

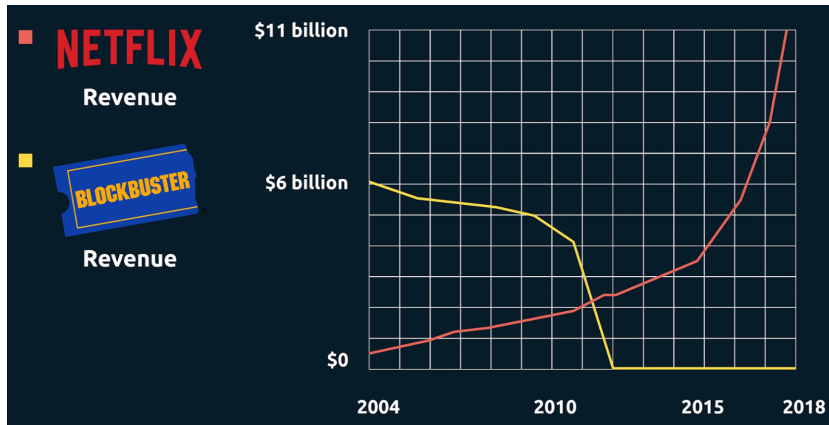
On “Dynamic competition between digital
markets”
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July 1, 2023

Disruptive innovations



The key result (presented in 1-shot game)

- Social optimum: total marginal benefit from creating a new market = total marginal cost,

$$P'(x)e \times m = C'(x).$$

- Private optimum: firm i 's marginal benefit from creating a new market = firm i 's marginal cost,

$$P'(x) \left((1 - \lambda)e \times m + \left(1 - \lambda - \frac{\lambda}{n-1} \right) d \times m \right) = C'(x).$$

- how is $d \times m$ distributed across the existing markets?
- assumption: if firm i creates a new market, it self-cannibalizes only one! of the $n - 1$ market it does not dominate
- It is sufficient to compare λe and $\left(1 - \lambda - \frac{\lambda}{n-1} \right) d$: positive externality on other firms vs firm i ' benefit from cannibalization

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Comments (1)

1. How are the new markets being created? How do they cannibalize the existing markets?
 - growing demand for eco-friendly cars \Rightarrow new products might be perceived as niche products; less functional, more expensive
 - traditional players react to the potential threat: compete with the existing products or adapt (invest in own electric cars, copy, acquire competitors)
 - the shift from the existing to the new markets can take time (e.g. 10 years Netflix vs Blockbuster); the old markets can die out or coexist with the new ones until the next disruptive innovation
2. Best response functions are constant: firms' investments do not depend on the beliefs about the rivals' investments
 - the reason: firms' investments lead to the rise of independent markets; firms investing in some technology know that the rivals invest in some orthogonal technology
 - we do observe big tech companies investing in AI; car manufacturers invest in electric, self-driving cars, etc

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Comments (2)

3. The dynamic model is essentially a repeated game with a stage game that was discussed
 - the number of the undominated markets changes over time; the decision of how much to invest today depends on the expected revenue from cannibalization that is a function of the number of markets
 - all markets stay alive or they can disappear?
4. Interpretation of λ as the level of competition
 - two firms competing a la Bertrand and two firms being local monopolists might have market shares $\lambda = \frac{1}{2}$ in both cases; per-consumer profit m is fixed in the model
 - employ a model of competition between firms?

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