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Firm: George Mason University's IFREE Department

Mentor: Professor Bart J. Wilson

Title: Creating and Implementing an Interactive Economic Management Simulation Using Monopolies

Background:

A monopoly, for the uninitiated, is a business that has 100% market share, i. e., they have no competitors. However, this does not guarantee a profit, because even though monopolies control price and amount on the market, they do not control demand. If the price is too high, the buyers will refuse to buy; if the price is too low, the monopoly won't make a profit. A wise monopoly is able to adjust its production to a point where all units are being sold and the buyers are paying the highest price they are willing to pay.

Do monopolies work in real life as they do in theory? This is one of the many questions asked by experimental economits, who test the theoretical models in real life. Driven by money (test subjects are paid according to performance in GMU's experiments) test subjects should quickly find out what really is most profitable for a monopoly. There are two key components to deciding how many units to sell: Marginal cost and marginal revenue. The marginal revenue is how much the consumer is willing to pay for the next unit. The marginal cost is how much it costs to produce the next unit. As long as marginal revenue exceeds marginal cost, the monopolist will produce that unit. However, if it costs more to produce a unit than can be made from its sale, the unit will not be produced. In theory, marginal revenue should equal marginal cost at the last produced unit. There is also a fixed cost to consider, which is factored into the marginal cost of each unit. Credit to Monopoly, at http://homepage.mac.com/stray/ib/economics/businessstructures.pdf

Description:

I will create a GUI in Java, in which a user will be in complete control of a monopoly. They will have to control production and management of resources for their business. The profit incentive is the carrrot; in most of Professor Wilson's experiments, experimentors are paid according to how well they perform in the simulation. With any luck, a monopoly "signature" can be found, that identifies the natural equilbrium at which a monopoly makes the most money. A simulation simplifies so many of the motivations of monopolists. One person controlling the resources on a computer is a drastic oversimplification of multi-national corporations, and as such the resulting data may not be exact. The subjects, as well, may not think the same way that monopolists think. However,

despite these downfalls, I think that there is still infomation to be obtained and lessons to be learned.