Lecture 7 Game Plan

- More on strategic substitutes and complements
- Application to Entry: Ryan Air
- Strategic exercise of real options
Systems and Product Compatibility

- Tape deck + speaker = sound system
- Two firms produce both tape decks and speakers.
- First, firms decide whether or not to allow for compatibility
  - products are compatible if both allow for it
- Second, firms compete on price
Sound System Consumers

- Each firm’s products are described as corners of a square.
- Consumers are represented as points in the square.
- Each consumer buys from whatever firm has lowest \( \text{price} + \text{distance} \).
  - “\text{distance}” captures comparative preference for the products.
Incompatible Competition

- Consumers in upper-left and lower-right prefer to mix and match.

\begin{itemize}
  \item GREEN SPEAKER
  \item RED SPEAKER
  \item RED TAPE-DECK
  \item GREEN TAPE-DECK
\end{itemize}

- Red represents consumers who buy from firm 1.
- Green represents firm 1’s products.
Compatible Competition

- Consumers are better matched in regions
- AND price competition is less intense
Compatible Competition

Less Intense

- When firm 1 lowers price of RED SPEAKER, it raises demand for GREEN TAPE-DECK
  - tends to lead GREEN to raise its price

- Under incompatibility, lowering price of RED SPEAKER lowers GREEN TAPE-DECK demand

- The firms appear to have a common interest in compatibility
Incompatibility & Exit

- Previous discussion implicitly assumed entrenched firms
- If firm 1 wants to drive firm 2 out of the market (or deter entry), compatibility is a bad approach since it increases both firms’ payoffs
Strategies to Induce Exit in Competitive Games

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<tr>
<th>Strategic Complements</th>
<th>More Makes You Tougher</th>
<th>More Makes You Softer</th>
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<td><strong>Top Dog</strong></td>
<td><strong>Lean &amp; Hungry</strong></td>
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Reliance Games

- Conclusions for competitive games apply to reliance games, except “flipped”
  - to induce entry, do whatever makes you more aggressive
“The wise win before they fight, while the ignorant fight to win.”

-Zhuge Liang, chief military strategist, Shu Kingdom, 200 AD
Real Options

- Entering a new market
  - Option to enter later

- Investments in large, risky projects
  - Option to delay and to stop

- New technologies: multi-stage option
  - R&D $\rightarrow$ patent $\rightarrow$ testing $\rightarrow$ pilot $\rightarrow$
Parking Lots

- You own an unprofitable undeveloped parking lot downtown
- Additional parking revenues would be more than sufficient to cover costs of building a multi-level parking garage
- Building a garage is a no-brainer, right?
A Tale of Two Parking Lots

- Another undeveloped lot sits right next to yours
- Does the presence of this other lot make you more or less eager to build an office building on your land?
Strategic Incentives to Exercise Real Options

- First-mover effect that we’ve seen before
  → Want to move first exactly when:
    - investments are strategic substitutes OR
    - investments are strategic complements and reaction curves have slope > 1

- Informational benefit of observing others’ investment
  → Want to move last
    - others’ decision to invest is “good news” about their information
      - first-mover suffers Winner’s Curse, see Lecture 9
    - outcome of investment also informative
Exercising Cascades

- When others exercise an option this reveals *positive* information

- Furthermore:
  - more *information* $\rightarrow$ less option value $\rightarrow$ others more likely to exercise

- This can lead to cascades in which many firms follow an early exerciser
  - Example: “Miracle on Sixth Avenue”
Summary

- When considering entering a market
  - anticipate and control incumbents’ incentive to retaliate
  - consider how your entry may change followers’ decision whether/how to enter themselves
In-Class Game Next Time

- Please prepare for “Angry Negotiation” to be played next class
- See handout