Pepulator Pricing Exercise

Teacher's Package

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Teaching Notes

Pepulator is a two-team, multiple round, prisoner's dilemma, pricing game.

Overview

Two giant companies control the pepulator market: Pulsar Pepulator and Consolidated Pepulator. The monthly profits of both companies are determined solely by the price each charges and how it compares to the price of its competitor. Participants in this exercise act as the board of directors for each company, determining their company's price for pepulators for each of several months. They are instructed that maximizing profits is their sole objective.

Mechanics

Time Required: 0-15 minutes to prepare.
2-3 hours to play and debrief (12-round version)
1 1/2-2 hours to play and debrief (8-round version)

Group Size: 4-6 persons

Materials: General instructions and score sheets
Monthly price report message forms

Procedure

This exercise can be played two ways: as an eight-round exercise or a 12-round exercise. If you are playing the 12-round version of this game, it is important that the players believe they are playing only an eight-round exercise. Therefore, do not pass out round counts or score sheets for rounds nine through 12 until after the discussion of rounds one through eight. If at any time a participant asks whether the game will continue after round eight, a suggested response is that your role is one of "messenger" only, and that they have all the information they need with which to do the exercise.

1. Divide the class into pairs of teams, with four to six people on each team. Each pair of teams plays an independent game.

2. Within each game, one team will represent Consolidated Pepulator, and the other will represent Pulsar Pepulator. Set the teams in separate rooms, or on opposite sides of a large room, preferably with a moveable divider. The teams should be told not to communicate with each other except when and in the manner instructed.

3. Distribute the Pepulator Pricing Exercise and Score Sheet to each person and allow time for everyone to read it (about 10 minutes). Explain that, as indicated, there will be eight rounds of decision making, and that the choice of price should be made round by round. If using a large room with a divider, close the divider now. Note that profits will be cumulative throughout the game. Set a time limit for bids (such as three minutes). If one team fails to hand in a bid, its score will remain the same as for the previous round. If a team fails to bid in round one, its bid will automatically be 20.

4. After participants have had an opportunity to read the case, give each team a few more minutes to organize and discuss strategy.

5. Announce the beginning of round one, instructing each team that it has three minutes to reach a confidential pricing decision for the first month, write its price on a piece of paper, and hand it to the instructor or teaching assistant. In each round, the teams set prices simultaneously; they do not discover the other team's bid until after their own has been set.

6. Exchange the bids between the two teams. Post the bids and record the resulting profits on a large tally sheet.

7. Conduct rounds two and three in the same manner.

8. Before beginning round four, announce that because of unusually favorable market conditions, that a new, even more pro-business administration means that, a) profit figures for this month will be ***doubled***, and b) that there will be a five-minute period during which a representative from each side will be able to meet with a representative from the other side

without fear of antitrust liability or prosecution. Any such meeting must be private and limited to the two representatives. At the end of the deliberations, the representatives return to their groups and round four begins. It lasts three minutes.

9. Announce that the administration is "back to its old ways," and that rounds five and six proceed in the same manner as rounds one through three.

10. Before the beginning of round seven, announce that extraordinary market conditions will mean that, for the next two rounds, in each month profit figures will be ***quadrupled*** for the firm with the larger profit in that month, or for both firms if they have equal profits. Also, as in round four, a conference will be allowed before round seven, but not before round eight.

**Note: If playing the eight-round version of this game, profits should be quadrupled *only* for the team with the larger profit. If the teams have the same profit (i.e., bid the same price), profits will be normal.

11. Allow a second private conference of up to five minutes. Proceed with rounds seven and eight. Prepare the point total.

Discussion (of Part I)

At the conclusion of round eight, instruct each group of six that it may spend the next five to ten minutes discussing the process it has been using for decision making within the group. Ask them to develop two or three specific rules they are prepared to recommend and defend as facilitating wise and efficient group decision making.

Debrief the first eight rounds. (See below.)

Instructions for Part II -- Pepulator as a 12-round game

1. Announce that the exercise will now continue with an additional four rounds. The teams will be the same as in rounds one through eight, and each team will begin round nine with the cumulative total profit it amassed in Part I.

2. Distribute Score Sheets for rounds nine through 12.

3. Send each team back to the location where it made its pricing decisions in Part I. Allow no communications between the teams as they return to their "headquarters."

4. Announce the beginning of round nine, instructing each team that the rules are the same as in Part I.

5. Conduct rounds nine and 10 in the same manner as Part I. Tally team pricing choices and record resulting profits on a large tally sheet.

6. Before beginning round 11, announce that extraordinary market conditions will mean that, for the next two rounds, in each month profit figures will be ***quintupled only*** for the firm with the larger profit in that month; if the two teams end with the same scores, then neither receives the 5X profit. A conference in round four will be allowed before round 11, but not before round 12.

7. Allow a third private conference of up to five minutes. Proceed with rounds 11 and 12. Prepare final point totals and subtotals for Part II.

Debriefing

Collect the prices/profits from each game, and select some interesting games to discuss with the class. In preparation for this discussion, it will be helpful to examine the following examples of typical Pepulator price choices:

ROUND	GAME A		GAME B		GAME C		GAME D	
	P	C	P	C	P	C	P	C
1	10	20	30	10	10	30	30	30
2	10	10	10	20	20	10	30	10
3	30	10	20	20	30	10	10	30
--meeting---	-------		-------		-------		-------	
4	30	30	30	30	30	30	20	30
5	30	30	30	30	30	30	10	20
6	30	30	30	30	30	20	30	10
--meeting---	-------		-------		-------		-------	
7	30	30	30	30	10	30	10	10
8	30	30	30	30	10	10	10	10
9	30	30	30	30	30	30	30	30
10	30	30	30	30	30	30	30	30
--meeting---	-------		-------		-------		-------	
11	30	30	10	30	30	30	20	30
12	30	30	10	10	30	30	10	10

It's usually best to debrief the games one at a time, proceeding round by round. A representative of each team can be asked to explain the team's thinking after each round.

Goals/Strategies

- What was your goal?
- What were the strategies of each team?
- Did those strategies change at any point?

Communication

- What message did you think you were sending when you bid 20? (Then, to the other team.)
- What message did you think you were getting when you received the other team's bid of 20?

Group Decision Making

- Did everyone in the group agree on every price choice?
- How was dissent accommodated within the group?
- Did the group form coalitions for/against particular pricing strategies at any point?
- What rules or guidelines would each group now recommend for facilitating wise and efficient group decision making?

Relationships Between the Groups

- How did each team respond to a breach of trust by the other team (if this occurred)?
- Although there were no discussions preceding six of the eight rounds, was there a means of communication available between the two groups?
- How did the other team's previous choices influence subsequent decisions?
- What are the forces for competition and collaboration?
- Does the game *really* end after round eight? After round 12?

Role of the Representatives

- What did the representatives discuss? What was the agreement? How firm was the commitment?
- Did each group honor agreements arrived at by its representative? Why or why not?
- What are the stresses and strains of a person in a representative role?
- What strategy did representatives have for negotiating within their own teams?

The consequences of cooperation (Games A and C) versus competition (Games B and D) become obvious. Teams that choose to compete will find themselves making decisions in an atmosphere of mutual mistrust and anxiety about their opponent's next move. Once trust is lost they will become resigned to a future of competitive mistrust. They will search for ways to regain lost trust, usually without success.

A breach of trust in an early round can have a profound effect on team strategies for future rounds. See, for example, Games B and D. The resulting mistrust may never be overcome, particularly if there is a second breach. Team representatives will find themselves assigned the unenviable task of making promises that they know their teams have no intention of keeping, and they will find themselves outvoted when they attempt to convince their teammates that honoring their promise is more important than increased profits.

Pepulator also provides insights into participants' ideas of what constitutes a good outcome to a negotiation and what consequences that has. Some teams will say that they bid 30 the first round in order to maximize long-term profit; others will cite the same reason for bidding 20 or 10. Some will claim their goal was "to win," "to beat the other side," "to avoid losing," "to protect our reputation," etc. Acting in pursuit of these rather narrow goals, some groups learn that their chosen strategies actually undermined their goals.

Possible lectures that expand on some of the Pepulator themes are:

<u>The dynamics of escalation:</u>

Selective perception, self-fulfilling prophecy, over-commitment, entrapment.
Pruitt and Rubin (pp. 111-138)

<u>Dirty tricks and how to deal with them:</u>

Deliberate deception, phony facts, ambiguous authority, dubious intentions, psychological warfare.
Fisher and Ury (pp. 134-149)

<u>Axelrod's computer experiment on the prisoner's dilemma:</u>

The tit for tat strategy
*be clear
*be nice
*be provokable
*be forgiving

But note that Axelrod's experiment is premised on no communication except for the choice of trust or defect, and on no ongoing relationship between the parties outside the game. Query whether the opportunity for communication and the fact of ongoing relationships undermine the generality of Axelrod's argument as applied to negotiation.

Pepulator Pricing Exercise

General Instructions

The Pepulator market is entirely controlled by two giants of the industry: Pulsar Pepulator Co. and Consolidated Pepulator, Inc. Each company currently has 50% of the entire market of pepulators.

Both companies are now selling their pepulators at a unit price of $20. So long as they sell at the same unit price, each company can expect to retain its market share. But if one company sells at a lower price than the other, it will expand its market share and increase its profits at the expense of the other company. However, both firms are large, and neither can realistically expect to put the other out of business by undercutting the other's price for a few months.

You are a member of the board of one of these two companies. Each month for the next eight months you will be asked to set that month's price for your firm's pepulators. Your goal is to maximize your firm's profits. You are entirely indifferent to the profits of the other firm. Your company's stockholders care only about your firm's profits and do not consider market share *per se*, or the profits of the other firm, to be relevant.

Market research has revealed that your firm's monthly profits will depend on the price you set and the price your competitor sets. However, uncontrollable market forces render it unprofitable for either firm to raise its price above $30. The exact price-to-price matrix that each firm sets is as follows:

Profit Schedule

Key:

Our Profit Their Profit

Our Price

Their Price	$30	$20	$10
$30	110 110	180 20	150 20
$20	20 180	80 80	150 30
$10	20 150	30 150	50 50

In this great nation of Conservation, antitrust laws still exist, but are enforced, if at all, only in cases where agreement on price fixing is overt (i.e., manifested by some explicit communication prior to the setting of prices). There is no danger of antitrust prosecution for merely anticipating or reacting to the pricing decision of the other firm.

Remember that your goal is to maximize your own firm's profits. For advertising simplicity, your price choice is limited to a multiple of $10.

Score Sheet

Profit Record

Round	Price Chosen		Profit for Month		Cuml. Total Profit	
	Pulsar	Consol.	Pulsar	Consol.	Pulsar	Consol.
1	_____	_____	_____	_____	_____	_____
2	_____	_____	_____	_____	_____	_____
3	_____	_____	_____	_____	_____	_____
4	_____	_____	_____	_____	_____	_____
5	_____	_____	_____	_____	_____	_____
6	_____	_____	_____	_____	_____	_____
7	_____	_____	_____	_____	_____	_____
8	_____	_____	_____	_____	_____	_____

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Score Sheet

(Rounds 9-12)

Round	**Price Chosen**		**Profit for Month**		**Cuml. Total Profit**	
	Pulsar	Consol.	Pulsar	Consol.	Pulsar	Consol.
1 - 8					_____	_____
9	_____	_____	_____	_____	_____	_____
10	_____	_____	_____	_____	_____	_____
11	_____	_____	_____	_____	_____	_____
12	_____	_____	_____	_____	_____	_____
Cumulative Total Profit Rounds 9-12					_____	_____

PULSAR

Table Letter _______________

Round # __________________

Price $______________

PULSAR

Table Letter _______________

Round # __________________

Price $ _____________

PULSAR

Table Letter _______________

Round # __________________

Price $______________

PULSAR

Table Letter _______________

Round # __________________

Price $______________

CONSOLIDATED

Table Letter _______________

Round # __________________

Price $______________

CONSOLIDATED

Table Letter _______________

Round # __________________

Price $ _____________

CONSOLIDATED

Table Letter _______________

Round # __________________

Price $______________

CONSOLIDATED

Table Letter _______________

Round # __________________

Price $______________