

# **Developments In Business Simulation & Experiential Exercises, Volume 17, 1990**

## **UTILIZING INFORMATION PROCESSING TECHNOLOGY TO ENHANCE THE BUSINESS POLICY SIMULATION EXPERIENCE**

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### **INTRODUCTION**

It is highly important that collegiate schools of business teach the application and use of Information technology, and additionally teach applications and uses at the strategic or policy level of the organization. To accomplish this objective, the authors suggest that the business policy course be centered around a complex and challenging international simulation with access to spreadsheet applications software, decision-making modeling software, a decision support system, and an expert system.

### **COMPUTERIZED BUSINESS SIMULATIONS**

Today, with the widespread availability of desktop computers with more computing power than corporate mainframes of twenty years ago, simulations can provide the students with a learning experience that emulates the "real" world in terms of internal factors, external factors, international elements, human factors, labor relations, multiple International manufacturing facilities, etc. Whereas the basics of the approaches to maximize some specific business factor may be presented using, for example, management science techniques by manual calculation, the student's must be exposed to practical sized problems or they will not understand why they are learning the techniques in the first place. While business may certainly be simulated without the aid of a computer, we believe that the combination of the numbers of students that must be serviced and the omnipresence of computers in the workplace require the simulation be computerized.

### **SPREADSHEET APPLICATIONS SOFTWARE**

Above the use of a computerized simulation, there is a need for computerized tools for the students in the program. These tools provide the student with practice In "what-iffing" by aiding in the modeling of portions of the business under various assumptions of the future State of the business and world; i.e., they describe the situation without prescribing the action to be taken by the manager. The early incorporation of spreadsheet software into the students program will enable them to be comfortable with trying different decisions and interpreting the results of those decisions, all without causing harm to the business. Class material at this point will be based on assumptions by the students about the operation of the business; i.e., they will know what relationships (equations) exist between differing parts of the business. [It is not necessary to teach students the "detailed" use of a specific integrated package In order for them to have an appreciation of the use of technology in the manager's job.

### **DECISION-MAKING MODELING SOFTWARE**

Much software exists for microcomputer that is helpful to the students making decisions for their simulated firms. While software keyed to the text being used has some advantages, it is not necessarily disadvantageous to use a package that is independent. A package keyed to the exercises and symbology of the specific text being used cuts down on the frustration level of the students and lessens the time spent in the computer lab. It is extremely unlikely, however, that their future employer in industry will be using the same package they used in their courses, so they must be prepared to use different symbology anyway. The packages to which the students have access should include, but not be limited to, the following: inventory acquisition and control, production scheduling, product mix determination equipment acquisition, and quality assurance.

### **DECISION SUPPORT SYSTEMS**

The vast majority of computerized business simulations produce a history file, which makes an ideal database. By employing any of a variety of data base generators that are presently available, e.g., Interactive Financial planning System (IFPS), SAS, SPSS, etc., students can obtain valuable information to be employed in their simulated planning and decision-making activities. Decision support systems (DSSs) can be of value to correlate pricing decisions to increases or decreases in the level of units of finished product sold. Sensitivity analysis can be performed on such vital data as salesforce, advertising, wholesaler allowances, and retail customer coupon effectiveness. DSSs can even benefit production decisions by providing information on worker efficiencies, down time, and inventory availability.

### **EXPERT SYSTEMS**

The expert system is an outgrowth of artificial intelligence and is a system that tries to capture the knowledge of an "expert". Expert systems can enhance the business simulation experience in a variety of ways. Perhaps the most popular means of assistance is by serving as a tutorial in instructing the students in the mechanics of playing the simulation. A second choice of using expert systems in a simulation is that of expert strategic consultant. Expert systems can be devised to provide the novice game player advice in such areas as when to expand their advertising programs to when to build a new production factory. Expert systems can be used to reduce the learning time of a simulation and provide the student's access to a vast amount of strategic knowledge that can enhance their simulation experience.