

Integrating a Free Online Service: Advertisements and Competitive Implications

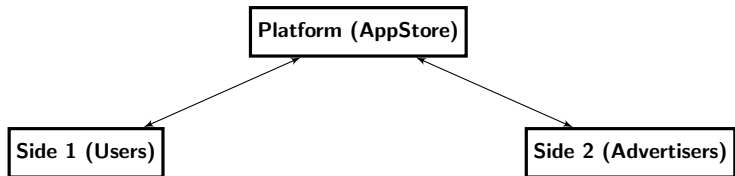
Gaurav Jakhu

Assistant Professor
Economics Area
Indian Institute of Management Bangalore

Centre for The Digital Future

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What is a Free Online Service?



Introduction

The Smartphone Market

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- ▶ Meteoric rise in the value of smartphones.
- ▶ Power to engage in exclusionary and exploitative practices.

A Debated Issue: Closed Ecosystem (Incompatibility)

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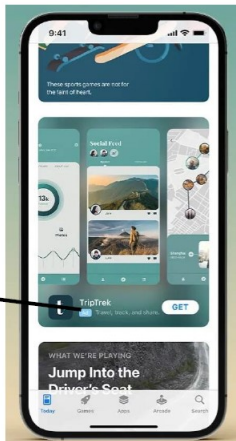
A Debated Issue: Closed Ecosystem (Incompatibility)

Does dominant Smartphone firm has an incentive to exclude rival apps by operating as a closed system and reduce consumer welfare?

- ▶ Previous economic literature: various effects of closed ecosystems
- ▶ **This paper:**
 - ▶ **A New Rationale** for explaining closed ecosystem approach.
 - ▶ Understanding welfare effects when **consumers dislike advertisements**.

Smartphones: Apple vs Huawei

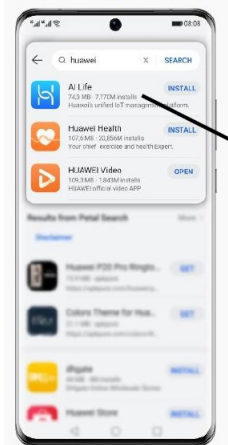
Product: iPhone
Service: App Store



App Store Ads



Product: Huawei Phone
Service: App Gallery



App Gallery Ads



Observations

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4. Closed-ecosystem approach: iPhone+ App Store and Huawei + App Gallery

What is Service Integration?

“Incompatibility with Rival Systems”

iPhone+ App Store and Huawei + App Gallery

Research Questions

Research Question 1: Under what market conditions service integration is a profitable strategy?

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Research Question 2: Can a dominant firm profitably leverage its quality advantage by integrating its dominant product and the service?

The Framework

Market Structure

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4. **Advertisers:** trying to reach users through placing ads in services.

Products and Services

Vertical and Horizontal Differentiation

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- ▶ G1 is a **superior product** (iPhone has more functionalities).
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▶ Horizontal Differentiation

- ▶ both products and services are horizontally differentiated.
- ▶ differences in user interfaces, design, performance.

Table 1: Key Trade-Offs on the User Sides

Side	Benefits	Costs
User	Standalone Utilities	Misfit/Transportation cost (for product and service) Price (for product) Nuisance cost of ads (for service)

User Options

Table 2: Systems available under the Two Regimes

Regime	User Options
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 3. Number of users consuming services G_2 and S_2 .

Main Results

Independent Pricing vs Service Integration: The Trade-Offs

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1. Effect on Market Segmentation

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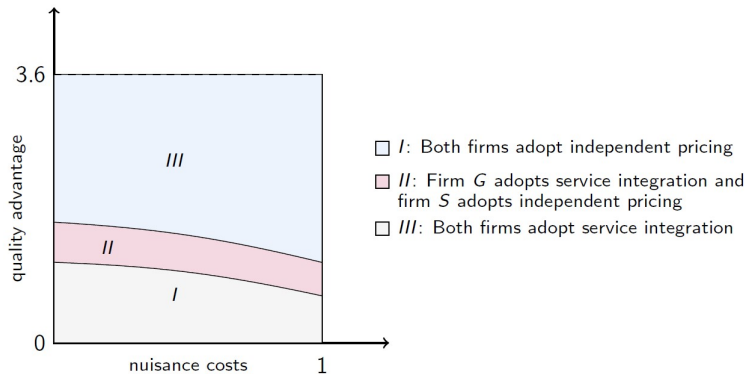
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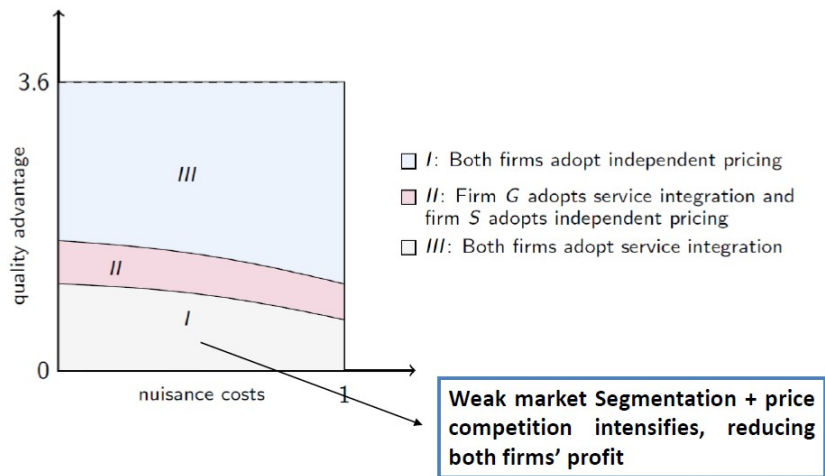
2. Effect on Price Competition

- ▶ *Market Power Increases*: Services integrated with products \Rightarrow \uparrow product differentiation \Rightarrow \uparrow product price.
- ▶ *Advertising Revenue Effect*: subsidize users to profit from advertisements \Rightarrow \downarrow product price.

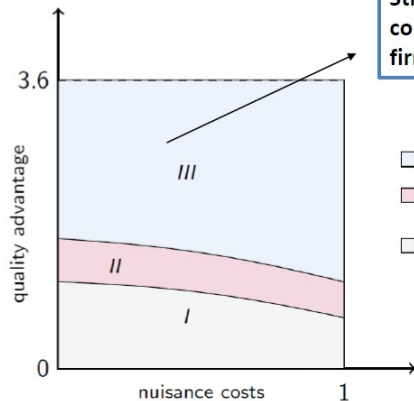
Comparison of Firms' Profits: Independent Pricing vs Service Integration



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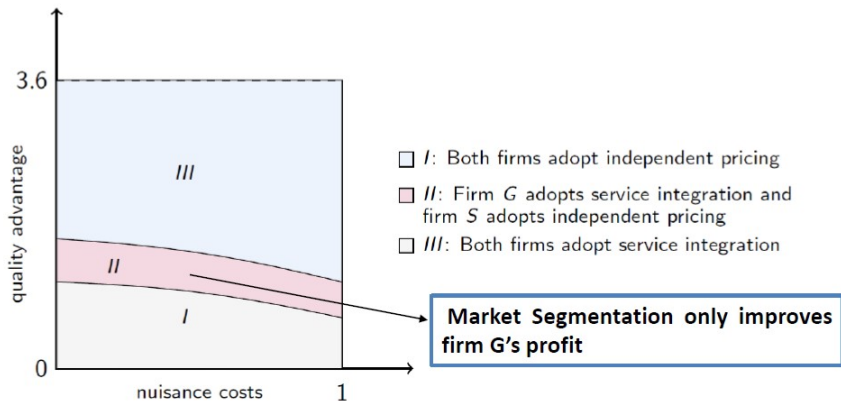
Comparison of Firms' Profits: Independent Pricing vs Service Integration



Strong market segmentation + price competition weakens, increasing both firms' profit.

- I: Both firms adopt independent pricing
- II: Firm G adopts service integration and firm S adopts independent pricing
- III: Both firms adopt service integration

Comparison of Firms' Profits: Independent Pricing vs Service Integration



Relevant Contribution to the Literature on Competitive Bundling/ Incompatibility Choices

Relevant Contribution: A New Rationale

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 - ▶ Main mechanisms: market segmentation, market power, & advertising revenue effects.

Model Implications and Conclusion

Implication I: Increased Focus of Dominant Firm on Service

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Table 3: Compatibility/Incompatibility Incentives

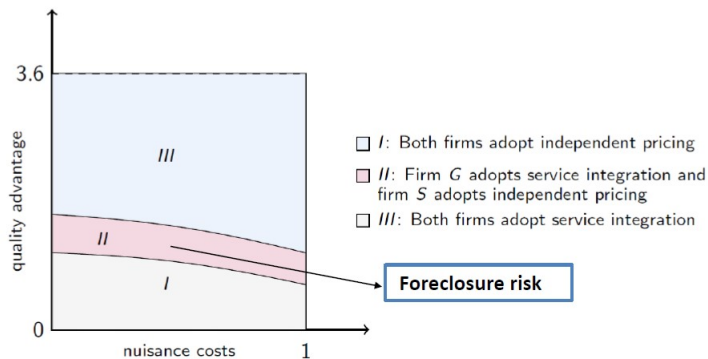
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Small	No Service Integration (Compatibility)	Amazon Firestick vs Chromecast

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Small	No Service Integration (Compatibility)	Amazon Firestick vs Chromecast
Large	Service Integration (Incompatibility) Dominant firm can increase profits from services	Apple's revenue from its own integrated apps increasing and becoming important over time

Implication II: Credible Threat of Leveraging Market Power



Regulatory Intervention under Credible Leverage Threat

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Table 4: Key Trade-Offs to Consider

Impact of Service Integration on	Benefit	Cost
Users	More users consume superior system Reduced exposure to ads.	Increased preference mismatch Price increase (?)

Regulatory Intervention under Credible Leverage Threat

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Advertisers		Reduced Advertising Revenues

Regulatory Intervention under Credible Leverage Threat

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Table 5: Regulatory Intervention under Credible Leverage Threat

Level of Nuisance Cost of Advertisements	Welfare	Intervention
Small	Users suffer Advertisers suffers	Yes

Regulatory Intervention under Credible Leverage Threat

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Level of Nuisance Cost of Advertisements	Welfare	Intervention
Small	Users suffer Advertisers suffers	Yes
Large	Users better off Advertiser suffers	Ambiguous

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- ▶ firms' profits depend on three distinct effects: *market segmentation*, *product differentiation* and *Pass-on of Advertising revenue*.

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- ▶ for *intermediate differences in product qualities*, leveraging of dominance.
- ▶ *level of nuisance cost of ads* crucially determine nature of regulatory intervention.

Questions? Comments?