Topic 6: Competitive Interactions

Multinational Corporations in Asia

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Outline of this lecture

- Motivating examples
- Key concepts
  - Strategic Complementarity
  - First-mover Advantage
- Multinational location games

Some examples: BMW and Mercedes

- In 1990 both BMW and Mercedes served the world's largest auto market using their factories in Germany
- During 1990, both companies established factories in U.S.
- The following time-line shows when the factories were established and also how BMW altered its production plans
  - 1992.- BMW picks South Carolina as the site for a car production plant
  - 1993.- Mercedes announces it will build SUVs in Alabama
  - 1994-1995.- BMW produce Z3 roadster and 318i.
  - 1997.- Mercedes begins M-class production
  - 1998.- BMW decides to expand its plan and start producing SUVs.

Some examples: BMW and Mercedes

- Mercedes seemed to follow its rival BMW in producing cars in U.S. However, BMW followed Mercedes in producing an SUV there.

Some examples: Retail in China

- 1995 Carrefour (France) set up hyper-store in Beijing
- 1996 Walmart (USA) established super-center in Shenzhen
- 1996 Metro (Germany) opened first store in Shanghai
- Q: timing and location of their entries?

Retail in China

- Walmart (#1) , Carrefour(#2), and Metro (#3) have all entered in China, the largest retail market in the world
- Carrefour was the first to arrive, setting up the first "hyper-store" in Beijing, 1995.
- In 1996 Walmart established its first super-center in Shenzhen.
- Also in 1996, Metro opened its first store in Shanghai.
- As of 2006, the first mover, Carrefour had the largest presence, with 70 hypermarkets and 225 discount stores.

Location distribution: Carrefour vs Walmart (2010)

- Red and Yellow: more than 10 stores within the province.
- Q: Why do they co-locate in some places while separate in others?
- Q: Is there first-mover advantage?

Key Concepts: Overview

- Strategic Complementarity: the payoff to a firm of some action increases when similar action is taken by the other firm
- First Mover Advantages: the firm that acts first obtains a lasting advantage over subsequent imitators
- Strategic complementarity is important for deciding whether to invest in a region or not. The presence of first-mover advantages determines the optimal timing of entry into region.

Strategic Complementarity

- The decisions of two or more players are called strategic complements if they mutually reinforce one another.
- i.e., if you do more of something, the payoff for me of doing that thing increases.
- Example: Location decisions would be strategic complements for Japanese automakers if Honda's decision to manufacture in some country made that place more attractive to Toyota.
- Q: What are the sources of strategic complementarity?

Sources of strategic complementarity:

- **Agglomeration economics**: groups of related firms often perform better when they choose geographically proximate locations
  - Knowledge spillover
  - Subsidiary industries
  - Specialized labor
- **Information herding**: choices made by others may reveal information they gathered on the attractiveness of a location
  - restaurant search in an unfamiliar city?
- **Oligopolistic reaction**: follower matches leader's move to maintain competitive stability

Strategic Substitution

- Reverse oligopolistic reaction: firms could do better by choosing different production locations due to *market crowding effects*
- Market crowding effect is stronger for goods that are undifferentiated
- If market crowding effect are strong relative to agglomeration effect, then firms location decisions can be **strategic substitutes** instead of strategic complements

Common Cause

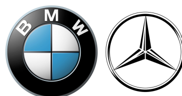
- Neither strategic complementarity nor substitute, but the existence of a local attraction that appeals to all potential entrants
  - The existence of a common cause driving location decisions can mask the assistance of strategic substitutions (e.g. a gas station)
  - It could also give the appearance of strong strategic complementarity even when those effects are weaker or absent

- First-mover advantages exist if you obtain a lasting advantage over your rivals by being the first one to do something.
- What are the sources of First-mover Advantage?

- Sources of First-mover Advantage
  - Scarce resource preemption: In a "first-come, first-serve" situation, the early firm seizes the most prized resources and later movers have to settle for less attractive alternatives
  - Consumer switching cost: the amount a customer who has being buying from a given seller must give up (in time, money, or expected benefits) in order to switch to a different seller's product

- Presentation: 30 minutes
  - clarification questions allowed
- 10 minutes for listeners to write down comments and questions
  - critical and constructive
- 2 opportunities to share your comments or ask the question to the presenter.
  - voluntarily or chosen by the presenter
- *Each* student is expected to comment for two presentations.

Multinational Location Games



Mercedes vs. BMW

- Q: Where to place factories to assemble their new SUVs?
- Germany: close to parts suppliers and their main design engineers
- USA: save trade costs by locating within the major markets
- Assumption: each firm will only have a single factory

Mercedes vs. BMW: Symmetric case

BMW	Mercedes			
	U.S.A.		Germany	
U.S.A.	1	1	2	2
Germany	2	2	1	1

- Nash Equilibrium is a set of strategies with corresponding payoffs where no player can benefit by changing her strategy while the other players keep their strategies unchanged.
- **Market crowding effect**: when both firms choose the same location, profits are reduced.
- Strategic substitution implies *following* is a bad choice.

Mercedes vs. BMW: USA better location

BMW	Mercedes			
	U.S.A.		Germany	
U.S.A.	2	2	4	3
Germany	3	4	1	1

- Market Crowding Effect (MCE)?
- If both firms choose locations *simultaneously*, (USA,Germany) and (Germany,USA) are both Nash equilibria.
- If firms choose locations *sequentially*, the first mover chooses the U.S., and the second mover chooses Germany.
- Location difference and MCE imply first-mover advantage.

Mercedes vs. BMW: USA *much* better location

BMW	Mercedes			
	U.S.A.		Germany	
U.S.A.	4	4	6	3
Germany	3	6	1	1

- Strengthen the inherent advantage of the USA.
- Market Crowding Effects remain but not strong enough to separate firms.
- Choosing the USA is the dominant strategy for both firms.

Mercedes vs. BMW: Agglomeration effects

BMW	Mercedes			
	U.S.A.		Germany	
U.S.A.	4	4	2	1
Germany	1	2	3	3

- The new payoffs exhibit strategic complementarity.
- This is known as a "coordination game": the firms will collaborate to choose the ideal location (the U.S.).

Mercedes vs. BMW: Agglomeration with asymmetric preferences

BMW	Mercedes			
	U.S.A.		Germany	
U.S.A.	4	3	2	1
Germany	1	2	3	4

- Mercedes prefers Germany while BMW prefers the USA.
- If Mercedes moves first, it chooses Germany (payoff=4). Then BMW, moving second, also chooses Germany (payoff=3), but this is BMW's less preferred location.
- Thus there is a clear **first-mover advantage**.

Should a firm imitate its competitor's location choice?

1. **How strong are market crowding effects?**
   - Greater proximity results in stronger price competition.
   - More competition makes more "space" between competitors desirable: separate locations are better.
2. **How strong are agglomeration effects?**
   - Co-location may generate agglomeration effects.
   - Co-location is desirable if there are benefits from information sharing, infrastructure sharing, or joint input demands that stimulate growth of local supplier networks.
3. **How similar are preferences about location?**
   - Heterogeneity in location preferences (e.g., through different requirements in comparative advantage) will lead to separate location choices.
   - Homogeneity in location preferences will lead to co-location.

Takeaways: Competitive Interactions

- MNE location choices not only depend on the four elements but also choices of its competitors.
- The decisions of two or more players are called strategic complements if they mutually reinforce one another.
- Strategic complements drives firms to co-locate while *market crowding effect* forces them apart.
- First-mover advantages exist if you obtain a lasting advantage over your rivals by being the first one to do something.
- Payoff matrix could help use analyze the Multinational Location Games.
- Imitating your competitor's location choices or not depends on how strong are market crowding effects, agglomeration effects and similarity in preferences.