Recap on vertical interoperability under the DMA

Assessing Apple's compliance policy for Art. 6(7) from the perspective of FOSS

06. Feb 2025

Dr. Lucas Lasota, MA, PhD
Jitendra Palepu, LLM

weizenbaum institut | fsfe

Disclaimer

\ The FSFE is intervening in *Apple vs Commission* (T-1080/23)

This study does not focus on Apple's litigation actions and FSFE's intervention. It elaborates on Apple's compliance approach in relation to vertical interoperability under Art. 6(7) (p.8)

\ Funding disclaimer

As an independent non-profit organisation, the Free Software Foundation Europe has received corporate donations from some of the gatekeepers among other companies and individuals. The FSFE receives no donation higher than 20% of its yearly budget. No funding was received specifically for this study. (https://fsfe.org/donate/thankgnus.html)

weizenbaum institut | fsfe

Agenda

\ The contradictions of interoperability

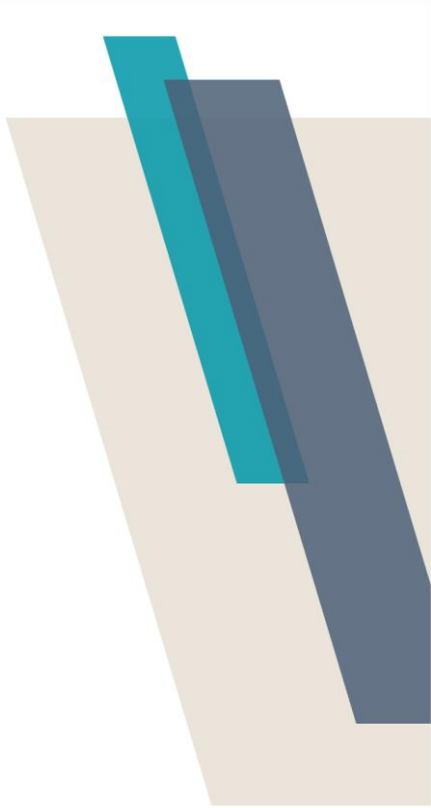
\ Apple’s compatibility vs interoperability policies

\ Apple as gatekeeper of digital markets in the EU

\ Apple and the DMA

\ Entangling the DMA, FOSS, Interoperability and Apple

\ Future research



weizenbaum institut | fsfe

The contradictions of interoperability

Lucas Lasota, CC-BY-4.0

\ As societies grow in complexity, interoperability of assets and infrastructure becomes inevitable. (Palfrey & Gasser, 2012)

\ Historically, interoperability is marked by a striking contradiction: while market actors benefit from interoperability, they step back and react when their assets become important enough to be subject to interoperability obligations. (e.g. Tarnoff, 2022)

weizenbaum institut | fsfe

Apple’s compatibility vs interoperability policies

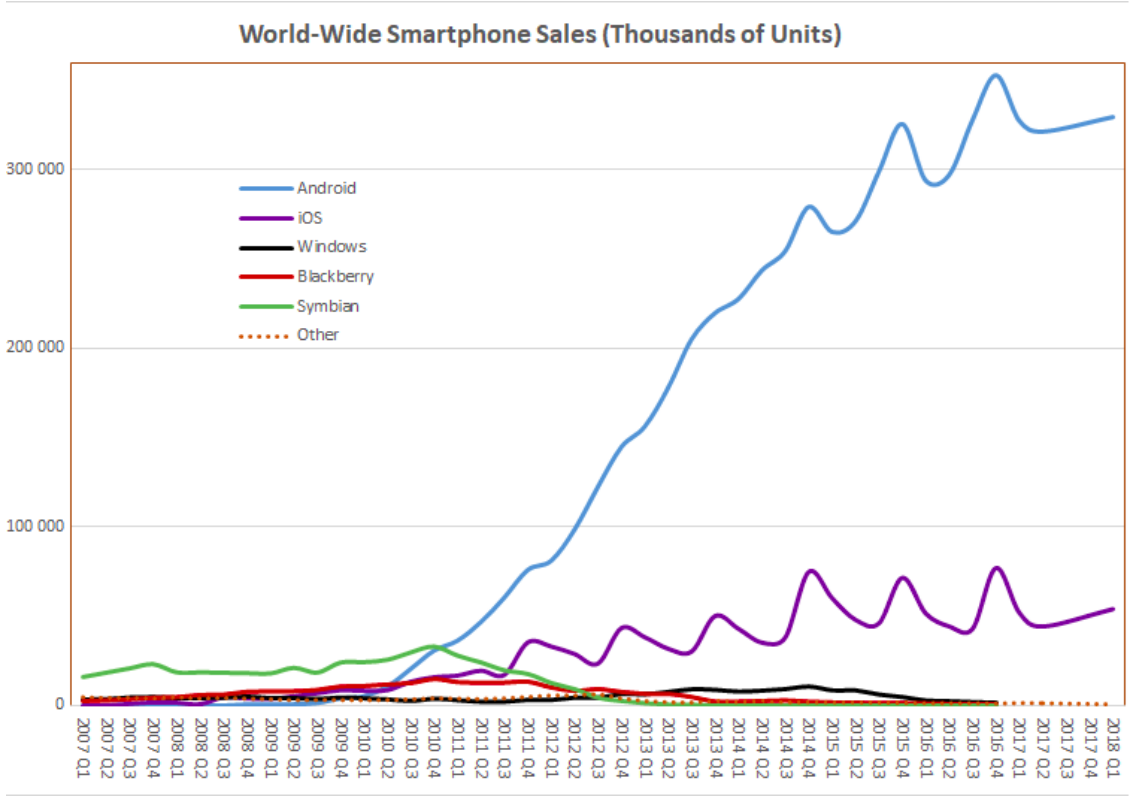
FSFE, CC-BY-SA 4.0

\ From the innovation boost caused by the multitude of apps in its App Store, to "freedom of terminal equipment", Apple has benefited greatly from interoperability.
(e.g. Merchant, 2017)

\ However, Apple has focused on distinctive, technically and legally closed systems prioritizing internal compatibility among Apple devices against cross-platform interoperability.
(e.g. Sinofsky, 2024)

weizenbaum institut | fsfe

Apple as gatekeeper of digital markets in the EU



\ Android (Google) and iOS (Apple) have togehter 99% of world market for OS.
(smartmo, 2021)

\ 94% of the software industry in the EU is composed by SMEs with less than nine employees.
(EC, 2022)

weizenbaum institut | fsfe

Apple and Interoperability in the DMA

\ **Art. 6(7)**: The gatekeeper **shall allow** providers of services and providers of hardware, **free of charge, effective interoperability** with, and access for the purposes of interoperability to, **the same hardware and software features accessed or controlled via the operating system** or virtual assistant listed in the designation decision pursuant to Article 3(9) **as are available to services or hardware provided by the gatekeeper**. […]

\ Art. 3 and Art. 2(2(f)): iOS and iPadOS were designated "core platform services" as operating systems under the DMA.

\ Apple proposed a "**request-driven**" approach towards interoperability Art. 6(7). (Google and Microsoft adopted the „automatic grant“ approach)

\ In Dec. 2024, after bilateral dialogues with stakeholders, the EC proposed **preliminary measures to improve Apple’s request-drive approach**.

weizenbaum institut | fsfe

Entangling the DMA, FOSS and Interoperability

\ DMA is not only about competition among gatekeepers but also **levelling the playing field for access-seekers**. Many FOSS projects are non-profit. They compete with gatekeepers not in scale but in the merits.

\ Free-of-charge interoperability have the potential to **facilitate access to FOSS** in devices.

Bringman, C. (2022) State of the Word 2022: A Celebration of the Four Freedoms of Open Source. WordPress. http

FOSS projects contributing to this study

Disclaimer:

\ This list is not exaustive. This study was enriched by the contribution of other individual developers and experts.

\ The mentioned projects are not associated with the FSFE and this study does not necessarily reflect their opinions.

App Fair Project

F-Droid

Alternative app stores

TALER

Alternative payment system

Tor Browser

Alternative browser

iSH

Emulator / virtual machine

weizenbaum institut | fsfe

Case studies

“Security paternalism”

\ Limitations to side-loading and interoperability based on overstated security concerns.

\ Examples: **Jailbreaking and limitation of side-loading in iOS**. Apple treats smartphones not as general purpose computers.

\ DMA: Recital 14, 70 and Art. 13(6) proposes a **technological neutrality approach**. Computing devices - whether smartphones or traditional computers – are under the same regulatory framework, focusing on their functionalities, control, and interoperability rather than their specific form factors.

Case of **iSH a FOSS terminal emulator** requested access to JIT Compilation APIs under Art. 6(7) to improve performance.

Apple’s Denial: Claims **no DMA obligation** since Apple doesn’t offer competing emulation functionalities on iOS. Apple also used security reasons for denying access of JIT to non web browsing applications.

Article 6(7) and DMA Recital 57: Requires gatekeepers to provide access to OS features used and available to their own services.

Conclusion

Similar as in the telecom sector in the EU, security concerns have been overstated to the detriment of interoperability. Evidence against interoperability is fragile, though. Evidence of fraudulent/fake apps on Apple App Store. Like the fake Lastpass password manager.

weizenbaum institut | fsfe

Case studies

“Notarization”

\ Complete app overview with automated and human checks. Apple’s gatekeeper control over interoperability and side-loading.

\ Negative impact on FOSS. Proprietary encryption via DRM does not allow audit the app’s source code, since a credible reproducible build of the app is no longer possible.

\ Notarization fundamentally differs between iOS and MacOS

\ Example: **UTM emulator**. It was blocked by Apple’s notarization rules but eventually allowed on the App Store. Apple analysed the case under its guidelines for game emulators, mini games, chatbots, etc. However, Apple stated “PC is not a console” to block UTM to run PC emulation in iOS. (Rule 4.7 of App store review guidelines).

Solution is Disintermediation through sideloading. Alternative App Stores must be buildable and distibutable without needing any special entitlements?

Questions and Conclusion

Arts. 6(4) and 6(7) should be applied in a coordinated manner.
Does a developer need to create and maintain an account with Apple in order to build an app for the iPhone and why
Does Apple have the capability to remotely disable/block apps that have been installed independently of their App Store, if so then why?

weizenbaum institut | fsfe

Case studies

Decision making and due process

\ Access-seekers are suffering delays in requesting interoperability, or facing non-sufficient documentation, or having requests unduly denied. Lack of transparency in the decision making.

\ Example: **appdb app store**. The request was complex involving JIT compilation, third-party code-signing certificates without Apple ID, access to hardware functions (NFC) and MDM restrictionsInterop request submitted in May, 2024 and by September 2024 no answer was provided. (No update by now)

Applicable EC's proposed measures (Dec, 2024)

\ Transparency of available APIs
\ Improving documentation quality
\ Due process for handling requests
\ Timeline for requests based on complexity
\ Conciliation procedures
\ Reporting of decisions

Conclusion

Although complex requests take time to be processeed, time contraints effectively make it difficult for independent developers to provide comparable services to gatekeepers'.

weizenbaum institut | fsfe

Future research

\ In Dec. 2024, after bilateral dialogues with stakeholders, the EC proposed **preliminary measures to improve Apple's request-drive approach**.

\ EC recognised the importance of „interoperability by default" and the limitations of „request-driven" approach.

\ The recommendations focus on **access to documentation, transparency, due process for handling requests and rejections, as well as reporting**.

"Security paternalism"

Applicable EC's proposed measures (Dec, 2024)

\ Transparency for available APIs
\ Transparency of reasons for rejection
\ Conciliation process [?]

"Notarization"

EC's proposed measures
\ Transparency of reject reasons
\ Conciliation process [?].

Decision making and due process

Applicable EC's proposed measures (Dec, 2024)

\ Transparency of available APIs
\ Improving documentation quality
\ Due process for handling requests
\ Timeline for requests based on complexity
\ Conciliation procedures
\ Reporting of decisions

weizenbaum institut | fsfe

Thank you very much!

Nothing is more insecure than a monoculture. Compete on trustworthiness

Dr. Lucas Lasota, MA, PhD
Jitendra Palepu, LLM

weizenbaum institut | fsfe