What is this course about?

- The interactions of multiple players (decision makers) and the resulting dynamics in a market environment
  - Suppliers, manufacturers, retailers, consumers, etc.
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- The interactions of multiple players (decision makers) and the resulting dynamics in a market environment
  - Suppliers, manufacturers, retailers, consumers, etc.
- **Strategic** behavior: Each player in the market acts on self-interest, e.g., tries to maximize its own profit
- In choosing an action, a player considers the potential responses/reactions of other players
- Main tool for analysis: Game Theory
**Intel vs. AMD**

- Advanced Micro Devices (AMD) has slashed prices of its desktop and mobile Athlon processors just days after a similar move by rival Intel. "We're going to do what it takes to stay competitive" on prices, said an AMD representative. AMD's move is also designed to clear out inventory and make way for faster new desktop and mobile processors. AMD's aggressive price-chopping means the company doesn't want to give up market share gains, even at the cost of losses on the bottom line, analysts said. -- ZDNet News, May 30, 2002

**Intel vs. AMD (cont.)**

- During the first quarter of 2002, AMD increased processor shipments from the fourth quarter of 2001, topping 8 million, but processor revenue declined by 3% sequentially. In effect, the company sold more chips for less money than in the fourth quarter.
Burger King vs. McDonald’s

- Burger King Corp. will put its flagship Whopper hamburger on sale for 99 cents beginning Friday ... The move is likely to intensify and prolong the burger price wars that have been roiling the U.S. fast-food industry in recent months. Burger King officials had said earlier that while they were reluctant to discount the Whopper, they had little choice given a $1 menu at archrival McDonald's Corp. that included a Whopper-like hamburger, called the Big 'N Tasty. – Chicago Sun-Times, January 3, 2003

Tesco vs. Asda

- Tesco announced plans to slash £80 million from prices of more than 1,000 products, with some prices falling by more than 30%. The cuts came as rival Asda also said it was slashing selected prices. The cuts echo memories of the supermarket price wars played out in 1999 as stores fought to capture more customers and increased market share. News of the price cuts raise fears that Sainsbury's and Safeway would lose market share this year to Tesco. – Sunday Telegraph, January 5, 2003
U.S. Auto manufacturing

- Through June 7, 2002, U.S. vehicle output was up 7.7% from a year ago (Ward's Automotive Reports)
  - GM's second-quarter production is up 12% from a year ago. The company says third-quarter output will increase 0.6%.
  - Ford's second-quarter production is up 4%, and the company expects the third quarter to be up 16%.
  - DaimlerChrysler's Chrysler Group but said production through May 2002 is up 3.2%.
- Analysts warn that automakers may end up spending more on rebate deals in late summer to clear out too many cars being built now. – USA Today, June 14, 2002

Oil production

- OPEC decided to slash its crude oil production by 1.5 million barrels a day (6%).
  The issue came to a head this autumn as the weakening world economy, together with the uncertainty caused by the Sept. 11 attacks on the United States, dragged down prices some 30 percent.
  ... The cut is expected to lift OPEC's benchmark price to $22 a barrel - the group's minimum target price.
- Rival, independent producers such as Russia and Norway promised reciprocal cuts that were smaller than expected. OPEC, which has already reduced its official production by 3.5 million barrels a day this year, is weary of doing so only to see producers outside the group increase their market share as a result.
**Players in a supply chain**

- Suppliers
- Manufacturing
- Warehousing
- Distribution
- Customers

**Horizontal interactions**

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**Blockbuster and movie studios**

- **Q**: Order qty
- **W**: Wholesale price
- **Rental fee**
- **Demand**

- **Studio (supplier)**
- **Blockbuster (retailer)**

**Before 1998:** $W = 65.
- Peak demand usually lasts <10 weeks; breakeven ~22 rentals
- Low inventory, stock-outs: 20% of customers were unable to rent the movie they wanted

**After 1998:** $W = 8, Blockbuster gives 30-45% of the revenues back to the studio
- Stockouts dropped, Blockbuster increased its overall market share from 25% to 31% and its cash flow by 61%

**Win-win situation for all parties involved**
Players in a supply chain

Vertical interactions

Horizontal interactions

Suppliers
Manufacturers/Retailers
Warehousing
Distribution
Customers

ISYE 6230 - Course objectives

- Understand the impact of market structure on the strategic interaction of the players and the resulting outcome
  - Parameters: number and type of firms, or products, contracts, consumer preferences, etc.
  - Players: Firms, consumers, government, etc.
  - Outcome: Profits of the firms, surplus of the consumers, total quantity produced and sold in the market, etc.