OVERCOMING THE BUSINESS GAME COMPLEXITY PARADOX

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ABSTRACT

Business game users, during the their game's run are often asked questions about the decisions to be made, as well as needing help in interpreting the results generated by the simulation. If the game itself is fairly complex, the ability to determine causes and effects becomes even more difficult. This demonstration presents how the author of one game created software that lightens the teaching burden by providing coaching materials based on the firm's decisions and results. These materials outputs judgements as to the propriety and rationality of the decisions made by the players.

INTRODUCTION

Computer-based management games for education and development purposes have been widely adopted in North America with spreading interest in both Asia and Western Europe. As these games have developed since their modern inception in the late-1950s a number of design dilemmas have been experienced. These dilemmas have been felt in the areas of the model's specificity, the amount of dynamism and turbulence associated with the environment that has been created, the locus around which all decisions must be oriented and the requisite level of technical knowledge regarding a business's function needed for successful and meaningful play.

A common thread uniting these dilemmas is the level of complexity the simulation presents to players. Therein lies a "complexity paradox" which states that as the simulation game's complexity increases it (1) becomes more difficult for players to see how their actions bring about results, (2) increases the amount of start-up time required before real play can begin thereby limiting the game's application to real-world management development programs and (3) makes the game less transparent to the instructor using the game which makes it harder to coach players and to draw insights into the results of decisions made. All this, in turn, can serve to limit the experience's face validity.

This Demonstration indicates how the author of *The Global Business Game* (Wolfe, 2003) has attempted to address the complexity problem via spreadsheet-based auxiliary freeware. The game itself allows for competition in the world's three largest economic zones with each zone allowing manufacturing and sales operations to exist in two countries in each economic zone. Thus in NAFTA the countries of Mexico and the United States can be in operation. In the EU it is Germany and Spain while in

APEC it is Japan and Thailand. The competitive environment being modeled is the television set industry with both raw materials and capital equipment being purchased from international sources. Real-world interest rates, salaries and equity market economic data can be used which further increases the game's dynamism and complexity. With all this detail, both globally and at the firm-level, it has been found Game Administrators often have difficulty explaining why some decisions work and others do not.

When participants play a sophisticated business game they are always given a number of information sources. These are the game's Player's Manual, the general knowledge base possessed by the management team's players, the Game Administrator or Instructor, and the game's model. *The Global Business Game*'s two formal information sources can be found (1) in a series of Operations Notes generated as part of each firm's confidential Operations Report and (2) a confidential, Excel-based workbook created for the Game Administrator that analyzes the nature of the decisions made each quarter by the company and the operational results created by those decisions.

OPERATIONS NOTES

After each decision period the simulation generates for each player company, and the Game Administrator in a summary report, the following information:
1. The value of any new factory expansions by country.
2. The success or failure of any stock issue or Treasury Stock purchase; Also indicates the issue's share price.
3. The status of Stock Dividends by dividend per share.
4. The success or failure of any Bond issue or Bond recall; Also states the reason(s) for the failure of any Bond issue.
5. The success or failure of winning a Private Label bid.
6. The Liquidation of any factory by country.
7. The Decommissioning of any factory by country.
8. The sale or transfer of plant and equipment between a company's own units or acquired by other firms in the industry.
9. The need for inter-company funds transfers by amount in the country's local currency.
10. Fines and Credits by firm.
11. Sales Representatives quits by country.
12. The granting of Patents by Patent Number and company.

13. Rejection of Short Term Investments under certain cash liquidity conditions.

GAME ADMINISTRATOR GAMECOACH

The workbook that has been prepared for the Game Administrator analyzes the decisions made by a firm in the industry and the results those decisions produced. The entire package is distributed via the game's website at: www.swcollege.com/management/gbg/gbg.html

   A. Game Coach Overview—A Word file describing GameCoach and how it is used.
   B. GameCoach—An Excel-based workbook
      1. Introduction
      2. Data Base
      3. Six Country-based worksheets; Covers all decisions and operational results

In this game it is possible, if the Game Administrator chooses to put all six countries into play, for companies to make up to 72 individual decisions per country or 432 decisions each business quarter. Through the construction and testing of the simulation in its many iterations the game's author has unique insight into how the game's various routines have been modeled, their elasticities and where optimal values lie. These insights have allows the author to evaluate, in a general sense, the propriety of each decision made for each country in play in the game.

At the ABSEL conference the author inputted raw decision outputs from a company currently playing the game at a university to illustrate the information generated for the Game Administrator. Through this demonstration it was hoped that other game developers and authors critiqued what was created by this author as well as attempting to create similar Game Administrator aids for their own games.

REFERENCES

Wolfe (2003) *The Global Business Game: A Strategic Management & International Business Simulation.* Mason, Ohio: South-Western.