

Network Effects and Interoperability

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tl;dr

Background: The European Union’s Digital Markets Act (DMA), which went into effect in November 2022, requires online platforms deemed to be “gatekeepers” to make their services interoperable. Interoperability refers to the ability of different systems, devices, or applications to communicate and exchange information. Importantly, the DMA envisions horizontal interoperability for messaging services, as well as vertical interoperability obligations. These include the ability to install third-party app stores and to install applications through sideloading, along with ensuring access to operating systems’ critical functionalities and specific devices’ hardware capabilities.

However... While interoperability requirements can reduce switching costs between platforms and possibly help consumers avoid being “locked-in” to inferior products, the net effects on new technology and greater competition are mostly speculative. Claims that mandatory interoperability is a “[super tool](#)” for platform competition rely on excessive switching costs between platforms effectively serving as a barrier to entry. The rise of new social networks like TikTok and messaging services like Discord suggests that network effects may be less pervasive than previously thought. Many consumers are perfectly comfortable with “multi-homing” and using multiple platforms.

KEY TAKEAWAYS

NETWORK EFFECTS ARE EVERYWHERE; NETWORK HARMS ARE MORE SPECIFIC

Consumers in any market—not exclusively or even predominantly digital markets—strike a balance between using multiple providers (multi-homing) and remaining loyal to just one. Network effects can give incumbents an advantage over challengers, but identifying that a given market has network effects does not, in itself, justify mandating interoperability. For any potential interoperability mandate, we must ask how costly it is for consumers to multi-home.

For example, a consumer may find it low-cost to download multiple apps—such as Zelle, PayPal, or Venmo—that each allow one to send money to a friend. By contrast, it may be quite costly to gain followers on a new social-media platform. Interoperability mandates have tended to focus on markets that already have low switching costs, hence limiting potential gains.

LOCK-IN CAN INCREASE COMPETITION

We say a consumer is “locked-in” when high switching costs make it difficult for them to switch suppliers even when quality changes. But markets subject to lock-in may still see [fierce competition for users](#). Companies compete upfront to attract such consumers through tactics like penetration pricing, introductory offers, and price wars. This

"competition for the market" can effectively substitute for standard compatible competition and might even be more intense, as it reduces differentiation. It is not a simple linear relationship, where lower switching costs are always better for consumers.

INTEROPERABILITY ISN'T ALWAYS GOOD

Interoperability proponents argue that it levels the playing field between tech giants and smaller competitors. The debate often imagines a low-quality incumbent using lock-in to keep a high-quality challenger at bay. But we don't necessarily want everything to be interoperable. It would be a problem if, *e.g.*, everyone's door keys were interoperable. The analogous problem in tech is cybersecurity. More interconnected systems are more vulnerable to cyberattacks and data breaches. Mandating interoperability, such as between [messaging services](#), can inadvertently expose users to greater security risks by creating additional points of access for bad actors.

STATIC STANDARDS AND DYNAMIC MARKETS

There are many examples of interoperability resulting from the voluntary adoption of standards. Credit-card companies manage vast, interoperable payment networks; screwdrivers work with screws made by various manufacturers; and U.S. colleges accept credits from other institutions.

Interoperability also tends to evolve over time and regulators should not imagine the current system will last forever. Bluetooth was initially developed for wireless communication between devices like headsets and phones, but has evolved to also enable seamless connectivity among various speakers, keyboards, smartwatches, and so forth—all from different manufacturers. This standardization has greatly simplified wireless connections and improved user experience.

CALCULATE COSTS IN ADDITION TO BENEFITS

While a [literature review](#) on switching costs and network effects by esteemed scholars Joseph Farrell and Paul Klemperer concluded that "firms probably seek incompatibility too often. We therefore favor thoughtfully pro-compatibility public policy," they also recognize that competition to be the dominant platform "can adequately replace ordinary compatible competition, and can even be fiercer than compatible competition by weakening differentiation."

Moreover, the theoretical papers they considered mostly ask whether increasing or decreasing switching costs increases consumer welfare. Mandates implemented through public policy tend to be more blunt and, after accounting for factors like increased security risks, are less likely to pass a cost-benefit test. Consumers often come across situations where interoperability might provide some benefits, but where the costs outweigh the gains. Policymakers should take the same approach.

For more on this issue, see "[Antitrust Unchained: The EU's Case Against Self-Preferencing](#)" by Giuseppe Colangelo; "[Privacy and Security Implications of Regulation of Digital Services in the EU and in the US](#)" by Mikołaj Barczentewicz; and "[Mandatory Interoperability Is Not a 'Super Tool' for Platform Competition](#)" by Samuel Bowman.

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