out of the game. We didn't do a good job of analyzing the strategy of competitors We overacted and overpaid salesmen. We used advertising heavily. It ranged from \$5,000 to \$11,000. We kept putting more money into advertising. We had lower profit margins. We could project market. We missed on sales forecast. We played around with commission rates The cash available was very good in the last phases of the game. We started product B too late. We tried to analyze balance sheets. We knew there would be a strike. We didn't have a good handle on the cash flow.

COMPANY 2-24

Decisions and Strategies

The simulation had 3 phases. Quarters 1,2,3 were tentative. The purchase of new machines would save \$1.00 per unit and we decided on all new machines. Quarters 4-7 initiated a second period. We were always producing at 3 shifts. We were predicting sales accurately. We expanded the plant. Our strategy was low cost on each unit produced. Large volume purchases of raw materials. There were variations in fixed cost. We used various combinations of commission and sales expense. We had real success in the North Central Region. We trained every salesman hired. Expense allowance was very important. We didn't change our maintenance expense, and the decline in productivity was minor. At end of quarter 10, we had 11 machines. Our maximum contributions to surplus were due to our large percentage of North Central Region's market. It was higher than others. Our price compared favorably with the North Central Region prices. We also made a profit from contracts. In the 8th quarter a lack of B product lowered our profits.

COMPANY 3-24

Objectives

Maximize shareholders equity.

Decisions and Strategies

Our basic problem was how to get salesmen to sell more. We tried to identify the incentives necessary for salesmen to sell more. We tried to determine what salesmen were doing in the North Central Region but never found the key.

Our decisions were made by the groups. We kept records of cost of goods sold, cost of sales, cost of advertising, total sales in local market, our price for A, the lowest price for A, the highest price for A, price ranking by companies and the cost of advertising. We approached the North Central Region in the wrong way. We were losing our percentage of the share of the market. Too many salesmen were in the North Central Region. Our new machines were tooled for B. First new machine was bought in quarter 4, In quarter 6, we had 11 F machines. Salesman training could not be used, because we lost a week of selling. Training was effective. We tried everything in the North Central Region. Should have moved out earlier. Marketing decision required lots of time. We improved our share of the market. We ignored outside sales. The balance sheets

Experiential Learning Enters the Eighties, Volume 7, 1980

each quarter for 10 quarters was the best measure of profit after taxes. Considerable information was taken from computer printout sheets. We used machines around the clock. We could predict the trend of the market but could not determine how to obtain our share. We developed graphs of our percentage of total sales. We developed a graph of units sold per salesman, and our percentage of the total market. We increased the number of salesmen, but the adding of salesmen didn't increase our share of market. We had a good handle on production.

COMPANY 4-24

Decisions and Strategies

We tried to stay in Local Region and stay in B product. From quarter 5 to quarter 10 we were trying to understand salesmen. We also tried to play the computer rather than interact with the other companies. We did stay in the local market up to the 5th quarter. We had the highest sales costs. This was not working like it should. We didn't buy market research information. We didn't become preoccupied with one factor of game. Our biggest problem was with the salesmen. We didn't pay much attention to our cash flow. We were the highest in pricing.

COMPANY 5-24

Objectives

Try to produce enough to maximize income. Used a conservative approach.

Decisions and Strategies

The last 2 quarters were our best. We ran 2 shifts. Started in 4th quarter to cut cost and analyze machines which were not very efficient. We analyzed the market to predict our market share. We were always trying something new each time. We ended up with all new F machines. We always had the 2 top salesmen. We ended up with 5 salesmen. In the North Central Region we tried advertising. Raising salesmen's salaries did not work. We didn't have enough salesmen. We were reluctant to add a 3rd salesman. We didn't change salesmen. We experimented in the North Central Region for 5 quarters. Our \$5,000 in advertising didn't seem to work in North Central Region. We tried to stock pile products but decided against it. We ended up with 78 workers. We had a conservative approach. A clarification of loans granted should be made. We ran out of finished goods 2 or 3 quarters. The salesmen determined our strategy. (We had 2). We were affected by the strategy in the North Central Region.

COMPANY 6-24

Objectives

Our objectives were to be the most profitable company. To operate as a conservative company. To increase capital on hand.

Decisions and Strategies

Initially we didn't think that we could obtain loans. We didn't do anything drastic. For the 5th and 6th quarters we were in a financial bind. We added a 2nd shift to boost production. We had high overhead costs. We paid little attention to other companies - to what other people were doing. We tried to maintain a steady growth. Initially we were trying to produce as much as possible. In the middle of the game we reduced our inventories. We didn't understand the market information we received, and considered it useless. There were high incentives for salesmen. We didn't know what other teams were doing to advertising. We were low. We didn't know what the rest of the

companies were doing in the market, and we would know this in the real world. Our pricing strategy was a \$1.00 to \$2.00 profit on each unit. We went into product B. We bought new machines. Our bidding was fairly competitive on the 1st and 2nd bids. We set a base price plus profit. We entered the North Central Region fairly early and had the lowest price. We didn't do well and should have gotten out of the North Central Region sooner. Strategy in production was to buy long-range contracts for raw materials. We tried to keep low inventories. We saw no effect by increasing maintenance expense. We did well in determining the cash flow. We didn't use loans as much as we should. Made no analysis on competition. We had a graph of profit by quarters and a graph of percent of market. Our market share dropped and we were selling our B product every quarter. The net income over sales graph was higher in the 1st part of the simulation, but after the 5th quarter it started down.