UNIVERSITÄT MANNHEIM

MANNHEIM CENTRE FOR COMPETITION AND INNOVATION

Denial of interoperability and future first-party entry

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CRESSE, July 2023

Introduction

- The EnelX v Google case
- What theory of harm if the owner of an essential input denies access while not being active downstream?
- Our story:
  - Intertemporal effects (data-induced network effects across periods)
  - Denial of access to the 3rd-party app today improves 1st-party prospects tomorrow
  - **Trade-off for platform**: loss of platform revenues v. higher 1st-party profits tomorrow
  - If access is denied, consumers are worse off
- We study remedies such as compulsory access and data-sharing obligations.

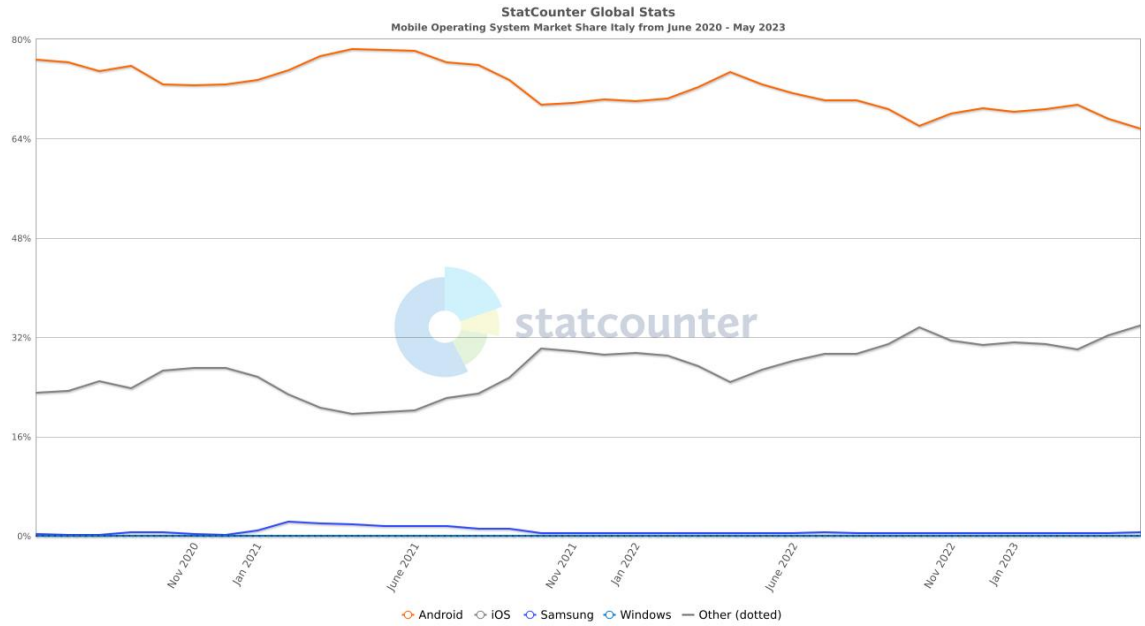
Enel and Enel X

- Enel
  - Italian multinational manufacturer and distributor of electricity and gas
  - market capitalization: EUR 61.5 billion (23 June 2023)
- Enel X
  - Provider of products and services related to energy demand at home, city and industrial level
  - JuicePass: free app for EV charging worldwide

enel x

Google (Alphabet)

- Android operating system
  - Market share development



- Android Auto (operating system within cars with a selected set of apps)
- Google Maps is a powerful first-party app

Enel X v. Google

- May 2021: AGCM (Italian AA) fines Google EUR 102 million for abuse of dominant position (Art. 102 TFEU violation)
  - Decision fully upheld by the Court (TAR)
- **Denial of interoperability**: Google did not allow Enel X to develop a version of its Juice Pass app compatible with Android Auto
  - Android Auto is a specific feature of Android that allows apps to be used while the user is driving, in compliance with requirements about safety and distraction reduction.
  - Apps can be accessed via the car's own display rather than via the smartphone
  - Through Android and Google Play, Google controls access of app developers to end users

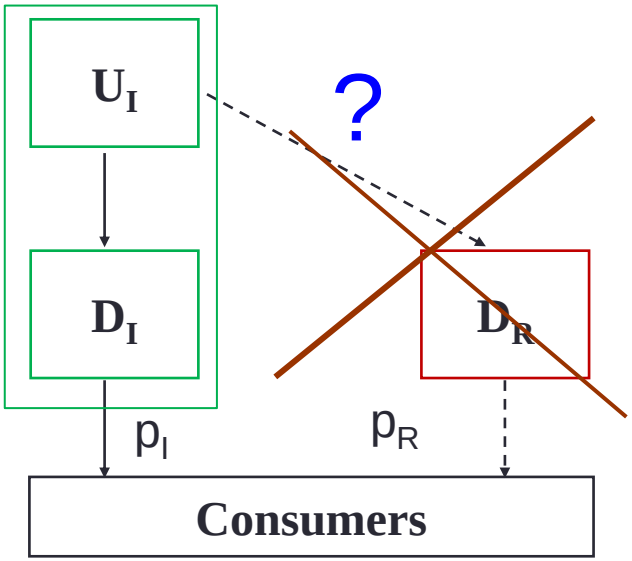
Enel X v. Google

- **Juice Pass** enables a wide range of services for **recharging electric vechicles**:
  - Finding a charging station
  - Reserving a place at the station
  - Managing the charging session (including payment).

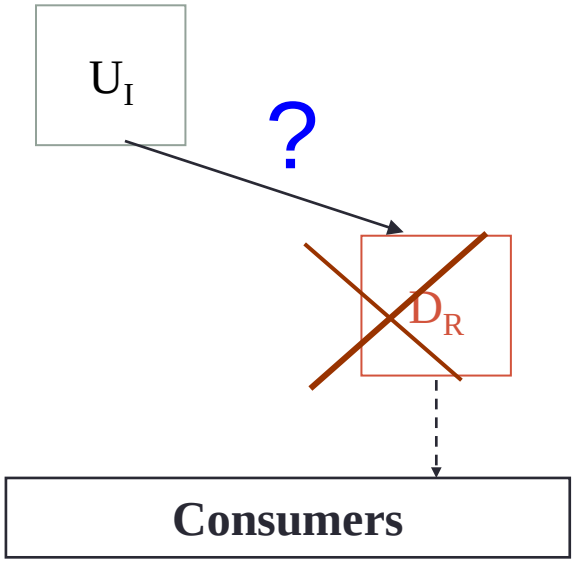
- **Google Maps** runs on Android Auto, but it **currently** offers **limited functionalities**:
  - Finding charging station and directions to reach it.
  - Reservation and payment functionalities, though, **might be included in the future**.

Vertical foreclosure

- The typical question: Does a **vertically integrated firm** with a dominant position upstream have the incentive to exclude an as-efficient downstream rival?

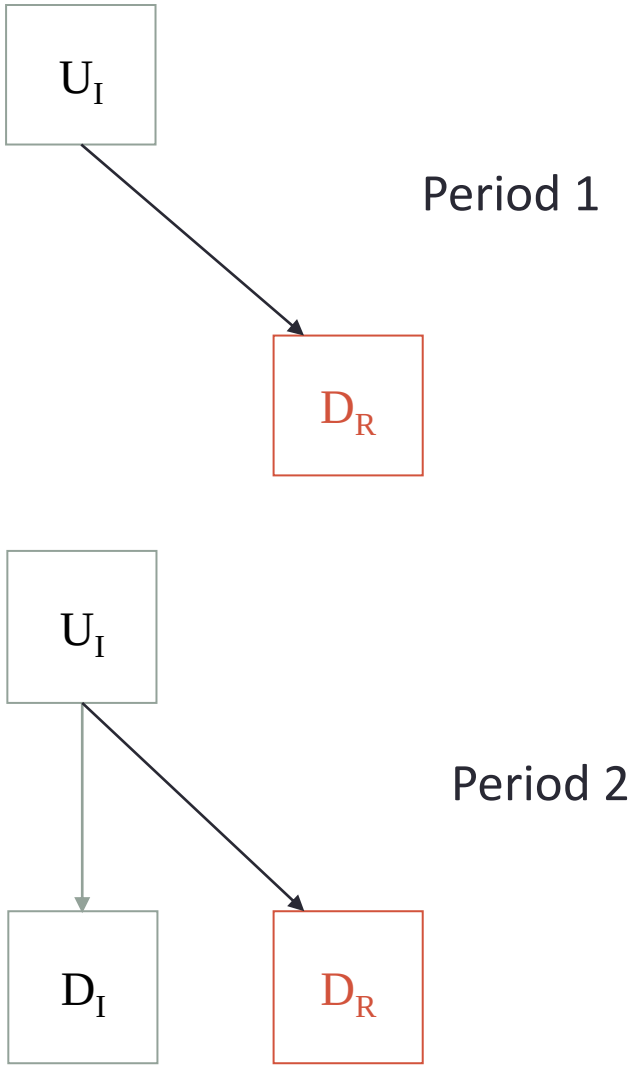


- But here the owner of the input is not integrated downstream, so why does it want to exclude?



“Dynamic” theory of harm

- Does Google have the **incentive to exclude** JuicePass?
  - Google Maps is likely to include similar functionalities in the future
  - Excluding JuicePass today prevents it from becoming a strong rival tomorrow (data from users crucial to improve the quality of service)
- “Dynamic” theory (as in Carlton & Waldman’s theory of tying): foreclosure has a short-run cost but a long-run gain (‘protection’ of 1st-party entry)



Setting

- P (Platform), may enter with 1st-party app at $t = 2$, at cost F_P.
- C (Complementor) may enter with 3rd-party app at $t = 1$ at cost F_C (no other app with similar functionality)
- Two groups of consumers ($t = 1$ and $t = 2$) value only this type of app and can only use it with the platform
- P has two sources of profits: from 1st-party app (if $y_p = 1$) and a share $0 < \beta < 1$ of profits of 3rd-party app
  - e.g., 30% revenue share from app developer and negligible variable costs

Base model

- Reduced-form profits from app market in each period depend on *availability* of apps on the platform
  - $x \in \{0,1\}$: availability of 3rd-party app C in t=1;
  - $y_c \in \{0,1\}$ and $y_P \in \{0,1\}$: availability of app C, and respectively P, in $t = 2$
  - $\pi_C^1(x)$: monopoly profit for C if $x = 1$; zero profit if $x = 0$.
  - $\pi_j^2(x, y_C, y_P)$, with $j \in \{P, C\}$, in $t = 2$
- Availability of app C in $t = 1$ ($x = 1$) affects profits at $t = 2$.
  - $t = 1$ consumers exert network effects on $t = 2$ ones, e.g., usage and attention means richer data which improves future users' experience.
  - Other similar reason: learning-by-doing as cross-periods effect

Properties of t=2 profits in app market

- $\pi_C^2(1,1,y_P) > \pi_C^2(0,1,y_P)$

  (Data collected from users in t=1 improves app C's performance and profits in t=2)

- $\pi_P^2(1,1,1) < \pi_P^2(0,1,1)$

  (If $x = y_C = 1$, i.e. app C is available in t=1, t=2, y_P is disadvantaged in t=2)

- $\pi_C^2(x,1,1) < \pi_C^2(x,1,0)$, and $\pi_P^2(x,1,1) < \pi_P^2(x,0,1)$

  (Whatever happened at t=1, competition reduces profits)

- $\pi_P^2(1,0,1) = \pi_P^2(0,0,1)$

  (If $y_C = 0$, i.e. C is unavailable in t=2, y_P does not benefit of data that C collected in t=1.)

Consumer surplus

- Assumptions on the ordering of consumer surplus:
  - $CS^1(1) > CS^1(0)$
    - Consumer surplus not fully extracted in t=1
  - $CS^2(1,1,1) > CS^2(0,1,1) > CS^2(0,0,1)$
    - If $y_p = 1$, consumers prefer both apps being available, and they benefit from $x = 1$ too.

Timing

(1.1) C decides whether to develop, at cost F_C

(1.2) P decides whether or not to allow $t = 1$ interoperability

(1.3) period-1 profits realise

(2.1) P decides whether to create 1st-party app, at cost F_P.

In the base model, we assume F_P low enough, so always $y_P = 1$.

(2.2) P decides whether to allow $t = 2$ interoperability or not

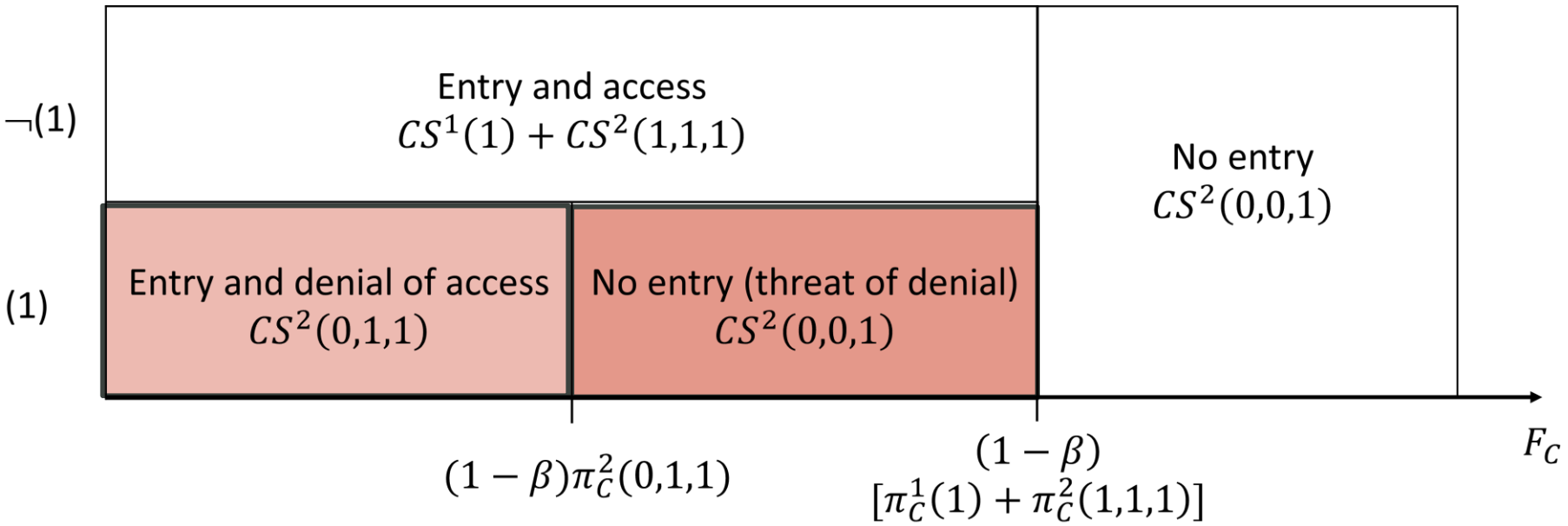
In base model, we assume that if $y_P = 1$ then P must grant inter-operability (consistent with both antitrust practice – courts hostile to withdrawal of access – and prohibition of self-preferencing)

(2.3) period-2 profits realise

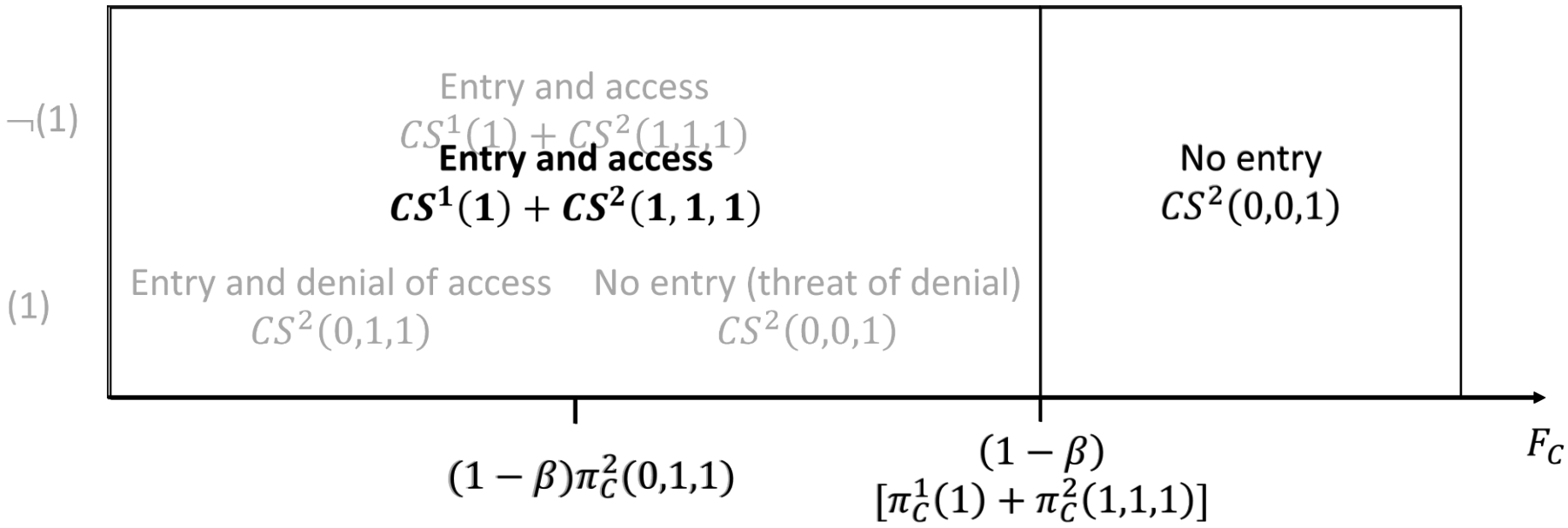
Result in the base model

- **Assumptions:**
  - Platform always enters in period 2 (i.e. F_P sufficiently small)
  - Compulsory access in $t = 2$
- Suppose that C has entered at $t = 1$. Then, P will deny interoperability if inequality (1) holds:

$$\pi_P^2(0,1,1) - \pi_P^2(1,1,1) > \beta[\pi_C^1(1) + \pi_C^2(1,1,1) - \pi_C^2(0,1,1)] \qquad (1)$$



Compulsory access



Further results and analyses

- Denial of period-2 access (weaker version: **self-preferencing** in period 2)
  - Prohibition of period-2 access denial can backfire (absent compulsory access in period 1): Because of the prohibition P may deny access in the first place
- Costly entry of first-party app, F_P
  - Compulsory period-1 access harms consumers for intermediate values of F_P
- Access conditional on period-1 data going to P instead of (or in addition to) C
  - C prefers to keep period-1 data to itself, but conditional on entry by C consumers are better off if C has to share period-1 data with P.
- **Data-sharing obligations**
  - Period-1 data under the control of the third-party app (C)
  - Period-1 data under the control of P

Microfoundations

- Hotelling model with given revenue per consumer (ad-funded business model of the app)
- Hotelling model with subscription-based business model of the app

Related literatures

- Cross-market and intertemporal network effects; learning by doing
- Platforms in dual mode; self-preferencing
- Raising the rivals cost
- (Dynamic) foreclosure theories

Summary

- Inspired by the *Enel X v Google* case, we have shown that the owner of an essential input might want to deny access in order to protect future 1st-party entry downstream
- Our story builds on **data-induced network effects** (denial of access today prevents the rival 3rd-party app from being superior tomorrow)
- Despite possible adverse effects under some circumstances, we identify environments such that **compulsory access** is the preferred policy
- Likewise for a data-sharing policy (especially if it is the platform which possesses the data of the 3rd-party app).