

# Developments in Business Simulation & Experiential Exercises, Volume 14, 1987

## BUSINESS SIMULATION THROUGH ACTIVITIES OF A MANUFACTURING COMPANY

Lewis R. Selvidge, Jr.

### ABSTRACT

“Man, Technology and Manufacturing is a course offered at Georgia Southern College that introduces students in all academic fields to how a manufacturing enterprise functions within the private enterprise system. The course consists of a “simulated” company in which students are engaged in the operations of carrying out the activity areas and functions of a “real” manufacturing company. The course has undergone over sixteen years of development, and is offered in up to three sections of competitive companies each academic quarter.

All members of the class serve in ownership, management, and manufacturing and sales roles in the company. Competitive companies literally develop, mass produce and mass market a product at a profit. Students earn wages, salaries, commissions and cash dividends on their investments.

### INTRODUCTION

The philosophy behind our free enterprise system in the United States goes back to 1776 when Adam Smith wrote The Wealth of Nations. In this book, he described the foundation upon which the United States’ capitalistic economic system is based.

This freedom of enterprise in our country gives individuals the right to engage in competitive, profitable business. The law of the free marketplace causes competition among the various businesses, which creates variations in the quantity, quality and cost of the products that are in demand by the consumer.

There are numerous misunderstandings of exactly how the private enterprise system works, and how a manufacturing firm functions within it. These misunderstandings are the result of the public not having received basic knowledge of or not having engaged in a competitive business that operates under our economic system. A better understanding of the business world can be achieved through our education system by involving students in the laboratory simulation of private company activities.

### BASIS FOR AUTHENTICITY

The course is a study of the activity areas of real manufacturing companies: Company Organization, Company Management, Systems Analysis, Research and Development, Production, Marketing, Finance and Control, Personnel Administration, External Relations, and Secretarial and Legal. The course consists of a simulated, but very real company in which students are engaged in the operations of carrying out these activity areas and functions of an actual profitmaking manufacturing company. Both the authority and authenticity for course content and activities are provided by the Association of Consulting Management Engineers, Inc., in their publication entitled Common Body

of Knowledge for Management Consultants [2]. The course has under- gone over sixteen years of development by the author who serves as teacher consultant in up to three sections of competitive, simulated companies each academic quarter. Out of this development has evolved a textbook entitled The Manufacturing Enterprise [1], which is used extensively throughout the course in guiding students through company activities.

### COURSE OBJECTIVES

The specific objectives of the course are to provide students with opportunities to: 1) gain an appreciation of the profit motive and competition in the free enterprise system; 2) acquire a basic understanding of the major activity areas mentioned above, their functions and sub-functions, and of the interrelationships between these elements; 3) gain an awareness of themselves in the areas of interest, attitude and aptitude associated with success in ownership, management, and labor and sales roles in manufacturing enterprises; 4) acquire practical experience associated with career roles exercised in these enterprises; and 5) gain a positive mental attitude which is essential for a happy successful career in life.

### COMPANY ACTIVITIES

Through the purchase of common stock at two dollars per share, the student stockholders finance and own the company. A company president and eight departmental vice presidents compose the board of directors of the company after being selected by the class through the use of a secret ballot election. While the president serves as the company chief executive, including serving as chairperson of weekly stockholder’s meetings, the vice presidents fill the top management positions in the eight company departments of Systems Analysis, Research and Development, Production, Marketing, Finance and Control, Personnel Administration, External Relations, and Secretarial and Legal. Company departments are composed of a total of twenty-six functional divisions for which division heads are hired.

Student personnel serving in the total of thirty-five management positions are responsible for carrying out management functions of establishing objectives, directing the attainment of objectives, evaluating results, promoting innovation, and developing people. Division heads, division staff, and manufacturing and sales employees are hired through the analysis of employment applications and interviews. The following outline identifies company departmental titles and division titles therein:

- Systems Analysis
  - Applications and Programming
- Research and Development
  - Research
  - Development
  - Product Engineering
- Production
  - Plant Engineering

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- Industrial Engineering
- Purchasing
- Production Planning and Control
- Quality Control
- Marketing
  - Marketing Research
  - Advertising
  - Sales Promotion
  - Sales Planning
  - Sales Operations
  - Physical Distribution
- Finance and Control
  - Finance
  - Control
- Personnel Administration
  - Employment
  - Wage and Salary Administration
  - Industrial Relations
  - Organization Planning and Development
  - Employee Services
- External Relations
  - Communication and Information
  - Public Activities Coordination
- Secretarial and Legal
  - Secretarial
  - Legal

All members of the class serve in ownership, line and staff, and manufacturing and sales roles in the simulated company. A sample of specific activities undertaken are identified by department titles below:

### Systems and Analysis Department

Electronic data processing hardware is set up. Research is conducted to identify data processing program applications. Programs are developed, run and maintained. Printouts are distributed and interpreted. Data processing software is protected.

### Research and Development Department

Scientific experiments are conducted to determine properties of materials and products. New company products are developed and old products are redeveloped. Real product prototypes are produced and tested. Product working drawings are produced. Quality standards for developed products are established. Product operation and service manuals are developed.

### Production Department

Capital equipment inventories are taken, and physical plant (laboratory and classroom space) is maintained. Production methods are established. Operational, materials handling and inspection tasks are sequenced. Production process and flow charts are prepared. Production schedules are prepared. Jigs, fixtures, patterns and inspection gauges are designed and produced. Raw materials are purchased from the best vendors. Products are manufactured in quantity using mass production methods. Quality assurance methods are established and applied.

### Marketing Department

Marketing research surveys are conducted. Product follow-up surveys are conducted. Advertising and sales promotion campaigns are developed and conducted. Sales tools are developed and produced. Sales policies and goals are established. Packaging for products is developed. Salespersons are recruited, hired and trained. Product warranties are developed and administered. Manufactured

products are sold and delivered to consumers. Products returned by customers are serviced.

### Finance and Control Department

Working capital needed by the company is forecasted. Breakeven point analysis is conducted. Price/profit alternatives are analyzed. Funds received as a result of loans made and the sale of company stock shares and manufactured products are protected in a local bank account. Funds are paid out by check for goods and services purchased, notes payable with interest, wages and salaries of employees, sales commissions, stock redemption and cash dividends. All financial records are audited. Financial statements are prepared and reported to the stockholders.

### Personnel Administration Department

Division heads, division staff and production workers are recruited, hired, trained and placed on the job. Job specifications and descriptions are written. Wage and salary rates for employees are established. Policies concerning employee absences are established and enforced. Incentive programs are developed and administered. Rules of conduct for employees are established and enforced. The role of industrial labor unions is considered. Personnel organization charts are developed and displayed. On-the-job safety rules are established and safety education programs are conducted. Services to promote employee job satisfaction are provided.

### External Relations Department

Information about company activities are communicated to the public, including the immediate families of company personnel. Programs are developed and conducted to establish goodwill between the company and the public. Efforts are made to coordinate the activities of the company with those of civic and other organizations. Company tours are conducted.

### Secretarial and Legal Department

All necessary legal instruments are designed, prepared and revised concerning the incorporation, operation and liquidation of the company. Secretarial functions are performed including maintaining custody of company legal instruments and other paperwork, typing and duplicating paperwork, developing and maintaining a filing system, recording minutes and conducting roll call votes at stockholder's meetings. Patent documents are prepared for company products.

Students are conditioned to consider the class a "company," not a class; and to consider themselves "company personnel," not students. Academic majors represented in the classes range approximately as follows: business, fifty percent; education, twenty-five percent; and technology, twenty-five percent.

Total student monetary investment in individual companies amounts to an average of about \$425.00. Company fixed and variable costs average approximately \$500.00 each quarter. Revenue from product sales has ranged from just under \$200.00 to over \$1,200.00. Net profit as a percent of sales revenue has averaged about thirty percent for quarterly companies, a profit rate understood by the students to be highly unrealistic in the real world. Out of more than one hundred sections of the class, only one has suffered a negative return on its investment.

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Over the past sixteen years, a sample of popular products which have been manufactured and marketed include glass top coffee and end tables, folding patio chairs, clocks, photo galleries, lap desks, leather belts, message boards, plant stands, cassette cabinets and coaster sets. Quantities manufactured range from approximately twenty to fifty each depending on the complexity of the product design.

### CONCLUSION

Through active participation of students in a "simulated" company which actually develops, mass produces and mass markets a product, insights are gained into the internal and external affairs that are involved in keeping a "real" profitmaking company on a successful, competitive basis. In carrying out the activities of the various departments, the students encounter the problems that any modern, private company would encounter. They are able to seek and find feasible solutions to these problems by using methods that real companies would use to solve their problems. After having taken financial risks and obtaining first-hand experience working in various company positions, meeting specified company requirements, delegating authority, and accepting responsibility; students gain an appreciation of how modern business firms function successfully within our free enterprise economic system in the United States.

### REFERENCES

- [1] Nelson, Rex A., and Selvidge, Lewis R., Jr., The Manufacturing Enterprise, Revised Edition (Statesboro, Georgia: Southern University Press, 1986).
- [2] Sub-Committee on the Constituent Elements of Management, Common Body of Knowledge for Management Consultants, Revised Edition (New York: Association of Consulting Management Engineers, Inc., 1976).