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**SIM ECO SOC WITH BUSINESS CURRICULUM MODULES:  
A SIMULATION FOR BUSINESS ETHICS AND MORALS**

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SIM ECU SOC, Simulated Economic Societies, is a non-computerized simulation which replicates a mass, modern, industrialized society existing, sequentially, under three economic systems-- mixed, collective, and free market. Included in the model are farms, big and small businesses, advertising agencies, insurance agencies, a labor union, a government, two political parties, law enforcement officers, a charity organization, a hospital, and the mass media. Also part of the game's design are modern societal problems, such as drug abuse, crime, poverty, malnutrition, and social protest movements.

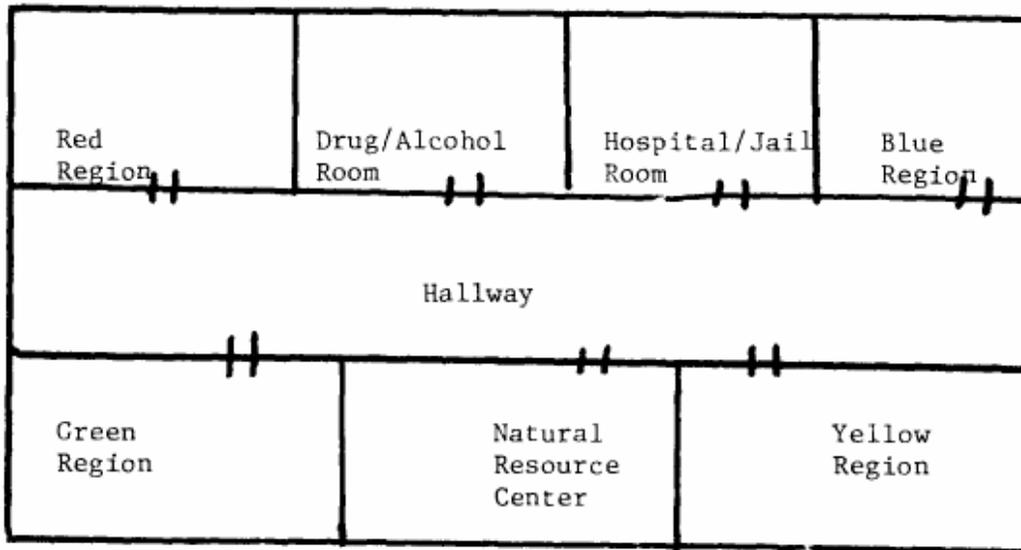
Although SIM ECO SOC was designed for social science courses to study the complexities of modern society, its flexible and dynamic format allows additions and modifications, developed jointly by the authors, making the game especially useful in business courses. Modules are available to add the focus of many of the typical business disciplines to SIM ECU SOC. Two significant benefits are thereby presented to the student: (1) the opportunity to exercise one or more of the business skills learned in the classroom, and (2) the developmental experience of living through the social consequences of business decisions. It is the latter area that is of the greater benefit to the student's developing sense of business ethics and morality. The purpose of this paper will be to describe briefly the rules, mechanics, and dynamics of SIM ECU SOC and explain the additions and modifications which make this complex, non-computerized simulation appropriate for courses in the business curriculum.

SIM ECU SOC is designed for 40 to 50 players and requires 80 to 90 hours of playing time over a 2- to 5-week period. A shortened version of the simulation, in which only the mixed economy is used, requires about 35 hours of time over a 2- to 3-week period. All members of the society live in one of four regions (Blue, Green, Red, and Yellow), each of which is located in a separate room. Other rooms necessary for the proper functioning of the game are the Natural Resource Center, the Drug/Alcohol Room, and the Jail/Hospital Room (see Figure 1). Travel from one region to another is allowed only if a person has a valid Personal Travel Ticket obtained from the travel and transportation industry in the society.

All members of the society must obtain and hand in to the coordinators one valid food sticker before the end of each session. Food stickers are available from the farmers (AGRIN) of the society after they have harvested their "crops". If a person fails to obtain subsistence, i.e., a food sticker, for himself, he becomes a victim of malnutrition and must report to the hospital at the beginning of the following session.

At the start of the game, some of the participants are assigned as heads of the fifteen basic groups in the society.

FIGURE 1



The optimal floor plan for SIN-ECU-SOC provides separate rooms on a common hallway for each of the social institutions and residential/productive regions.

Those individuals who are not designated as head of any of the basic groups are unemployed and are to seek employment with one or more of the businesses or agencies in the game. Participants may work for as many groups as are willing to hire them.

There is a SIMGovernment, established under the SIMConstitution which has several SIMLaws in effect at the beginning of the mixed economy. These laws include personal income taxes, corporation taxes, and antitrust legislation. Participants can change both the SIMConstitution and SIMLaws as the game proceeds.

Measuring the health and vitality of the society are four National Indicators--Food and Energy Supply, Standard of Living, Public Commitment, and Social Cohesion. The National Indicators begin at the 200-point level and are increased or decreased according to the activities, successes, and failures of the various basic groups in the society (see Table I). If any of the National Indicators reaches "U", the society is dead and the game is over.

The fifteen basic groups in SIN ECU SOC are each given a general assignment or task to perform during the sessions of the game. The groups are interrelated and interdependent in the simulated society, just as such groups are in the real world. The success or progress of one is often dependent upon the activities and decisions of another. The tasks assigned are general in nature; the many decisions that must be made in order to carry out the tasks allow for a great deal of creativity on the part of the individual participants.

TABLE I

NATIONAL INDICATORS

Economic and political activities by groups or individuals in the simulated society affect the National Indicators (which begin at 200) either positively or negatively according to this table.

	Food and Energy Supply	Standard of Living	Social Cohesion	Public Commit- ment
Long-term Capital Investment	+30%	-0%	+10%	+0%
Short-term Capital Investment	+0%	+10%	+0%	+10%
Puzzles Bought at NRC	-1	0	0	+1
Puzzles Solved and Validated at NRC	0	+1	0	0
INNOVIN Sentences	+1	+2	+2	+1
Faulty Sentences	0	-1	0	-1
New Franchises Purchased	0	+1	+1	0
Arrests by LEA/DA	0	0	-1	+1
Absentees	0	-2	0	-2
Unemployed	0	-2	-2	-1
Deaths	0	-5	-5	-5
Status Symbol Cards Filled	-1	+1	0	0
CONSUMERIN "munchies" sold	-3	+3	0	0
Drug Users/Alcoholics	0	0	-1	-1
SIMPower (level one)	0	0	0	0
SIMPower (level two)	0	0	-3	-1
SIMpower (level three)	0	-5	-10	-10
SIMPower (level four)	0	-10	-20	-20
SIMPower (level five)	0	-15	-25	-25
Acts of SIMCrime	0	0	-3	-3
Mobility (upward)	0	+1	0	+1
Mobility (downward)	0	-1	-1	0

The first basic group is ADVERIN, or advertising industry. The job of ADVERIN is to conduct successful advertising campaigns which will result in raising consumer interest in a product so the product will sell better and make higher profits for the business involved. In order to accomplish this, ADVERIN purchases a 10-question quiz (on general knowledge subjects such as geography, sports, and spelling) from the Natural Resource Center. The more questions ADVERIN answers correctly on each quiz the more Consumer Interest Units (CIU's) it produces. ADVERIN answers the questions on a MASMED Advertisement Form which it must obtain from MASMED. A completed advertising campaign, i. e. , an answered quiz, is sold to INNOVIN or CONSUMERIN which can use the CIU's produced by the quiz to increase their profits. The more quizzes (or advertising) these businesses invest in, the greater the likelihood that their profits will be increased.

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AGRIN, or agricultural industry, produces food stickers for the society. This is an important function because everyone in the society must obtain subsistence each session in order to remain “alive” and healthy in the simulation. The “crops” planted by the farmers are jigsaw puzzles purchased at the Natural Resource Center (NRC). When assembled, these puzzles are redeemed for subsistence stickers. The number of stickers awarded for each completed puzzle depends on two factors: (1) the amount of money invested in scientific and technological advances such as fertilizer, hybrid seed, machinery, and (2) the weather. Each AGRIN must decide at the beginning of each session how many crops will be planted (i.e., how many puzzles will be purchased at the NRC) and how much, if any, will be invested in scientific and technological advances. The chance element--the weather---is determined by a throw of the dice when the assembled puzzles are returned to the NRC for validation. The subsistence stickers obtained by AGRIN can be sold, traded, or given away to members of the society. These stickers are to be affixed to the participant’s Subsistence Record Form before the end of each session, indicating that the participant has obtained enough food to remain healthy for the next session.

BASIN, or basic industry, solves anagrams which it sells to INNOVIN. The head of BASIN determines how many anagrams will be bought each session and which parts of speech (adjective noun, verb or adverb) are to be purchased from the NRC.

CONSUMERIN, or consumer industry, produces consumer goods in the form of Status Symbol Dots which are sold to residents of the various regions. The Dots are produced by solving picture puzzles purchased at the NRC; the number of Dots earned by each completed puzzle is determined by the number of Consumer Interest Units produced from the ADVERIN quizzes which are submitted along with the completed puzzle.

DELTA and GAMMA are the two political parties in the society. Each party determines its own political philosophy and platform, and nominates and campaigns for candidates for SIMPresident and SIMCongress. Each party’s main job is to elect its candidates to office and put its platform into effect by legislation.

EMPIN, or employees’ interests, is the labor union in the society. Its chief job is to collect employment statistics for the society. It may also seek to obtain higher wages and better working conditions for workers. It can also become politically active by endorsing candidates for SIMPresident and SIMCongress, and by lobbying for favorable legislation from SIMCongress.

HUMANITAS is the society’s charity or welfare organization. It raises money by collecting voluntary contributions from members of the society. It can use the money it raises as it sees fit-- to pay for food stickers for the poor, to pay for hospital care for the needy, etc. Funds are also obtained by submitting “Case Report” Forms at the end of each session, describing specific acts of charity carried out by the organization.

The next basic group is INNOVIN, or innovative industry, one of the big businesses in the society. Its job is to produce sentences by purchasing solved anagrams (nouns, verbs,

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adverbs, and adjectives) from BASIN and smaller words (prepositions, articles, conjunctions, etc.) and punctuation marks from SUPPLIN. The completed sentence is sold to the coordinators; the profit is determined in part by the length of the sentence, the types of words used, and the number of CIU's which are submitted along with the completed sentence. The sentences do not have to make literal sense, but they must be grammatically correct: "The green dream noiselessly epitomized the torrential dashboard."

LEA/DA is the law enforcement agent and district attorney for the society. When a SIMCrime is being committed, LEA/DA attempts to apprehend the SIMCriminal before the crime is successfully completed. LEA/DA does this by solving the SIMCrime puzzle before the SIMCriminal does. If LEA/DA completes the puzzle first, the SIMCriminal is placed under arrest and is tried by SIMCourt. During the trial, LEA/DA serves as the prosecuting attorney.

MASMED is the mass media of the society. Its job is to publish newspapers to keep the public informed of the newsworthy events of the society. For each newspaper that it publishes, MASMED receives a specified number of Advertisement Forms. This symbolizes that advertising time or space has been generated by publishing (or broadcasting). The forms are sold to ADVERIN (indicating they have bought time or space from MASMED to advertise). ADVERIN uses these forms to answer the quizzes they have purchased from the NRC.

SIMCourt is the judicial body of the simulated society. The three members of SIMCourt have three main functions: (1) to interpret the SIMConstitution and SIMLaws when requested to do so; (2) to hold trials and determine the guilt or innocence of those arrested by LEA/DA for violations of the SIMLaws and then to impose sentences on those who are found guilty; and (3) to conduct SIMElections (validating candidates, preparing ballots, counting votes, and certifying winners).

SIMRock is the society's insurance agency. This business makes money by selling hospitalization and property insurance policies. If a person buys insurance and some disaster occurs, the losses to himself or his property will be covered up to the amount of the insurance policy. The SIMRock agent also sells bodyguards and crime prevention devices which make it easier for LEA/DA to capture SIMCriminals. SIMRock receives a commission for all of the sales it makes.

SUPPLIN is the supplying industry which produces PCU's (Production Capability Units) by buying a large Production Word (like "encyclopedia") from the NRC and forming as many English words of 4 or more letters as possible from the letters in the Production Word. The more words SUPPLIN is able to form, the more PCU's it receives when the completed puzzle is validated by the coordinators. The PCU's are sold to INNOVIN which uses them to purchase small words like "and", "the", "to", "a", and punctuation marks in order to complete its sentences.

TATIN is the travel and transportation industry. It solves "word jumble" puzzles which it purchases from the NRC and redeems the solved puzzle for either Personal Travel Tickets

(PTT's) or Transportation Capability Units (TCU's). PTT's are used by participants to travel from one region to another. TCU's are used to transport subsistence stickers, Status Symbol Dots, and BASIN and SUPPLIN words from one region to another. For example, if an INNOVIN in one region buys a verb from a BASIN in another region, that verb must be transported with the appropriate number of TCU's in order for the verb to be used in that INNOVIN sentence.

Although the foregoing description of the SIM ECU SOC entities and their interrelationships present a valuable socioeconomic experience for the student, the opportunity exists to modify SIN ECU SOC to make it appropriate for use in conjunction with courses in the business curriculum. The principal focus remains on the complexities of modern society to assure that future businesspersons gain experience of a social situation.

By introducing into the simulation real but relatively simple problems in a particular business discipline, students are given a view of commercial reality to supplement their classroom work. In addition, these practical problems can be increased in difficulty to match an appropriate challenge to the level of the student's business coursework.

Business disciplines are added in modules for three reasons: (a) to keep the general socioeconomic experience primary; (b) to allow flexibility among users of SIN ECU SOC and among sessions of one SIN ECU SOC presentation; (c) to allow the needed participation of the business instructor for each discipline being used. (To be effective, the alternatives for each discipline usually require the instructor or a skilled aide to participate as guide and grader.)

Modules have been conceived for accounting, marketing/ advertising, production, finance, personnel, style and grammar in business communication, insurance, capital formation and tax policy, management, and ethical considerations. Within each of these modules exist a number of possible alternative emphases for SIM ECU SOC use. These alternatives will range in difficulty from the first course in a discipline to the junior/senior level; graduate students without practical work experience should also benefit.

The accounting discipline can be used as an example of the business-oriented modifications. The learning objective is for the student to experience financial and tax reporting and to participate as an accountant in the management process. The basic change is to use a typical set of books of original entry for a small business. At the upper range of the scale of difficulty, the module offers accounting system design and footnote writing alternatives. Here are five of the accounting alternatives described in more detail.

#### Alternative A.

In this module an accounting student is assigned to each Basic Group as its accountant. The student is expected to participate in the entity's productive effort when not working on the reporting requirements.

Entity management can ask the accountant to prepare analyses of the effects of various proposed courses of action or to do other quantitative work related to the specialty. An example of the latter is explaining to SIMCongresspersons the benefits of proposed changes in the corporate tax laws.

**Alternative B.**

Accounting students can be assigned to the intersession periods as auditors of the forms submitted by entity accountants or owners.

As their first assignment in this function they should be required to prepare an audit program including a useable statement of audit objectives.

**Alternative C.**

The reporting forms can be expanded to a full set of financial statements plus the tax return (known as Form SIN 40), formal cash receipts and cash disbursements book, and general ledger. Although a complete working set of records, these books are not complex.

**Alternative D.**

To focus on accounting system design and implementation, require the accounting student to prepare before the simulation a preliminary accounting system for the assigned employer. The student has been prepared for this task by the instructor's classroom lectures and assigned reading material.

This preliminary system would be based on the student's reading of the SIN ECU SOC manual. After using the system as proposed for the first three sessions, the student will modify the system as deemed necessary.

In this alternative, the instructor could require a formal report in two installments:

part I shows the preliminary system with explanatory comments on selection and content for each record, as well as a general system flowchart and description of entry flow; part II will present the revisions deemed necessary based on the student's experience and include explanatory and evaluative comments as necessary.

Alternative E.

To focus on the disclosure challenges of public reporting obligations, require the student to prepare financial statements and footnotes for a particular profit-oriented Basic Group. - During the simulation, the student is participating, preferably, in one of the alternatives A-B-C above. After completing the simulation experience, the student is to present a paper describing the financial report recommended. The paper should follow this format: full set of financial statements, notes to the financial statements, analytic and explanatory comments on statement presentation, commentary on each normal footnote not used, and consideration of the adequacy of disclosure. Some role-playing interviews with officers of the SIN ECU SOC enterprise will be required by the student to develop the needed information. Continuity of life for the enterprise beyond the simulation period should be assumed unless its demonstrated profitability suggests otherwise.

Typical problems introduced in the other modules are summarized in the following list:

<u>Module</u>	<u>Typical problem</u>
marketing/advertising	evaluation of market channels, appraisal of published advertisements, design of market research project
production	linear programming (graphic and linear equation methods) for farm resource allocation by AGRIN
finance	discounted cash flow analysis of capital investment alternatives for BASIN
personnel	hiring, layoff, and promotion decisions and employee interviews.
insurance (underwriting)	calculation of appropriate premium cost for SIMRock to charge
capital formation/tax policy	preparation of economic justification and drafting of legislation

management

resource allocation during the production process, principally focusing on planning and organizing functions.

Ethical considerations in business affect all functions and levels of the organizations. For this reason, the SIM ECU SOC module for ethical considerations is not assigned to a particular business discipline, but is presented separately. In contrast to the functional modules where participation is limited to a few students, all participants can be involved in this module.

Among the list of ethical conflict situations that may be selected are bribes to the coordinators (rejected by definition of the coordinators' role), black market puzzles, distorted news articles on product supply factors, suppressed news on social ills, smuggling of produced goods, predating insurance policies, political contributions, and gifts to law enforcement officers. In addition, charitable contributions are not tax-deductible at the start of the simulation, so HUMANITAS must deal with the problems of welfare for the poor and food for the starving.

The educational objective in the first alternative of this module is to expose the students to ethical conflict in an environment where they witness the effect of their responses. The responses can range widely: participate, support, ignore, resist, or prosecute. Unethical acts may be instigated by making application for SIMCrime. Any official can be approached; each must decide personally whether or not to participate.

The coordinators make the necessary collusive contacts, acting as a neutral communicator to preserve the criminal's privacy while allowing the act to be monitored. The other participant decides on a response, aware of the risks or potential rewards (public trial or wealth).

The second alternative in the ethical module is to assign outside readings and discuss them separately from the simulation but with that experience as background. Included in the recommended bibliography are codes of ethics of prominent corporations, articles from newspapers and business magazines, management textbooks, and religious publications.

SIM ECO SOC draws students into a developing economy, first as employees and then as citizens involved in a dynamic society. Because personal interaction rather than a computerized model determines the outcome of all actions, the experience is intensified for the participants. Socio-economic relationships reflect the real world, ranging from obtaining subsistence to the accumulation of wealth and the consolidation of capital. The functional and ethical modules create flexible learning opportunities oriented to business courses, thereby increasing the potential contribution to the learning process. These are the factors which make SIN ECU SOC an effective teaching system.