

EQUITABLE INTEROPERABILITY

The background features a solid blue gradient with a series of thin, white, wavy lines that flow across the frame, creating a sense of movement and depth. The lines are most concentrated in the lower right and upper right areas, with some lines curving upwards and others downwards.

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EQUITABLE INTEROPERABILITY

Based on work with a group of competition economists hosted
by the Tobin Center at Yale University

Digital Economy Initiative: [TOBIN CENTER \(YALE.EDU\)](https://tobincenter.yale.edu)

Policy paper located at: [REGULATION -- INTEROPERABILITY -- FINAL \(YALE.EDU\)](https://tobincenter.yale.edu/regulation--interoperability--final)

DIGITAL PLATFORMS

Lack of competition:

- Network effects
- Economies of scale
- Economies of scope in data

Entrenched market power causes harm to consumers in a large and growing share of the economy

What are the options to help consumers?

DIGITAL PLATFORMS

Lack of competition:

- Network effects
- Economies of scale
- Economies of scope in data

Entrenched market power causes harm to consumers in a large and growing share of the economy

What are the options to fix?

1) Improve and strengthen competition law.
Senator Klobuchar's proposed antitrust bill is an excellent step

But, as we say in America, it is too late when you "close the barn door after the horses have escaped."

What about all the remaining escaped horses who are damaging the garden?

- 2) Regulate
- Digital Markets Act
 - Proposed legislation in the US

THE DMA: CONTESTABILITY AND FAIRNESS

How does a regulator make digital platform markets “contestable?”

Network effects mean that competition is **for** the market:

- New technologies must appear on time
- Nascent competitors must be successfully protected by the competition authority
- Users must pay switching cost to change networks

Does not serve consumers well

Contestability when competition is **in** the market:

Consumers can change products any time without leaving the ecosystem

- Cars: Network effects for a product not significant. Roads are open.
- Mobile phones: Change carriers and can still telephone friends
- Credit cards: Change issuing bank and still shop at all merchants

Entry is easier, consumer switching costs are lower, firms have less market power

EQUITABLE INTEROPERABILITY

Now we have:

Competition **for** the market

We want:

Competition **in** the market

How can a regulator create competition when network effects are strong?

➔ ***Equitable interoperability***

Rough translation:

➔ ***Fair interoperability***

FAIR INTEROPERABILITY

Fair interoperability defeats network effects

Locate the critical bottleneck

Direct network effects: email, mobile phones

ISPs can all connect to the same network. Phones on one network can connect to those on another.

- An entering phone is able to offer a product that can contact all other phones.
- An entering ISP is able to offer a product that can contact all users of other ISPs

Technical standards make this possible

FAIR INTEROPERABILITY

Equitable interoperability defeats network effects

Locate the critical bottleneck

Indirect network effects: electricity generation (one side), electric appliances (other side)

- All electricity generators can feed into the grid.
- All appliance manufacturers can plug their devices into the network in consumers' houses

- An entering generator faces no technical barrier to serving all consumers on the grid.
- An entering maker of microwaves or espresso machines cannot be shut out of the plugs in a consumer's house

Technical standards make this possible


FAIR INTEROPERABILITY

Technical interoperability is not enough

Interoperability must be free of discrimination so that competitors are competing on the merits of their products and services

The dominant platform may not favor any third party over others, nor its own service over third parties'

This kind of interoperability is "fair"




Discrimination can be carried out using technical tools

- a rival cannot connect technologically, or a feature does not work for the rival

Discrimination can be carried out using contractual tools


- a rival cannot obtain commercial access to consumers through the platform



MULTIHOMING CREATES CONTESTABILITY


Consumers can sometimes “multi-home”

Multihoming occurs when consumers bear the cost of connecting to multiple networks, such as checking prices and arrival times on two ride-sharing networks.



Multihoming creates competition between existing platforms

Multihoming fosters entry because a new entrant can attract consumers




MULTIHOMING CREATES CONTESTABILITY

Consumers can sometimes “multi-home”

Dominant platforms often fight multihoming because it creates competition and lowers their profits


See Athey and Scott Morton (2022) “Platform Annexation”



Examples:

In ride-sharing, a dominant firm could create a loyalty contract or require driver exclusivity

In ad tech, the dominant exchange could acquire a seller (publisher) tool and degrade the interoperability of rival exchanges





ILLUSTRATIONS OF SPECIFIC PLATFORMS
(ALL DMA CORE PLATFORM SERVICES)

PERSONAL SOCIAL NETWORKS


Direct network effects are a huge barrier to entry: users want to be where all their friends are.

How can a regulator make the network effects operate at the level of the market rather than the level of the platform?

Email – open standard - market

Facebook – proprietary - platform

Design an interface (APIs) enabling standard functionality such as text, images, video, calendar




Identify platforms with market power / strategic market status / gatekeepers: Mandate interoperability

Regulator licenses the interface APIs to rivals to ensure security and privacy

Rivals can enter as hosts, attract users, and those users can send messages anywhere in the network

Rivals can differentiate beyond the standard, stimulating innovation



PERSONAL SOCIAL NETWORKS

Host PSNs will compete for users

- NOT on the basis of the size of their network
- Instead,
- On quality like content moderation, user interface
 - On price such as advertising load or subscription cost
 - Entering networks can cater to the speech preferences of their own users

Interoperability does not permit a network to monetize any user except its own (access fees are an interesting issue requiring analysis)




Critical issue: control of the interoperability standard

The dominant firm has an incentive to make interoperability favor its platform, or fail entirely

An industry committee including small platforms and entrants can advise the regulator

The regulator must have ultimate authority over the standard to ensure it promotes contestability




OPERATING SYSTEMS

Fair interoperability applied to operating systems allows entry and competition in ancillary services


The regulator mandates that interfaces (APIs) for key functionalities are accessible to rivals

- Near Field Communication (NFC chip)
- Location services (FindMy)



Then

Payment providers can enter and compete
Location devices can enter and compete

- Equivalent functionality
 - Speed, quality, service
 - No discrimination
- 

APP STORES

Fair interoperability applied to mobile operating systems to allow entry and competition in app stores

The regulator mandates the creation of an interface (APIs) for rival stores

Again, entrants and industry members can help with design if regulator retains authority

Entrants must license the standard to ensure security standards




App approval process remains

Licensed stores can carry any approved app

Stores compete

- On interesting curation
- On original content
- On quality of interface and service
- On price: fees to developers and consumers

Consider today's video content "stores" compared to the old monopoly Comcast "store"



AD TECH

Fair interoperability applied the ad tech stack prevents monopolization and preserves competition in digital advertising

DoubleClick managed an interface (APIs) with rival exchanges

Google purchased DoubleClick, after which time it favored Google's exchange in

- Time to bid
- Fees
- Information

No longer equitably interoperable

RRC / disadvantages drove out rival exchanges, or rendered them competitively insignificant

Competition lessened

Similarly, YouTube decided to only interoperate with Google DSPs

Described in "Platform Annexation" (2022) by Athey and Scott Morton


SEARCH ENGINES

Fair interoperability applied to mobile operating systems can help create competition in search

Today we see that Bing operates on Android as a technical matter

This is not equitable interoperability

Rival search engines cannot compete for consumers because of contracts.




Google search is the pre-installed default search engine on all Android and Apple devices

- Contracts with OEMs
- Contract with Apple

Entry at scale is effectively blocked

Regulator bans such contracts to create interoperability that is fair




ECOMMERCE

Fair interoperability applied to ecommerce tools can foster competition between marketplaces

The regulator can review the maintenance of existing interfaces (APIs) for ecommerce


Existing interfaces allow merchants to build one storefront and roll it out at multiple marketplaces that all accept the storefront's APIs



Merchants therefore multihome at low cost and can move effort and business in response to marketplace fees and quality.

Entering marketplaces can easily attract merchants

Regulator could take steps if interoperability between such tools and a dominant marketplace were harmed



IMPLEMENTATION



REGULATOR

Overseeing interoperability has elements of both antitrust and regulation

Antitrust goals: breaking down barriers to entry, managing the interface to lower switching costs, making entrants competitive, protecting the competitive process

Regulatory powers: speed, small decisions, rulemaking, backstop power to control the interface

We have seen in recent decades that antitrust enforcement is too slow to protect competition in digital markets

A regulator with the ability to make day to day decisions quickly enough to protect entrants is critical

Tricky, but small, issues are better settled by rulemaking by an expert regulator


Regulator can also gather data, issue reports, and create transparency

REGULATOR

Danger: dominant platform wants interoperability to fail

Suppose the dominant social network changes its APIs slightly on an important holiday so that communication across networks fails, but communication within the network succeeds

Consumers will learn to stay on the dominant platform, that entrants offer low quality




Industry committee (dominant firm, entrants, and potential entrants) sets the APIs in the interface:

Pros: saves regulator expertise and effort, participants informed about technology, aware of consumer preferences

Cons: easy for the dominant firm to exploit to its own advantage (think of Google and open web standards, IBM and unix)

Regulator must have final control and must have the goal of making the interface promote entry and competition



POLICY ISSUES




INNOVATION

Fair interoperability is much less invasive than rate of return regulation, or product design

“Light touch digital platform governance”

An interface / APIs allow connection – lessens network effect entry barriers

But outside the APIs, it does not mandate product characteristics




To attract consumers, entrants must offer quality, or differentiation, or innovation

Interoperability incentivizes innovation


Interoperability can be managed to be flexible over time. We see this in standard setting.

The API interface will be updated by the platform over time (e.g. NFC chip) to stay current

Or, the regulator updates the API interface as technology progresses



INTEROPERABILITY: THE SUPER-TOOL OF DIGITAL PLATFORM GOVERNANCE



Light touch solution, but requires regulator

Promotes innovation

Capable of improving competition *in* the market

Interfaces lower entry barriers and promote entry

Improves contestability in markets with network effects and entrenched market power

