## Negotiation Simulation:

# OPEQ

**FOR COURSES IN:**

- Negotiation
- Economics

Developed by:

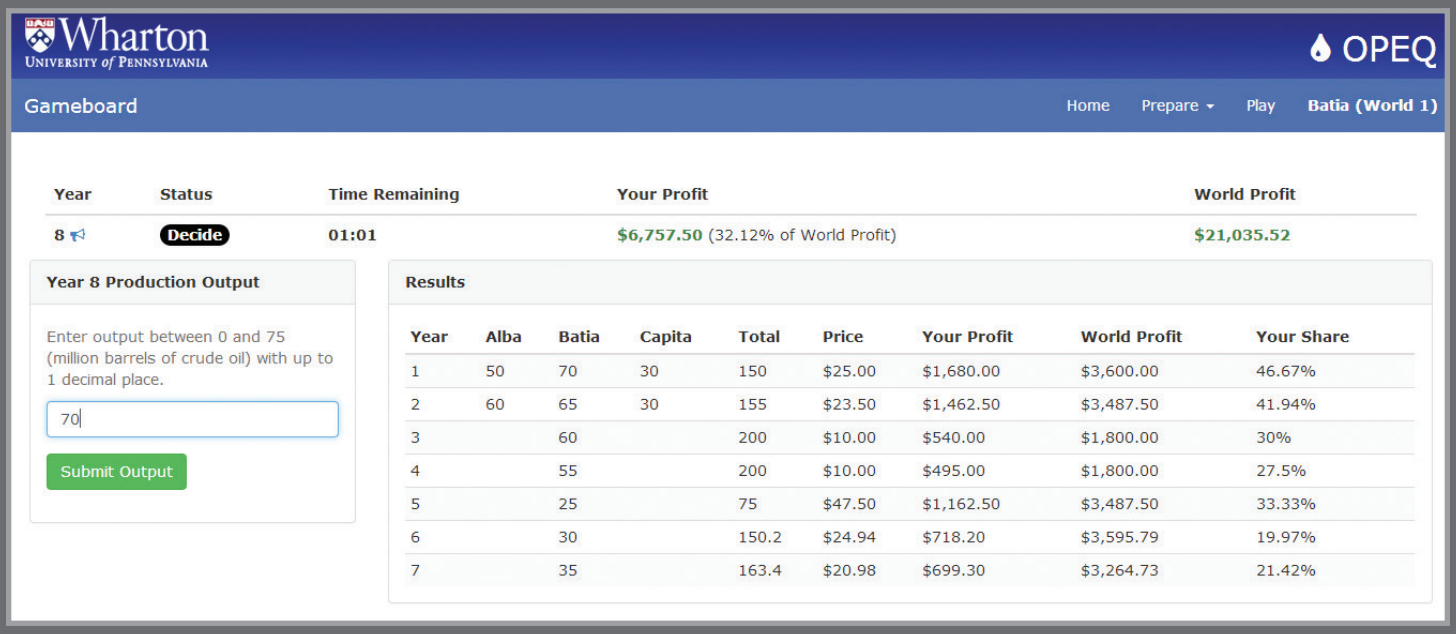
Wharton
University of Pennsylvania

HARVARD BUSINESS PUBLISHING

# Negotiation Simulation: OPEQ

**This multi-player simulation immerses students in the complex world of oligopical oil pricing.** As member nations of "OPEQ," teams of students are tasked with setting petroleum production levels with competing countries in order to maximize their cumulative profits.

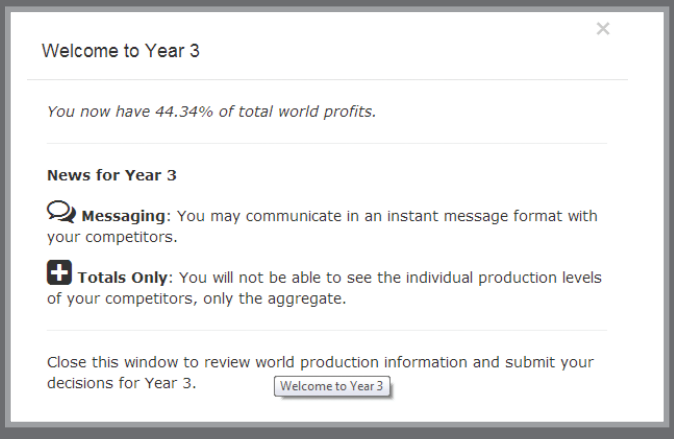
The simulation allows students to explore the dynamics of cartels and competition, negotiation, best response, the Nash equilibrium, and a variety of other negotiation and economic principles.




*Students enter production levels, communicate with other teams, and view results from the Gameboard screen.*

## TEAM PLAY

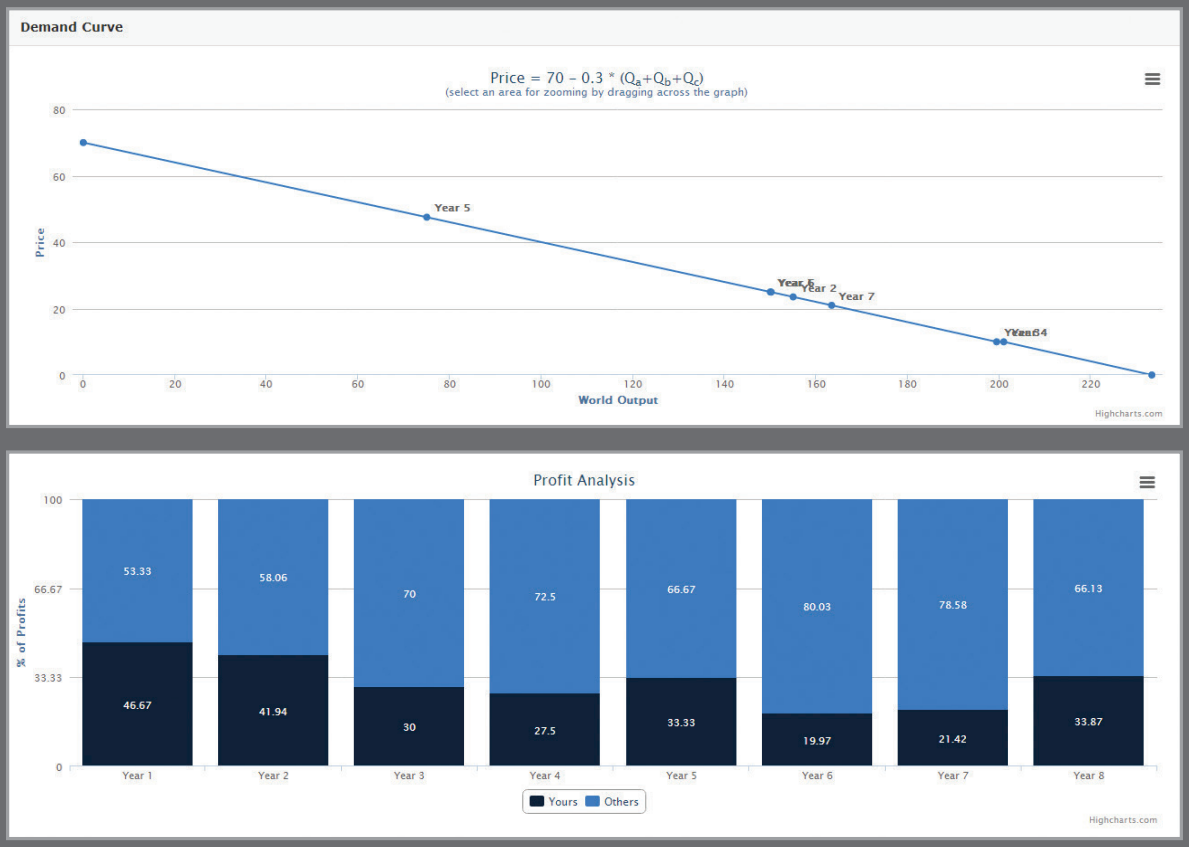
Students are organized into small teams, each representing a different fictional country (Alba, Batia, or Capita). There are 3 countries in a world, and there may be several autonomous worlds in play depending on the class size. Teams play in physical isolation from their competitors, working to set the ideal production levels for each round. The rounds are timed, and the 3 teams have an opportunity to communicate with each other in designated rounds, either through the simulation chat window or a face-to-face meeting.




*News updates inform students of any new activities or conditions for each round.*

## COOPERATION AND COMPETITION

The simulation gives students critical insight into the mechanics of cooperation. As in many real-world contexts, cooperation in the Negotiation Simulation: OPEQ has great benefits. Individuals or individual groups have incentives to defect, however, as they struggle to maximize their own profits amid limited information and an increasingly complex market. Students learn how the dynamics of communication, team monitoring, end-game effects, trust, and inequality affect cooperation. The simulation demonstrates how managing cooperative relationships is a difficult, but critical, managerial challenge.




*The Demand Curve and Profit Analysis charts plot country and world results by year.*

## GAME THEORY

This simulation can also be used to teach students game theory. The teams make decisions as part of an oligopoly market structure. Students should compute best-response functions and the Nash equilibrium. The repeated nature of the game can also be used to discuss backward induction.

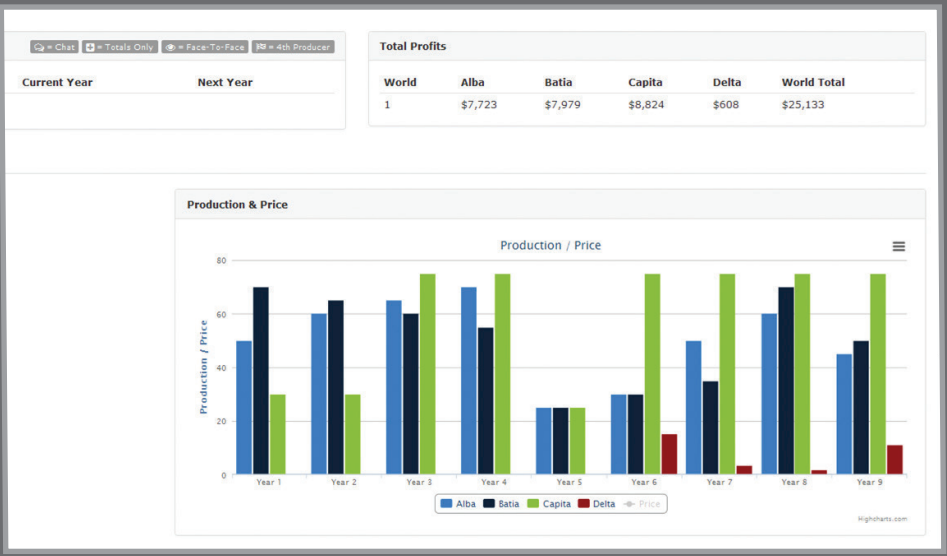
## SETUP AND CUSTOMIZATION

The simulation has easy-to-use defaults for first-time users, but it is also highly customizable. Instructors can customize simulation length, the number of players per team, the number of rounds and round duration, production variance, the occurrence of online and face-to-face communications, and when an automated producer will unexpectedly enter the market.

# Key learning objectives

**A comprehensive Teaching Note covers key learning objectives, including:**

- Explore oligopoly market structures with a focus on game theory, the Nash equilibrium, and best-response functions.
- Illustrate the dynamics of cooperation and competition, as well as the tension between self-interest and maximizing cumulative profits.
- Exercise strategic negotiating and communication skills to achieve optimal results in a competitive environment.
- Observe the fluctuations of price and profit in a competitive world marketplace.




*The Administrator Gameboard is constantly refreshed with student results by country, year, and world.*

By Maurice Schweitzer, The Wharton School, University of Pennsylvania

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