

GEO: AN ENTREPRENEURSHIP-ORIENTED COMPUTER-ASSISTED INTERNATIONAL STRATEGY SIMULATION

Precha Thavikulwat
Towson University
pthavikulwat@towson.edu

ABSTRACT

GEO is an Internet-based game that places participants in a global economic environment of nations with different trade policies, from import substitution to free trade. The game's user interface is classic Microsoft Windows. Participants (a) register individually, (b) are automatically assigned to groups based on their preferred group sizes, (c) collectively set their nation's economic policies, (d) can migrate across nations, (e) advance through multiple life cycles, and (f) receive a score that is a weighted sum of the participant's individual performance and the average performance of the members of the participant's group. Each participant can found five companies, each of which can produce one of five interdependent products. Companies (a) employ participants to raise their production, (b) compensate their employees with salaries and stock options, (c) sell their products through wholesale and retail channels, (d) can have an unlimited number of shareholders, and (e) can be acquired through either open-market purchases of shares or statutory takeovers. A demonstration version of GEO is available at <http://pages.towson.edu/precha/geo>.

DESCRIPTION

GEO is flexible, integrative, a test of abilities, and especially designed for the assessment of participants business acumen. As such, it is suited to comparing the relative capabilities of students either enrolled in different versions of an educational program or at different stages of the program (e.g., online vs. on-site, evening classes vs. day classes, undergraduates vs. graduates, entering vs. exiting). GEO can be part of the beginning, middle, or ending course of the business curriculum, a stand-alone exercise for a corporate training event, a screening exercise for admission into a business program, or a comprehensive experience for students at multiple points in a business program.

GEO tests participants' abilities to deal with strategic business issues. It is a competitive, computer-assisted game, wherein the interaction is predominantly participant-participant rather than participant-computer and wherein control of the exercise rests primary with the participants rather than with the computer. The computer assists the game by executing transactions, recording results, and assuring fair play. Participants control the action by the freedom they have to decide when to act and with whom

they should collaborate. GEO is Internet based and in perpetual motion, so acting sooner is generally more advantageous than acting later.

GEO requires between 8 and 16 hours of time to play, with the time evenly split between warm-up and full-speed activities. The lesser time would be appropriate for those with strong business backgrounds; the greater time, for those with weak business backgrounds. Mixed play among those of varied backgrounds can be especially advantageous, because both strong players among those with weak backgrounds and weak players among those with strong backgrounds would be driven to do their best, the former because of the opportunity to excel over those of a higher class and the latter because of the threat of being bested by those of a lower class.

Warm-up in GEO is accomplished by progressively introducing features over four phases. Over these four phases, the game advances from a one-product-one-company-one-nation game into a five-product-many-company-many-nation game involving corporate mergers and acquisitions, direct and portfolio investments, the collective setting of national policies, and demographic changes due to migration, births, and deaths. The broad array of activities give rise to rich data that is presented to participants in instant on-screen tables and graphs, so participants can analyze issues without the inconvenience and delay of paper printouts.

The typical implementation of GEO is to administer it as a one-semester exercise, beginning at the first week of classes and ending at the last week of classes. In the first week, participants register themselves into the simulation and are automatically assigned to groups based on their preferred group sizes. Then each participant is guided in founding a service company, which requires no purchased resources and holds no inventory. In the second week, participants are encouraged to employ each other to work in their respective companies. Employees increase a company's production and are compensated through salaries and stock options. In the third week, participants are encouraged to merge their companies, because merged companies are more productive than independent companies. In the fourth and fifth weeks, participants are able to found companies in more advanced industries, which must purchase services and sell products that can be inventoried. GEO becomes full-featured in the sixth week, when participants are able to found companies in the most advanced industries, which must, in addition to selling

products that can be inventoried, purchase resources that also can be inventoried. When full-featured, the supply chain of companies is as shown in Figure 1. The service companies are the simplest, the material and energy companies are more advanced, and the clothing and food companies are the most advanced. Typically, about 90% of the participants succeed in founding a profitable service company, 70% succeed in employing other participants, 50% succeed in merging their service companies, 30% succeed in founding a profitable material or energy company, and 10% succeed in founding a profitable clothing or food company.

In GEO, each participant advances through several life cycles. Consistent with the concept of life cycles, the participants' goal is to extend their lives. They do so by purchasing the virtual products produced by the virtual companies of the simulation. Products of service companies have the least value in extending their lives; products of the

clothing and food companies have the most value. A diagram of the relationships that give rise to the life-extension goal is shown in Figure 2. Thus, participants benefit from their companies through salaries, dividends, and capital gains, which must be used to purchase products in order to extend their lives.

Participants are assigned group credit equal to the average performance of the members of their groups. Group credit may be given more or less weight in computing scores, depending on the administrator's desire to incentivize group work relative to individual work. Typically, individual performance and group credit are weighted equally.

GEO is a Microsoft Windows program that requires the Microsoft .Net Framework. A demonstration version of GEO is available at <http://pages.towson.edu/precha/geo>.

Figure 1
Supply Chain of Companies

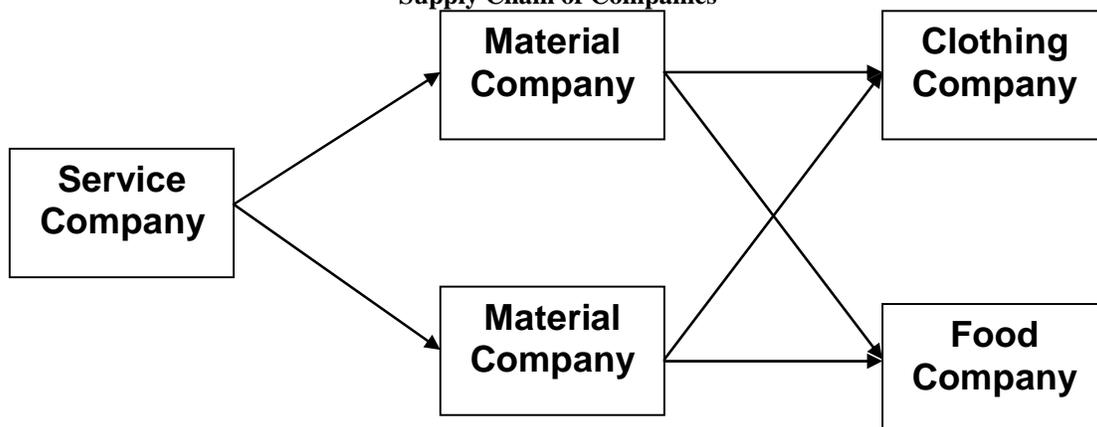


Figure 2
Performance Flow Diagram

