

HOW APPLE'S APP STORE PRACTICES ARE KILLING INNOVATION

Apple seizes every opportunity to emphasize that it is a leading innovator, a *"company that prides itself on the commitment to "think different," inventing products and services unlike anything on the market."*¹ While it is true that Apple has produced important innovations (in particular at the product level, with the iPod, the iPhone and the iPad), Apple's success would not be possible without the innovation produced by app developers bringing a large variety of attractive apps to its devices.

Out of the almost two million apps available on the App Store, one can find many examples of third-party apps

that offer to iOS users high-quality, innovative products and services of great value for them: Signal and Telegram allow users to communicate for free and in a secure manner,² Waze sends drivers real-time traffic information allowing them to *"avoid real-time headaches,"*³ Tinder helps people all over the world build meaningful connections,⁴ and Clue allows women to understand how their body works.⁵

There is therefore a clear value exchange between Apple and app developers: Apple has created a suite of attractive iOS devices, and allows their users and app developers to interact

through the App Store. At the same time, app developers add immense value to these devices and contribute to attracting and keeping users within Apple's ecosystem, by offering products and services that satisfy the needs and preferences of iOS users.

Apple does not however seem to recognize this value exchange. Worse, as the App Store is the only gateway between app developers and iOS users,⁶ Apple is able to take advantage of its gatekeeper power to engage in practices that have a negative impact on innovation, hindering app developers from offering valuable, innovative apps to iOS users.

This short paper explains how four App Store-related practices adopted by Apple are harming innovation.⁷ In particular, it looks into the negative effects on innovation caused by (i) the (up to) 30% commission imposed on apps offering "digital

goods or services", (ii) the mandatory use of Apple's proprietary in-app payment solution, In-App Purchase ("IAP"), (iii) the erratic App Review process put in place and executed by Apple, and (iv) Apple's "Sherlocking" practices.

1 See Apple's Proposed Findings of Fact and Conclusions of Law (Epic Games v. Apple, N.D. Cal.), available at https://www.scribd.com/document/502037049/21-04-07-Apple-Proposed-Findings-of-Fact-and-Conclusions-of-Law#from_embed, paragraph 88.

2 See <https://signal.org>; <https://telegram.org>.

3 See <https://www.waze.com/en-GB/apps/>.

4 See <https://tinder.com>.

5 See <https://helloclue.com>.

6 The App Store is the only app store allowed on iOS devices. Alternative app distribution channels, e.g., sideloading or pre-installing, are not available on iOS. Thus, Apple is a monopolist on iOS app distribution.

7 App Store-related practices are not the only way in which Apple may harm innovation. For example, Apple may stifle innovation by limiting interoperability or restricting access to certain functionalities that are necessary for the development and deployment of third-party innovative apps. This paper will, however, focus on how Apple's practices with regards to the App Store harm innovation.

the 30% commission stifles innovation

App developers whose apps offer “digital goods or services” must use IAP and pay Apple a 30% commission on the transaction value. The commission is reduced to 15% for subscriptions lasting longer than a year, as well as for app developers who qualify for Apple’s recently-launched App Store Small Business Program – i.e., existing developers who made up to \$1 million in proceeds in the previous calendar year for all their apps or developers new to the App Store.⁸

Apple is penalizing app developers for working harder, innovating, building successful businesses and earning more money.

The consequences of this 30% commission – often criticized as being unduly high or excessive – cannot be overstated: with a 30% “tax” levied by Apple, developers lose a significant part of their potential income, which could otherwise be invested in their apps or in the development of new, innovative apps. For some apps the 30% commission constitutes the largest component of their cost base – an amount that they may not be able to afford or pass on to consumers. Not only does this hinder innovation in that it restricts the ability of app developers to further invest on their offering, but it is also likely to prevent market entry (especially by start-ups or SMEs) – as app developers (which must already undertake research and development (“R&D”) costs) must anticipate lower profits when their product or service reaches the market. Some app developers may not be willing to undertake such a risk:

“Developers and would-be developers, who can only earn 70% on the dollar on each paid app or

product, in addition to paying \$99 annually to gain entry to the App Store, undoubtedly think very hard about whether to spend the effort, time, and energy that is required to design and program an app or related product, bring it to market in the single store available, and hope to recoup costs and make a reasonable profit. For many, the calculus makes no economic sense. This process, which is ongoing, leads to less output in sales, and ergo, distribution transactions.”⁹

In the end, consumers are the losers, as they are deprived of innovative apps and/or a wider choice of products or services.

Even the reduced 15% commission is a substantial sum, whose consequences should not be overlooked. While usually the spotlight is on large, profitable app developers, many apps available in the App Store operate on tight margins, and even a 15% commission might prove devastating for them.

Finally, while Apple boasts that the new App Store Small Business Program “is designed to accelerate innovation and help propel your small business forward with the next generation of groundbreaking apps on the App Store” – and indeed it may help new app developers enter the market by benefiting from a reduced (albeit significant) commission – this program may also act as an impediment to growth. This is because the moment an app developer exceeds the \$1 million threshold if only by a penny, a 30% commission will apply to all their revenues in the following year – and not only to those in excess of \$1 million. Consequently, app developers that have generated a turnover that is approaching \$1 million by the end of the year have reduced incentives to cross that threshold. What Apple is doing is to penalize app developers for working harder, innovating, building successful businesses and earning more money.

⁸ “App Store Small Business Program”, Apple Developer, available at <https://developer.apple.com/app-store/small-business-program/>.

⁹ Class action complaint of Donald R. Cameron and Pure Sweat Basketball, Inc., against Apple Inc., before the United States District Court for the Northern

District of California, available at <https://www.classaction.org/media/cameron-et-al-v-apple-inc.pdf>, page 5. See also page 23: “Apple’s distribution charges are so high that undoubtedly they keep developers out of the App Store; why take the financial risk and invest development time when Apple will take such a large percentage of their app and in-app product sales?”

IAP acts as a barrier to innovation

The mandatory use of IAP stifles innovation in the following ways.

First, when IAP is used, Apple captures valuable user data (such as the user's location, demographic information etc.), while only sharing very limited information with app developers.¹⁰ Such data, however, is of utmost importance for app developers seeking to improve the products or services they offer to users.

Second, the mandatory use of IAP reduces innovation in that it prevents app developers from offering different payment options to their users. All app developers whose apps offer "digital goods or services" must use IAP, a "one-size-fits-all" solution, which is the same across all categories of apps and all geographic regions. App developers, therefore, cannot differentiate by offering various payment solutions (either developed in-house or procured by specialized vendors) and/or offering alternative payment options (e.g., cash alternatives). This is particularly problematic as consumer preferences may vary considerably in different countries (e.g., in one country users may prefer to pay with credit card, in another through PayPal, while in a third with cash alternatives) or among different categories of apps. IAP leads to a homogenization of payment options, removing the ability of app developers to offer innovative solutions to their users.

At the same time, the mandatory use of IAP leads to a reduction of competition and innovation when it comes to in-app payment systems. As all apps offering "digital goods or services" to iOS users must use IAP, Apple excludes potential competitors and thus stifles innovation between

payment processors. If competition was possible – i.e., if app developers had the option to use payment systems developed in-house or procured by third parties, such as Adyen, Stripe or PayPal, or use IAP – payment processors would strive to differentiate their offering and provide innovative services and features in order to attract app developers.

Third, as IAP is a rigid solution, it prevents app developers from innovating when it comes to modelling subscriptions and customizing payment terms, resulting in lack of differentiation and less consumer choice. For instance, IAP only supports recurring subscriptions of one week, one month, two months, three months, six months and one year. App developers are thus precluded from designing their subscription offers differently to increase consumer choice, e.g., introduce a four- or nine-month subscription plan. In contrast, when other billing solutions are used (either developed in-house or procured from third parties), app developers can model their subscription options in a way that corresponds to the preferences of their users. Moreover, app developers using IAP cannot offer users the ability to purchase a subscription and pay in periodic instalments (e.g., purchase a twelve-month subscription and pay in six instalments, with no interest charged).

the app review process blocks innovation

All app developers wishing to reach iOS users must submit their apps for review by Apple, a process during which Apple assesses compliance with its App Store Review Guidelines.¹¹ Only upon approval by Apple apps may be distributed through the App Store. This review process is repeated for each update of the app. The trouble is that the Guidelines are vague and ambiguous,

¹⁰ This is analyzed further in the short paper "Apple's In-App Purchase ("IAP") as a disintermediation tool".

¹¹ App Store Review Guidelines, available at <https://developer.apple.com/app-store/review/guidelines/#business>. These Guidelines cover a range of issues,

such as performance requirements, permissible content, app monetization, security and privacy. All developers must comply with these Guidelines or else risk having their app (or app update) rejected during the app review process or being banned from the App Store.

and the app review process is carried out in an erratic and unprincipled manner. Apple is unconstrained and acts in its sole and unfettered discretion when carrying out the review process and interpreting the Guidelines:

“We will reject apps for any content or behavior that we believe is over the line. What line, you ask? Well, as a Supreme Court Justice once said, “I’ll know it when I see it”. And we think that you will also know it when you cross it.”¹²

App developers cannot know in advance how Apple – or more precisely, how the Apple employee (or automated system) examining their app or update – will interpret the Guidelines each time. This creates uncertainty, as Apple may reject an app or update at any moment, even if it has accepted a previous version of the app or similar apps / features developed by other app developers (a practice that particularly common when Apple intends to launch a product, service or feature that competes with the third-party app). Worse, Apple is hard to reach, leaving developers whose apps or updates have been rejected in agony for long periods of time – during which (the most recent versions of) their apps are not available to iOS users, depriving them from access to innovative apps or innovative new features of existing apps.

The examples of Apple’s unprincipled and unpredictable approach towards the app review process are numerous:

- **Screen time and parental control apps.** Screen-time apps (such as Freedom) and parental control apps (such as Qustodio, Kidslox and OurPact) were highly popular among iOS users and had been distributed through the App Store for many years, without facing any issues.¹³ However, the situation drastically changed in 2018 following Apple’s announcement that, as part of iOS 12, it would roll out Screen Time, a feature that would help people limit the time they and their children spend on the iPhone. Apple then removed or restricted at least 11 of the 17 most

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downloaded screen-time and parental control apps, having suddenly decided that they violated its Guidelines, despite having allowed them on the App Store for many years.¹⁴ Some apps had to remove certain functionalities which were integral to their quality, on pain of being removed from the App Store. Others were simply pulled from the App Store. Affected developers suffered significant losses as a result.¹⁵

- **BlueMail.** BlueMail, an email app with more than 10 million users globally, which supports

¹² Introduction to the App Store Review Guidelines. See Ibid. Apple is the only judge of whether apps comply with its unilaterally imposed Guidelines. The app review process is undertaken by Apple employees working in the App Review division. If an app developer disagrees with the outcome of the app review process, it is still Apple employees that will decide on the final outcome, as the only avenue for app developers is to submit an appeal before the App Review Board – comprising more experienced Apple reviewers. See App Store Review Guidelines, “After You Submit”: “Rejections: Our goal is to apply these guidelines fairly and consistently, but nobody’s perfect. If your app has been rejected and you have questions or would like to provide additional information, please use the Resolution Center to communicate directly with the App Review team. This may help get your app on the store, and it can help us improve the App Review process or identify a need for clarity in our policies. If you still disagree with the outcome, or would like to suggest a change to the guideline itself, please submit an appeal. Appeals: If you disagree with the outcome of your review, or would like to suggest a change to the guideline itself, please submit an appeal. This may help get your app on the store, and it can help us improve the App Review process or identify a need for clarity in our policies.”; See also <https://developer.apple.com/app-store/review/>.

¹³ Screen-time apps help people manage their iPhone addiction by limiting the time they spend looking at their screen. Parental control apps allow parents to control their children’s devices by, for instance, blocking certain apps or restricting access to apps during a particular time of the day (e.g., during school hours).

¹⁴ See Jack Nicas, “Apple Cracks Down on Apps That Fight iPhone Addiction”, The New York Times, 27 April 2019, available at <https://www.nytimes.com/2019/04/27/technology/apple-screen-time-trackers.html>.

¹⁵ In April 2019, Kidslox and Qustodio filed a complaint with the European Commission. In June 2019, after growing regulatory pressure, Apple pulled back. In the meantime, however, app developers had already incurred significant losses. For example, Freedom reportedly suffered more than \$1 million in losses, while OurPact suffered roughly \$3 million in losses as it counted on its iPhone app for about 80% of its revenue. See Jack Nicas, “Apple Backs Off Crackdown on Parental-Control Apps”, The New York Times, 3 June 2019, available at <https://www.nytimes.com/2019/06/03/technology/apple-parental-control-apps.html>.

multiple services, such as iCloud, Gmail, Outlook and Exchange, was granted in 2017 a patent for a feature which would allow people to communicate through public addresses without revealing their private email addresses. This is similar to what Apple's "Sign in with Apple", a feature incorporated into iOS 13 and other Apple software like MacOS and WatchOS, supports.¹⁶ Shortly after the announcement of "Sign in with Apple" in Apple's Worldwide Developer Conference 2019, BlueMail was removed from the Mac App Store, even though the app was initially approved.¹⁷ The app was restored in the Mac App Store after several months, following a campaign launched by Blinx (BlueMail's developer) to rally small developers against Apple.¹⁸

- **FlickType.** First submitted to the App Store in April 2018 as an accessible iPhone keyboard for the blind and visually impaired, FlickType was later in the year submitted for the new version of the Apple Watch. Apple approved FlickType's update which included Apple Watch capability.¹⁹ But a few months later, Apple rejected an update of the app, stating that Apple Watch keyboards were not allowed. In the meantime, competing apps offering Apple Watch keyboards were approved by Apple. About a year later, Apple finally allowed the full version of the FlickType keyboard on the App Store, without making clear why its position suddenly changed.

By removing, in an unprincipled manner, apps from the App Store or rejecting updates, Apple

blocks access to innovative products, services or features to the detriment of iOS users. More generally, the erratic app review process creates a hostile business environment for app developers, which does not foster innovation. App developers who invest time and resources in R&D, need to be assured that they can operate in a fair and transparent environment, where they can capitalize on their investments and reap the benefits of their efforts.

"sherlocking" limits incentives to innovate

*"Good artists copy; great artists steal – and we have always been shameless about stealing great ideas."*²⁰ This phrase sums up Apple's strategy of observing consumer trends and successful products and then developing its own similar offering. The practice of having an idea copied by Apple even has an industry term: "Getting Sherlocked".²¹ The App Store is instrumental in allowing Apple to gain intelligence on successful, innovative apps, which it can then copy by launching competing apps or features.²²

For instance, having observed that Clue, an app used by women to track their periods, is very popular in the App Store, Apple decided to incorporate some of Clue's core functionality (e.g., fertility and period prediction) into its own Health App, which comes pre-installed on every iPhone, cannot be removed by users and is offered for free.²³ And when Apple announced its new app

¹⁶ If the app developer supports "Sign in with Apple", when users create an account, they can choose to "hide their email" so the app cannot access their private email address. Apple in that case generates a random address which can be used, if needed, by the app developer to communicate with the user.

¹⁷ See Julian Chokkattu, "Email App Maker Begg Apple CEO to Get Back on the App Store", Wired, 22 November 2019, available at <https://www.wired.com/story/bluemail-developers-write-open-letter-to-apple-mac-app-store/>.

¹⁸ See Adi Robertson, "Apple restores mail app after developer tries to rally 'Sherlocked' victims", The Verge, 11 February 2020, available at <https://www.theverge.com/2020/2/11/21133023/apple-bluemail-blix-restored-mac-app-store-sherlocking-patent-lawsuit>.

¹⁹ Reed Albergotti, "Maker of keyboard apps for the blind sues Apple, claiming anticompetitive behavior", The Washington Post, 18 March 2021, available at <https://www.washingtonpost.com/technology/2021/03/18/apple-flicktype-lawsuit-fraud/>.

²⁰ Statement of Steve Jobs, Apple's founder and long-time CEO.

²¹ Apple's "Sherlocking" practice is named after Apple's desktop search tool "Sherlock", which stole many functionalities from now obsolete third-party companion tool "Watson". See Reed Albergotti, "How Apple uses its App Store to copy the best ideas", The Washington Post, 5 September 2019, available at <https://www.washingtonpost.com/technology/2019/09/05/how-apple-uses-its-app-store-copy-best-ideas/-comments-wrapper>.

²² Apple also gains unparalleled market intelligence by obliging app developers who offer "digital goods or services" to iOS users to use IAP. This point is discussed in the short paper "Apple's In-App Purchase ("IAP") as a disintermediation tool".

²³ Reed Albergotti, "How Apple uses its App Store to copy the best ideas", The Washington Post, 5 September 2019, available at <https://www.washingtonpost.com/technology/2019/09/05/how-apple-uses-its-app-store-copy-best-ideas/>.

called Breathe as part of its watchOS 3 for the Apple Watch, Apple took “inspiration” from a third-party homonymous app, with the same concept and similar functionality, which had been available on the App Store for over a year by that time.²⁴

Sherlocking has devastating consequences for app developers, which must come to terms with the fact that, without warning, Apple can make their work and investments obsolete by launching an app or feature that copies their ideas. This acts as a disincentive for innovation, as they know that, by launching an innovative product or service, they become susceptible to Apple stealing it, preventing them from reaping the benefits of their efforts. Worse, Apple can remove or restrict access to their apps or updates (as it is in charge of the app review process), while promoting its own competing apps or features – as its apps may come pre-installed on the iPhone (such as the Apple Health App) or may benefit from certain functionalities (e.g., get full access to Siri).

conclusions

Apple’s App Store related practices – in particular, the mandatory use of IAP by app developers whose apps offer “digital goods or services”, the (up to) 30% commission, the erratic app review

process and the Sherlocking practices adopted by Apple – hinder the development and distribution of innovative apps by app developers to the detriment of iOS users. Each of these practices is harmful in itself – but their cumulative effect is devastating: app developers are restricted from innovating and differentiating their offering; the commission levied by Apple represents a significant cost for many app developers, reducing the budget that could be spent on R&D; the instability caused by Apple’s unprincipled and unpredictable app review process and Apple’s Sherlocking practices reduce the incentives to innovate, as app developers fear that, at any time, Apple can wipe them out of the market. Overall, market entry is made riskier and more difficult, and existing app developers have to deal with increased costs and the constant uncertainty that their apps (or new features) may be copied by Apple or removed from the App Store. This is not an environment that fosters innovation.

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24 Kul Bhushan, “WWDC 2016: Developer accuses Apple of stealing his Breathe app”, BGR.in, 14 June 2016, available at <https://www.bgr.in/news/wwdc-2016-developer-accuses-apple-of-stealing-his-breathe-app-407767/>.

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