

Study Guide (Key Concepts): Second Quiz
Economics 685: Managerial Economics
Notes

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BUSINESS STRATEGY

I Framework: Two Person Games

A Payoff matrix

B Dominant Strategy

Compute the optimal strategy for each of the possible strategies of the opponent. The strategy is dominant if the optimal strategy is the same for all possible strategies of the opponent.

C Nash Equilibrium

1. Predict a strategy for any player.
2. Compute the optimal strategy of the other player, given the prediction.
3. Compute the optimal strategy of the first player, given the optimal strategy of the other player. If the strategy is identical to the predicted strategy, then the strategies constitute a Nash Equilibrium.

II Some Simple Games

A Anti-Coordination Games: to compete or not?

B Coordination Games

C Mixed Coordination and Anti-Coordination

Advantages of coordinating (competing) or not coordinating (not competing).

1. Coordinate by locating near competitors to draw shoppers to the area.
2. Coordinate by locating near competitors if (even with two competitors) demand in the area is better than other areas.

3. Coordinate if differentiating your product and being wrong about customer preferences yields more losses than the gains from being right about customer preferences.
4. Coordinate only if incumbant firms will not react forcefully to your entry.

D Prisoners Dilemmas

A prisoner's dilemma is one in which the optimal outcome for both firms is to cooperate and not compete, but incentives result in firms cheating, leading to the worst possible outcome for both firms.

1 Cartels and Cheating

The incentive to cheat in cartels is very strong.

2 Price Matching Offers

By offering to match prices, firms decrease the incentive for other firms to cheat on a cartel agreement.

III Mixed Strategies

- When each player has an interest in disguising their actions, it is often optimal to choose a random or mixed strategy.
- To compute a mixed strategy, assume a player plays each possible strategy with a random probability. Then compute the probability that makes the opponent indifferent between his/her possible strategies.

A Using Mixed Strategies to Prevent Opponents From Reacting

Sellers randomize when sales occur so that customers cannot react by shopping only when sales occur.

B Using Mixed Strategies to Avoid Coordination

- A mixed strategy usually exists in games where each player wants to avoid coordinating with the other players.
- Mixed strategies here give on average a worse outcome since players sometimes accidentally coordinate.

IV Dynamic Games

A Finite Repeated Games

Skipped.

B Infinitely Repeated Games

Skipped.

C Sequential Games

1 Extensive Form

To find the sub game perfect equilibrium, start at the last move and find the optimal strategy at each node. Then work backward to the beginning, finding the optimal strategy at each node. The sub game perfect equilibrium is the outcome where the optimal strategy is chosen at each node.

D Entry and Exit

- Threats to retaliate are generally credible only if it is optimal to carry out the threat. If not, the opposing player can act with impunity, knowing that it is not in the opposing player's best interest to retaliate.
- Pre-emptive actions are much more effective than retaliation. By taking an action earlier in the game, players can avoid the credibility problem.
- Adding capacity to deter entry is a common pre-emptive action.