Lowering the Garden Wall: Marketplace Leakage and Quality Curation

Ben Casner[1]

[1]Bureau of Economics, Federal Trade Commission, USA

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect those of the Federal Trade Commission, or any individual commissioner

Recent regulatory trends lean against anti-steering clauses

2021 law in South Korea

South Korea Leads the Fight Against Google and Apple's App Market

South Korea's legislature passed a landmark law requiring Google and Apple to open up to other payment systems for app developers.

Epic v. Apple

Apple can no longer force developers to use in-app purchasing, judge rules in Epic Games case

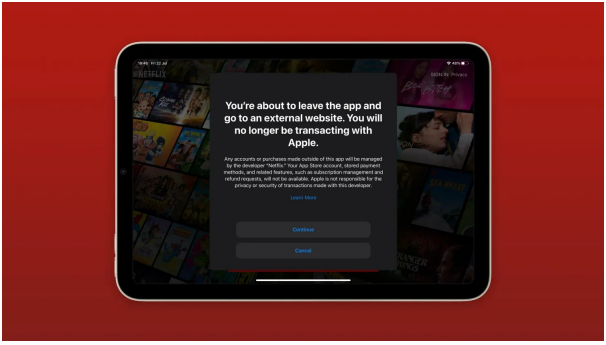
PUBLISHED FRI, SEP 10 2021-11:36 AM EDT | UPDATED FRI, SEP 10 2021-4:04 PM EDT

- DMA in EU includes clause against anti-steering provisions

App developers are now free to link to outside payment methods

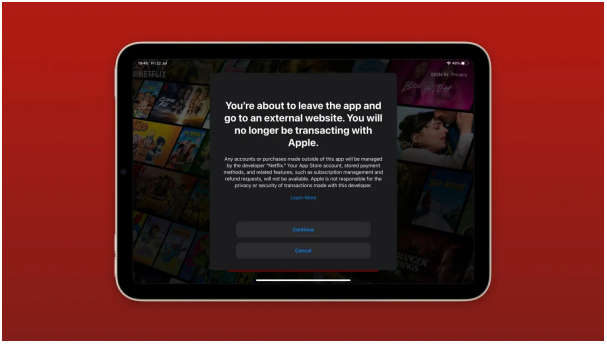
- Easy to include a link to browser sign-up flow
- No need to pay app-store commission*
- Marketplace leakage risk for app stores. (Hagiu and Wright 2023)

Apple is responding to this regulation with scary warnings



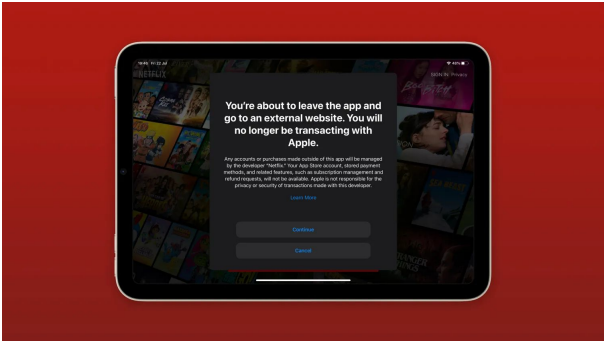
- Apple instituted these warnings alongside complying with anti-steering provisions

Apple is responding to this regulation with scary warnings



- Apple instituted these warnings alongside complying with anti-steering provisions
- Threat only effective at reducing leakage if low-quality sellers are present.

Apple is responding to this regulation with scary warnings



- Apple instituted these warnings alongside complying with anti-steering provisions
- Threat only effective at reducing leakage if low-quality sellers are present.
- Does Apple have motivation to reduce screening?

Agents and timing

1. Monopoly platform
   - Sets entry fee ρ and ad valorem commission ξ for sellers
     - ρ: Price of an iPhone
   - Sets proportion α of low-quality sellers

Agents and timing

1. Monopoly platform
   - Sets entry fee ρ and ad valorem commission ξ for sellers
     - ρ: Price of an iPhone
   - Sets proportion α of low-quality sellers

2. Continuum of sellers (mass 1)
   - Decide whether to steer consumers to direct transactions

Agents and timing

1. Monopoly platform
   - Sets entry fee ρ and ad valorem commission ξ for sellers
     - ρ: Price of an iPhone
   - Sets proportion α of low-quality sellers
2. Continuum of sellers (mass 1)
   - Decide whether to steer consumers to direct transactions
3. Continuum of consumers (mass 1)
   - Decide whether to participate on platform
   - Wolinsky (1986) style search problem if they do

Solution concept: SPNE

Consumer payoffs

$$\begin{cases} -\ell & \text{seller is low-quality} \\ 0 & \text{with probability } 1-\sigma \text{ if the seller is high-quality} \\ V-\mu & \text{with probability } \sigma \text{ if seller is high-quality} \end{cases}$$

Consumers cannot observe whether a seller is low-quality

Refunds drive low-quality sellers to direct transactions

Consumers have the option to seek an ex-post refund

- Granted on the platform
- Not granted by low-quality sellers

Therefore: low-quality sellers never make a positive profit with on-platform transactions

Refunds drive low-quality sellers to direct transactions

Consumers have the option to seek an ex-post refund

- Granted on the platform
- Not granted by low-quality sellers

Therefore: low-quality sellers never make a positive profit with on-platform transactions

- All low-quality sellers will steer to direct transactions

Update to search problem

Define

$$\frac{\beta(1-\alpha)}{\beta(1-\alpha)+\alpha} \equiv \psi$$

- β: proportion of high-quality sellers steering to direct transactions
  - $\beta \geq \underline{\beta} > 0$
- ψ: probability a steering seller is high-quality

Update to search problem

Define

$$\frac{\beta(1-\alpha)}{\beta(1-\alpha)+\alpha} \equiv \psi$$

- β: proportion of high-quality sellers steering to direct transactions
  - $\beta \geq \underline{\beta} > 0$
- ψ: probability a steering seller is high-quality

Expected payoff from a direct transaction:

$$\psi(V-\mu) - (1-\psi)\ell$$

Payoff from direct transactions

Value of participation conditional on buying from any seller

$$\mathbb{V}^{all} = (1-\alpha)(V-\mu) - \alpha\ell - \frac{s}{\sigma} - \rho$$

Value of participation conditional on buying only through the platform

$$\mathbb{V}^{p} = (V-\mu) - \frac{s}{\sigma(1-\alpha)(1-\beta)} - \rho$$

Platform's choice of ρ

Consumers participate if indifferent

$$\rho = \max\{\mathbb{V}^{all}, \mathbb{V}^{p}\}$$

Platform's choice of ρ

Consumers participate if indifferent

$$\rho = \max\{\mathbb{V}^{all}, \mathbb{V}^{p}\}$$

- $\mathbb{V}^{all} > \mathbb{V}^{p}$ at $\alpha = 0$
- $\mathbb{V}^{all}$ decreasing in α
- So why set $\alpha > 0$?

Low-quality sellers reduce profitability of steering

Profit if not steering

$$\pi = (1 - \xi)\mu$$

Low-quality sellers reduce profitability of steering

Profit if not steering

$$\pi = (1 - \xi)\mu$$

$$\pi^{steer} = \begin{cases} \mu - t & \alpha < \tilde{\alpha} \\ 0 & \tilde{\alpha} \leq \alpha \end{cases}$$

Low-quality sellers reduce profitability of steering

Profit if not steering

$$\pi = (1 - \xi)\mu$$

$$\pi^{steer} = \begin{cases} \mu - t & \alpha < \tilde{\alpha} \\ 0 & \tilde{\alpha} \leq \alpha \end{cases}$$

- t steering cost

Allow on-platform transactions if $\begin{cases} \xi \leq 1 - \psi + \frac{t}{\mu} & \alpha < \tilde{\alpha} \\ \xi \leq 1 & \alpha \geq \tilde{\alpha} \end{cases}$

The platform sets ξ at the indifference point

$$\xi^* = \begin{cases} 1 - \psi + \frac{t}{\mu V} & \alpha < \tilde{\alpha} \\ 1 & \alpha \geq \tilde{\alpha} \end{cases}$$

- Weakly increasing in α

Platform is trading off lower ρ vs. higher ξ

Proposition

$\alpha^* > 0$ if μ is not too small and V is sufficiently large relative to t and ℓ.

α^* is weakly decreasing in t.

- If t is large, ξ^* is already large

Recall motivation

Apple can no longer force developers to use in-app purchasing, judge rules in Epic Games case

PUBLISHED FRI, SEP 10 2021-11:36 AM EDT | UPDATED FRI, SEP 10 2021-4:04 PM EDT

- Prohibition on anti-steering: reduction in t
- This result is robust to a device funded platform ($\rho > 0$)

Possible solution: Mandate Competition

Google must crack open Android for third-party stores, rules Epic judge

- Competition for consumers drives $\alpha = 0$
- Consumers and sellers both benefit
- Tradeoff from lowering t disappears

Thanks!

bcasner@ftc.gov