

Coordination Games

Competitive Strategy, Lecture 9

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Overview of Today

- What are network effects?
- How do they affect equilibria?
- How do they affect strategy?

Warm-Up Definitions

- User's WTP depends on how many others have adopted
 - Effects increase with the size of the network
- Markets dominated by bringing people together
 - Exchange of ideas
 - Transmission of data
 - Meeting place for buyers and sellers
 - Physical or digital (Zoom!)

Networks, Networks Everywhere

- Direct Effects: User cares directly whether other users adopt
 - Common in communication protocols
 - Telephone, fax, instant message, languages, WUPHF
- Indirect Effects: Cares through its effect on supply of complements
 - Supply of movies on format is influenced by popularity of format
 - Software, music, video games...

Coordination Games

		<u>User 2</u>	
		Join	Don't
User 1	Join	(1, 1)	(-1, 0)
	Don't	(0, -1)	(0, 0)

Network Competition

		<u>User 2</u>	
		Join	Don't
User 1	Join	(3, 3)	(-1, 0)
	Don't	(0, -1)	(1, 1)

Implications: Standards and Lock-In

- Standards are valuable when network externalities exist
 - Standards may be market-determined, “de facto standards”
 - ...or determined via regulation, “de jure standards”
 - Competition becomes between standards
- Coordination problems leads to standards inertia
 - Example: QWERTY keyboard (1873)
 - Designed to avoid jams in old technology
 - Dvorak keyboard (1932): faster, more comfortable
 - But QWERTY standard reinforced by user knowledge

Targeting Early Adopters

<u>User 1</u>	<u>User 2</u>	
Join	Join	(3, 3)
	Don't	(-1, 0)
Don't	Join	(0, -1)
	Don't	(1, 1)

Subsidizing Adoption

		<u>User 2</u>	
		Join	Don't
User 1	Join	(3, 3)	(2, 0)
	Don't	(0, -1)	(1, 1)

Implications: Expectations and Tipping

- Consumers expectations key in adoption
 - Apple/Android/Microsoft in Mobile OS
 - Microsoft expert in vaporware in the 1990s
- Tipping competition
 - Leaders: facilitate this, be ready to scale quickly
 - Laggards: impede this, create confusion

The Chicken-and-Egg Problem

- Simple game framework makes clear that
 - “Good” or “best” technologies may not be adopted
 - One user’s adoption choice depends on expectation of others
 - ... So expectations play a big role!
- Firm success depends on **coordination**
 - Often better to be chosen than to be higher quality
 - Coordination efforts often more important than R&D

Managerial Takeaways

- Broad strategies
 - Making decisions **sequential**
 - **Subsidizing** early periods
- Specific actions
 - Aggressively promote brand, product, use, interactions
 - Create and convince early adopters at nearly any cost
 - Segment (think entry strategy, innovation)
 - Subsidize early and profit later
 - Sign-up bonuses, trial periods, direct “bribes”