EXPERIENCE GEO: A MASSIVELY MULTIPLAYER GAME

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DESCRIPTION

GEO is a massively multiplayer game structured at the level of a global economy, one level of comprehensiveness above the total-enterprise games that are commonly used in business education programs. The game can accommodate 32,767 simultaneous players, although the usual session involves about 120 players. The game is flexible and its rules are simple, so students from different countries, classes, and educational levels can join the same session. Generally, a session takes place over a semester, with players entering and leaving the session at different times depending on their course schedules. For the conference session in which I will demonstrate the game, attendees with Internet-accessible Windows computers should bring their computers to experience playing the game within a field that includes about 180 other players beyond those present at the conference session. At the conference session, I will take attendees through the following steps:

1. Accessing the game. The demonstration version of the game can be accessed through the Web site at http://pages.towson.edu/precha/.
2. Registration. Participants register individually, each selecting a preferred group size at registration. Even so, participants are sequentially assigned to either a single-person group or an all-inclusive, after which they can switch to a group of their own choosing.
3. Bid for consumer products. Unlike many other business games, the participant's primary object is not to maximize company profit but to extend personal life, which comes about when participants virtually consume the products produced by the companies of the game. These bids constitute the demand curves for the products that the companies produce.
4. Found a company. The game begins with an empty economy, but each participant begins the game with just enough money to found one company and meet its minimum capital requirement. A company can produce only the product of its industry. The game supports five industries: service, material, energy, clothing, and food.
5. Staff a company. Every company has a manager position and a seller (sales agent) position. Companies in non-service industries also have a buyer (purchasing agent) position. Employment is consummated when a participant accepts the job offer of a company or a company accepts the work offer of a participant. Compensation is in the form of salaries and stock options.
6. Pick group. Participants not satisfied with their initial group assignment can switch to a different group subject to the following conditions:
   a. Except for the all-inclusive group, the maximum size of each group is the lowest preferred group size of its members.
   b. A participant cannot join a group if entry will cause the group credit that members receive to fall. Group credit (g) is computed and awarded each period by multiplying the mean personal performance of active group members (m) by a discount factor that rises with the number of active group members (n), as follows: $g = m\ (1 - .5^n)$. The instructor may link grades and other rewards to the participant's personal performance alone, ignoring group credit; or to the participant's group credit along, ignoring personal performance; or to the participant's total performance, which is the sum of the participant's personal performance and group credit.
7. Advance period. Normally, the game advances automatically based on elapsed time and participant activity, but for the conference session, I will advance the game manually.
8. Viewing and analyzing results. The game presents cumulative and periodic data in tabular and graphical forms, and allows the data to be exported for spreadsheet analysis.
9. Portfolio investment. Each participant and each company can acquire a stock portfolio of five companies by trading shares through the program's electronic clearinghouse.
10. Mergers and acquisitions. A statutory-takeover feature of the game facilitates mergers and acquisitions, which are incentivized by a shared-experience model and which can be financed by equity and debt.
11. Currency speculation. Companies can target currencies for speculative returns by taking long and short positions.
12. Covered-interest arbitrage. Companies can arbitrage interest rates by entering into currency swaps.
13. Scheduling a new life. Within specified limits, participants can specify the period when their current life cycle will end and a new one will begin. Life transitions are essential for a vibrant stock market, and con-

trol of transition timing incentivizes life-cycle planning.

14. Migration. Participants can migrate to the nation whose economic policy they find most appealing, choosing from among nations with strategic-trade, free -trade, export-promotion, and managed-trade policies.
15. Continuous voting on national policies. Participants can propose domestic policies, and citizens of the managed-trade nation can propose trade policies. These policies are automatically clustered and selected in a democratic continuous-voting process.

Details on notable features of GEO are discussed in the simulation and gaming literature. A thumbnail sketch of GEO's basic features appears in Thavikulwat (2010); the rationale for the group-assignment procedure of the game is explained in Thavikulwat and Chang (2010, 2012); characteristics of its product market are described in Thavikulwat (1997), in Thavikulwat, Chang, and Yu (2009), and in Thavikulwat and Chang (2011); the shared-experience model that incentivizes mergers and acquisitions is described in Thavikulwat, Chang, and Sanford (2008); an exposition on the application of life spans and life cycles in a business game is given in Thavikulwat (in press); and GEO's process of continuous voting is explained in Thavikulwat (2009). The features of GEO are open for examination and the academic use of GEO is free.

REFERENCES

Thavikulwat, P. (1997). Real markets in computerized top-management gaming simulations designed for assessment. *Simulation & Gaming, 28*, 276-285.

Thavikulwat, P. 2009. Social choice in a computer-assisted simulation. *Simulation & Gaming, 40,* 488-512.

Thavikulwat, P. (2010). GEO: An entrepreneurship-oriented computer-assisted international strategy simulation. *Developments in Business Simulation and Experiential Learning, 37*, 327-328. [Available from http:// www.absel.org]

Thavikulwat, P. (in press). Life span as the measure of performance and learning in a business gaming simulation. *Simulation & Gaming*. [Available from http:// sag.sagepub.com/]

Thavikulwat, P., & Chang, J. 2010. Pick your group size: A better procedure to resolve the free-rider problem in a business simulation. *Developments in Business Simulation and Experiential Learning, 37*, 14-22. [Available from http://www.absel.org]

Thavikulwat, P., & Chang, J. (2011). Effect on market performance of displaying supply and demand curves in a business simulation. *Developments in Business Simulation and Experiential Learning, 38*, 148-159. [Available from http://www.absel.org]

Thavikulwat, P., & Chang, J. (2012). Two Free-Rider-Accepting Methods of Organizing Groups for a Business Game. *Developments in Business Simulation and Experiential Learning, 39,* this issue.

Thavikulwat, P., Chang, J., & Sanford, D. (2008). Shared experience as incentive for horizontal integration in business simulations. *Developments in Business Simulation and Experiential Learning, 35*, 212-219. [Available from http://www.absel.org]

Thavikulwat, P., Chang, J., & Yu, B. (2009). Mitigating the winner's curse in the auction market of a computer-assisted business gaming simulation. *Developments in Business Simulation and Experiential Learning, 36*, 205-212. [Available from http://www.absel.org]