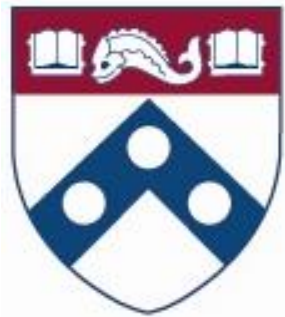

The Development of Platform Competition



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November 7, 2017

Platforms: Often Misunderstood

- Typically analyzed through network effects and two-sided markets
 - Leads to assumption that markets are winner-take-all
 - Can raise concerns about platform leadership
 - Represents an oversimplification of the economics
 - Complexity of offsetting network effects
 - Dynamics of platform formation
 - Decentralized nature of platforms
 - Must be studied from birth, not just post-adoption
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Network Economics and Winner-Take All Markets

- Network externalities do not always lead to lock in
 - Joining a network increases the value of the new network
 - Leaving a network decreases the value of the old network
 - Impact depends on which effect dominates
 - Dynamics can lead to excess inertia *or* excess momentum
- Two-sided markets
 - Equilibrium can yield widely varying prices and subsidies
 - Chicken-egg problem = need to get both sides on board
 - Real relevant market is advertising, not end users

Dynamics of Platform Formation and Change

- Market factors affecting platform formation/change
 - Large differences in value
 - Heterogeneity in preferences
 - Rapid growth, large customers
 - Gateways and reverse compatibility
- Other factors
 - Katz & Shapiro (1986): open vs. proprietary platforms
 - Clark (1985): drag on innovation inherent in design hierarchies

Dynamics of Platform Formation

- Empirical examples
 - Betamax vs. VHS
 - MySpace vs. Facebook
 - HD-DVD vs. BluRay (and replacement of DVDs)
- Insights
 - First mover does not always win
 - Proprietary platforms do not always win
 - Policy implications require empirical validation

Decentralized Nature of Platforms

■ Basic problems

- Positive externalities for complementary markets
- Opportunity to free ride on others' investments
- Fragmentation and systemic drift

■ Solutions

- Katz & Shapiro (1986): allow proprietary platforms
- Teece (1986): allow coordination of complementary assets
- Bresnahan & Trajtenberg (1995): allow vertical integration
- Shapiro and Varian (1998): allow stewardship of standards

Case Study: Unix (Yoo, 2016)

- Unix fragmented into multiple variants
 - Proprietary: dozens collapse into two large camps
 - Nonproprietary: Berkeley (3 major versions)
- Forking forced creation of multiple versions
- Large installed base did not save it
- Lack of leadership prevented fixes to clear problems

- Similar dynamics surround death of Symbian

Implications

- Platform emergence and change are more complex and less deterministic than generally believed
- Some degree of vertical integration, leadership, and coordination is generally beneficial
- Enforcement should be based on clear theory backed by evidence, not oversimplified policy inferences
 - Terms like “GAFA” are unhelpful
 - Revenue models and cost characteristics are different
- Law should protect consumers, not competitors