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INTRODUCING INMART: AN INTERNATIONAL MARKETING SIMULATION GAME

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ABSTRACT

A new international marketing game, INMART, is described. In terms of scope, it is somewhat similar to the EX-STRA Export Strategy game (Bissada and King 1984). Both games require students to perform country analyses out-of-class prior to making export decisions (level of activity in various countries, pricing, etc.) based upon such variables as the changes in duty levels, currency values, and trade policies. However, INMART offers some unique benefits as well in that it can be played interactively by individual students in a relatively short
period of time.

INTRODUCTION

In recent years we have seen a greater emphasis being placed on the international aspect of undergraduate and graduate business programs. In order to better understand international marketing problems, it is important for students to become conscious of how different foreign markets require different marketing programs. Although the basic marketing functions are the sane, proper application of the marketing mix to those markets demands adequate knowledge of the markets and flexible decision making skills. Kleints (1984) study indicated that an international business simulation game can provide a valid learning framework for sensitizing students to the critical issues involved in international business.

This paper discusses the INMART game, which is
intended to introduce students to marketing decision making across a variety of markets. We will briefly review international marketing simulation games, and then describe the INMART game: its scope, the game structure, the decisions required, and its unique features.

INTERNATIONAL MARKETING SIMULATION GAMES

Although INTOP (the International Operations Simulation; Thorelli, Graves, and Howells 1963) has been available for over twenty years, to our knowledge there are few other international marketing games available. The only other international marketing games which we were able to uncover were those by Bissada and King (1984) and Hoskins and Mandell (1979). While it is very possible that we missed some relevant games in our search, a conversation with Hans Thorelli indicated that he too was searching for alternative international marketing games and that he had not found any either.

INTOP has traditionally been a mainframe game which is run by the game administrator. Students may produce either or both of two products, and various levels of quality are achievable for each product through investment in research and development. Plants may be located in any of the three markets: the United States, the European Economic Community, and Brazil. The game is being converted so that it may run on a microcomputer, but it is our understanding that the game would not be interactive (in the sense that individual students interact with it).

The Klein (1984) article does not provide much detail about the Multi-national Management Game (Hoskins and Mandell 1979). It appears, though, that the game is administrator-run and that it emphasizes the risk of expropriation among other concepts.

The EX-STRA Export Strategy Game (Bissada and King 1984) is an administrator-run game designed to run on an Apple II-E microcomputer. It handles five to six teams which can export to one to three markets chosen from a total of twelve countries, It emphasizes product development (through the adaptation of the product to specific export requirements), production strategy (through the determination of how much capacity to use), and marketing strategy (through pricing and channel decisions). Before students select the countries for exporting, they are to make thorough analyses of the local environments and their political and economic risks. Duty levels, currency values, and trade policies change during the course of the game.

To some extent, INMART is similar to EX-STRA in its scope. However there are a number of differences as well and these will be discussed in the next section.

GAME DESCRIPTION

Program Details

INMART is a microcomputer game, written in PASCAL for the IBM personal computer although the program should be easily convertible to other computer systems. It is a fully interactive game designed to be played by individual students. Therefore, the students will gain not only decision-making skill, but also microcomputer-usage skill. With access to microcomputers on most campuses becoming much more common, it is now feasible to assign students to play the game individually. Thus, one unique advantage of INMART comes from allowing each student to input the decisions himself/herself without any need for an administrator to handle the input and output duties. The student can also change his/her own decisions after all the input data are entered. Finally, the results of the player's decisions are shown immediately after the program is run. The program provides a detailed output report after each quarter as well as at the end of the game (i.e., 4 quarters). Thus the students get quick feedback in order to evaluate their past decisions before starting the next round of decisions. Table 1 summarizes the logical flow of the program. The lack of time delay and the students' full participation in the input-output process tends to create a higher level of enthusiasm among the students.

Scenario

Each student assumes the role of the International Division Manager for a U.S.-based computer corporation. The manager has been given the authority to make the final marketing decisions when its product is introduced through its sales subsidiaries in four different countries (Brazil, Canada, France and Hong Kong). The student is expected to familiarize himself/herself with these markets through a pregame assignment (i.e., a library investigation of the countries).

TABLE 1

SUMMARY OF PROGRAM ROUTINE

Historical data are provided.
Decisions are made on the quantity to export, the price, and the promotional allowance for each country.
The player inputs decisions through a terminal.
The market situation in each country is simulated using random number generators.
The results for each market are shown on the screen at the end of each quarter.
The player is asked to make the decisions for the next quarter.

Relevant Factors and Decisions

The four countries vary from quarter to quarter in terms of the level of trade restrictions (quota and tariff rate), governmental price controls, foreign exchange fluctuations, promotional efforts, product demand, and competitive situation. The student's decisions will need to be made based on these factors. For each quarter, he/she has to decide whether to export to all four countries. Then, for each country, he/she needs to decide on the quantity exported, the relative prices, and the promotional expenditures. Although there are only three decisions to be made per country, the player needs to analyze many factors involved in the marketing program for each country prior to making those decisions. Table 2 presents a list of variables included in the INMART game.

The quantity exported should not only be determined by demand, but also by the distribution structure and by the country's level of trade restrictions. The transportation costs have built-in economies of scale; the more units shipped, the lower the shipping cost per unit. On the other hand, these volume oriented, savings may be offset by high holding costs. Shipping costs and holding costs make up the logistics (distribution) costs, which vary from country to country depending upon the physical location, the relative warehousing costs, and the labor costs. It is assumed that goods shipped at the beginning of a quarter will arrive in time to be sold within the same quarter (within three months), although a varying (across countries) time-delay factor may be included in future versions of the game.

The pricing decision depends on the perceived demand for the company's product as well as the perceived demand for computers in that market in general. Further, competitor's price changes (which are computer-generated) also affect the pricing decision. Finally, price controls may be imposed by the host government from time to time.

The allocation of promotional allowances for each market depends on the advertising response function, which varies from market to market. Also, the competitors' promotional efforts can also affect the advertising response for our product.

TABLE 2

LIST OF VARIABLES USED IN THE INMART GAME

I. Country-specific Variables

- Quota
- Tariff
- Price Control
- Competition
- Demand level
- Foreign exchange rate

II. Cost Variables

- Logistics cost
- Duty
- Tax
- Product cost (FOB plant)
- Administrative cost

III. Decision Variables Per Country

- Quantity exported
- Unit price
- Promotional allowance

IV. Output Variables

- Units sold
- Inventory levels
- Profit (loss)

Demand Function

The total product demand function for each market is a function of current and past promotional efforts, the market's economy, and changes in foreign exchange rates. Total demand is much more volatile in some markets than it is in others.

The demand for the company product is the function of 1) the total demand, 2) competitor's prices, 3) our price, 4) our promotional expenditure and 5) competitors' promotional expenditures.

Game Rules and Penalties

The major constraints of the game in terms of rules and penalties can be listed as follows:

1. The total exports to the four countries may not exceed the excess manufacturing capacity.
2. The player may choose to export to only one country or to all four. The game objective is to maximize the total profit of the international division, not the profit in the individual markets.
3. The sales subsidiaries in the foreign markets will have fixed operating and administrative costs for each quarter, regardless of the level of export activity.

POSSIBLE GAME MODIFICATIONS

Our experience with the game is that students find it challenging, especially initially. A number of modifications are being contemplated, but we are well aware of the possibility of making the game too complex as we make it more realistic. It would not be difficult to add more products or more countries to the game structure, but it is not clear at this point that the basic issues raised by the game would not be covered just as well by the current version. However, changes such as time delay in the receipt of shipments (the likelihood of which would vary across countries) could be made so that students do not face such problems early in the game when the frustration level is the greatest. Similarly, the complete loss of a shipment or problems with technical obsolescence (again, varying across countries) could be added to the later stages of the game. As with most simulation games, we foresee the game evolving over time.

CONCLUSIONS

This paper has described a new international marketing simulation game, INMART. It is intended to introduce the students to the complexities faced in international marketing and not to give them a semester-long experience with such problems. Much of its uniqueness is due to the fact that it can be played interactively by individual students and that a number of periods can be played in a relatively short period of time (a student can make four quarters' decisions and receive the results in an hour's sitting). Thus students can be introduced experientially to concepts such as tariffs, trade restrictions, and foreign exchange rate fluctuations in a relatively short period of time through the use of INMART.

REFERENCES

Bissada, Y.F. and Gundar J. King (1984), "The EX-STRA Export Strategy Game," in David M. Currie and James W. Gentry (eds.), Developments in Business Simulation & Experiential Exercises, Vol. 11, 45.

Hoskins, William R. and Steven Mandell (1979), Multinational Management Game: A Management Simulation, Bowling Green, OH: Bowling Green University.

Klein, Ronald D. (1984), "Adding International Business to the Core Program via the Simulation Game," Journal of International Business Studies, Vol. 15 (No. 1, Spring/Sumner), 151 159.

Thorelli, Hans B., Robert L. Graves, and Lloyd T. Howells (1963), INTOP (International Operations Simulation), Toronto: The Free Press.