The use of computer simulations as a methodology for college teaching has become widespread. A new generation of sophisticated and innovative classroom exercises that imitate real situations has been spurred by technological developments. Such simulations have found applications in such diverse fields as history, medicine, law, and business administration.

Accompanying the application of simulations in business administration courses are a variety of methodological questions, including the choice of level of difficulty, simulation content, form of team or group composition, mechanics of simulation operation, integration of the simulation with the remainder of the course content, and course emphasis on the simulation.

This paper will consist of a review of these methodological issues, a summary of the appropriate applications of simulations in one particular course, Business Policy and Strategy, critique of various simulation games, and a sharing of experiences from authors, teachers, and students at various educational levels.

EVALUATION CRITERIA

The decision by a trainer or teacher to utilize a Management Policy and Strategy Simulation (MPSS) game in a training or academic setting can be arrived at in a variety of ways. Dissatisfaction with the traditional case/lecture method, based upon perceived ineffectiveness or tiredness with this methodology, can be one rationale. Reports of positive experiences by colleagues, journal articles researching this methodology, previous experience as a student, departmental policy, and/or the desire to experiment can be other supportive reasons.

Whatever the means by which this decision was reached, the decision-maker faces a number of alternatives to choose from. Simulations such as The Multinational Management Game(1), STRATSIM(2), The Executive Game(3), The Executive Simulation(4), The Management Game(s), and Tempomatic IV(6) are six of the possible choices which exist. Without spending a large amount of time to read, understand, and evaluate each possibility, the trainer or teacher is faced with the possibility of making a choice which is suboptimal or nonsuitable for his/her situation. The objective of the present paper is to present a set of evaluation criteria for MPSS games which the authors have developed and found to be useful, and to compare and contrast, on these criteria, the six simulations mentioned above.

In order to compare and contrast MPSS games, a review of various sources was undertaken in order to assess the construct of the simulations. This review revealed that MPSS games primarily differ in the scenario presented, the types of functional decisions to be made, and the structure of the game. These criteria are summarized in Table 1, and briefly discussed below.

The scenario Includes the Industry in which the game is set, the products manufactured, the inclusion or exclusion of international sales markets, the broad economic indicators utilized, and the nature of demand curves for the product(s).
Developments in Business Simulation & Experiential Exercises, Volume 9, 1982

74 games surveyed, indicating a preferable choice in a graduate or executive training situation. There is some variance in the use of Accounting ration as decision tools, and more emphasis placed on other tools by The Executive Simulation and The Multinational Management Game. In reviewing the participant’s manual for each of the games, while they are all rated as good or better, The Business Management Laboratory has some features which make it the highest rated in this category. The discussion of this information and the more detailed information included in the full set of Tables will be the major points addressed in the presentation of the paper.

REFERENCES


TABLE 1
COMPARISON AND CONTRAST CRITERIA

A. Flipchart of Comparison

I. The Economy: The Scenario

II. types of Decisions
   a. Marketing
      1. Types and numbers of products
      2. Price setting
      3. Advertising
      4. Sales: people, reimbursement, hiring, training
      5. Market area
      6. Seasonal variations
      7. Quality control, existing product
      8. R & D Product development-new products
      9. Delivery of merchandise
   b. Manufacturing
      1. Capacity
      2. Raw material
      3. Labor costs
      4. Engineering (process) study
      5. Production schedule
      6. Overtime
      7. Plant expansion (existing plant)
      8. New Plants
      9. Depreciation and maintenance
      10. Cost of goods sold

   c. Finance and Administration
      1. Organization Vertical/Horizontal
      2. Centralized/Decentralized
      3. Stock sale and purchase
      4. Dividends
      5. Accounts receivable
      6. Accounts payable, notes payable
      7. Loans; planned, unplanned
      8. Bonds
      9. Reinvestments of funds
      10. Taxes
      11. Administrative expenses

III. Game Structure
   a. number companies/teams
   b. number decisions to make enumerated? Y/N number forms, how grouped/categorized
   c. number products wholesale vs. retail defined? Y/N
   d. Existing vs. New Company (past financial info Y/N, how much)
   e. Length of game
   f. Market reports available? Y/N what kinds

B. Evaluation Table

I. Richness/Complexity
   a. Marketing
   b. Production/Manufacturing
   c. Finance

II. Decision Tools
   a. Use of standard accounting ratios, instruction in use of
   b. Other decision tools

III. Manual organization
   a. Format
   b. Content detail

IV. Ease of reading and/or reference
<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>STRATEGY</th>
<th>TEMPORATIC</th>
<th>BUS. INT. LAB</th>
<th>EXEC. SIM.</th>
<th>MULTI-NAT'L</th>
<th>THE EXEC. GAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Economy and Industry</td>
<td>Starts from zero</td>
<td>Two years' past history</td>
<td>1 year past history</td>
<td>Starts from zero</td>
<td>1-yr. history for Team Starts from zero for others</td>
<td>Starts from zero</td>
</tr>
<tr>
<td>Migra. pens &amp; assoc. writing instruments</td>
<td>Migra. small appliance-like product &quot;Tempomatic&quot;</td>
<td>Migra. minilens steel fixture &amp; conkware</td>
<td></td>
<td></td>
<td>Two products undefined</td>
<td></td>
</tr>
<tr>
<td>domestically-based</td>
<td>domestically-based</td>
<td>domestically-based</td>
<td>domestically-based</td>
<td>domestically-based</td>
<td>Internationally-based</td>
<td>domestically-based</td>
</tr>
<tr>
<td>Sell to wholesalers &amp; large retail chains</td>
<td>not distinguished</td>
<td>Sells to retailers &amp; wholesalers (Im. effect on market)</td>
<td>Consumer goods mkt. - finished Industrial goods mkt. - unfinished</td>
<td>Sells to retailers &amp; wholesalers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market (macro) size &amp; share calculated</td>
<td>Forecasted sales &amp; potentials (qtr.9-12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Econ. Index - 3 qtrs. forecast</td>
<td>FWI (Business Week Index) shows deviation from forecasts</td>
<td>Economic Index Next qtr. &gt; forecast</td>
<td>Economic Index forecast for 3 qtrs.</td>
<td>Economic Index forecast for 3 qtrs.</td>
<td>Econ. Index seasonal index</td>
<td>Econ. Index price index</td>
</tr>
<tr>
<td>Inelasticity &amp; elasticity of demand on market</td>
<td>Demand for product</td>
<td></td>
<td>Can choose name of company - can draft by-laws &amp; other corporate papers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRITERIA</td>
<td>STRATISIM</td>
<td>TRENCHMATIC</td>
<td>BUS. MGT. LAW</td>
<td>EXEC. GAME</td>
<td>MULTI-RAIL</td>
<td>THE EXEC. GAME</td>
</tr>
<tr>
<td>----------</td>
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<td>-------------</td>
<td>--------------</td>
<td>-----------</td>
<td>------------</td>
<td>----------------</td>
</tr>
</tbody>
</table>
| Marketing | 1. Most products
2. Hiring antipersonnel week
3. Seasonal variations on products
4. QFU & RAD good, delayed
5. Elasticity of dem. excellent | 1. One product
2. Hiring personnel detailed
3. Advertising local & national
4. Quality control lump sum
5. Elasticity of dem. excellent | 1. Very diversified
2. Most detailed hiring personnel
3. Advertising by product, by area
4. Quality control divided between 2 products
5. One product generally fairly weak | 1. Two products
2. Hiring personnel somewhat tight
3. Can transfer products to & from dist. centers
4. One product generally fairly weak | 1. Very detailed, additional material given in calculation of production, guidelines (Ch.5) | 1. Very detailed, additional material given in calculation of production, guidelines (Ch.5) |
| Production/Mfg. | 1. Weak on raw m. purchase, labor costs
2. Strike possibility
3. Learning curve excellent
4. Can dump inventories
5. Calculating cost of goods sold | 1. Very detailed except for lack of D & E studies
2. Most detailed of all & games
3. Production specified on input card
4. Plant expansion & reduction possible
5. Screw from dist. center to dist. center can add dimension to costs of goods | 1. No A/R, A/P
2. Stock requirements only
3. Tax formulae given
4. No overall rating scheme as in STRATISIM
5. Planned & unplanned losses | 1. Very weak compared to other games | 1. Very weak compared to other games |
| Finance | 1. No discussion of A/R, A/P
2. Reinvesting funds only thru stock recall
3. Taxes?
4. RSI, SFI, ESF excellent
5. Unplanned losses only | 1. Very detailed in most areas of comp'n
2. No overall rating scheme as in STRATISIM
3. Tax formulae given
4. No overall rating scheme as in STRATISIM
5. Planned & unplanned losses | 1. No A/R, A/P
2. Stock requirements only
3. Tax formulae given
4. No overall rating scheme
5. Planned & unplanned losses | 1. Very weak compared to other games | 1. Very weak compared to other games |
## Table 4: Evaluation Table - Decision Tools, Partial, and Ease of Reading

<table>
<thead>
<tr>
<th>Criteria</th>
<th>STRATEGIC</th>
<th>TEMPO/MATIC</th>
<th>BUS/NET. LAS</th>
<th>FMEC/SHUL</th>
<th>MULTI-BAL' L</th>
<th>THE EXEC-CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Decision Tools</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting Ratios</td>
<td>ROI</td>
<td>ROI</td>
<td>ROI</td>
<td>ROI</td>
<td>ROI</td>
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<tr>
<td></td>
<td>ROI</td>
<td>EPS</td>
<td>EPS</td>
<td>EPS</td>
<td>EPS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Earnings per share</td>
<td>EPS</td>
<td>Debt/Share</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Tools</strong></td>
<td>DET</td>
<td>Row operating curv</td>
<td>Learning curve (not as detailed as STRATEGIC's)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Learning curve</td>
<td>Decision check sheet</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>MEG, SRI, ESV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Manual</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Format</td>
<td>Table of contents fair</td>
<td>Table of contents good</td>
<td>Table of contents excellent</td>
<td>Table of contents excellent</td>
<td>Table of contents excellent</td>
<td>Table of contents poorly organized; very detailed but poorly organized</td>
</tr>
<tr>
<td></td>
<td>Well laid out</td>
<td>Well laid out</td>
<td>Well laid out</td>
<td>Well laid out</td>
<td>Well laid out</td>
<td></td>
</tr>
<tr>
<td><strong>Content detail</strong></td>
<td>satisfactory</td>
<td>Good summary sheet of conditions, game rules</td>
<td>Excellent summary sheet of conditions</td>
<td>Excellent summary sheet of conditions</td>
<td>Fair summary sheet of conditions</td>
<td>Good summary sheet of conditions, game rules</td>
</tr>
<tr>
<td><strong>Ease of reading and/or reference</strong></td>
<td>Good/good</td>
<td>Good/good</td>
<td>Good/excellent</td>
<td>Good/good</td>
<td>Good/good</td>
<td>Poor/poor</td>
</tr>
</tbody>
</table>