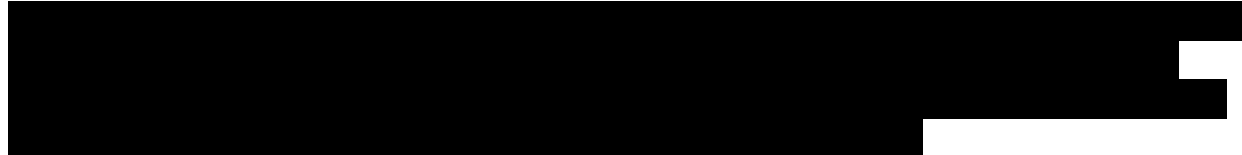## Introduction

We would like to focus our submission on the aspect of browser-engine diversity on iOS.

WebKit's difference in focus

Apple makes a browser-engine-product that is distinctly different from its competitors and we celebrate its existence and contribution to the diversity of products for accessing the web. If users had a choice to access this product on its merit rather than only because it is the only available browser-engine on their mobile device, then it would provide an amazing alternative choice in a diverse market.

Requirement for web developers to support iOS-WebKit

iOS-WebKit is the only browser-engine accessible to iOS users. Furthermore, iOS has sufficient market-share, especially in the UK, that availability of different browser-engines on other operating systems is effectively irrelevant from a practical point of view: Web developers must support iOS to access a large percentage of consumers, and investment in web features and APIs not available to iOS users has limited return on investment due to failure to reach that substantial market segment.

Selective implementation of web features and APIs

iOS-WebKit has a history of not implementing web features and APIs that are [proven to drive engagement and retention](#) for native mobile apps such as access to push notifications, and fullscreen support.

Underfunding of iOS-WebKit development

From a web developer point of view, the iOS-WebKit browser-engine is [routinely years behind adopting new web features and APIs](#). Furthermore, the quality of implementation is often subpar (e.g. WebKit's IndexedDB implementation [has a multi-year history of bad bugs](#)) compared to other browser engines, and the time to fix problems is often measured in years. It is also noteworthy that a very substantial subset of new web features implemented in iOS-WebKit have been contributed by external contributors to the WebKit open-source project such as [Igalia](#), which itself is often financed by Apple's competitors such as Google. While this is amazing evidence for the power of open-source software development, it provides further context for the limits on Apple's funding for iOS-WebKit.

Evidence that higher likelihood of browser-engine competition improves outcomes even for users who do not choose to switch browser-engines

We also want to highlight that in recent months [there have been signals](#) in Apple [increasing their WebKit investment](#). We interpret this as an early signal that Apple is motivated by the potential threat of having browser-engine competitors on iOS in the future, and hence ramping up investment to be competitive should they be required to allow competition. We welcome this sign of positive change and credit the CMA's investigation as contributing to it. It should also act as evidence that browser-engine diversity would have a positive impact for web developers and consumers, because it would make the iOS-WebKit engine better even for those consumers who do not choose to use a different engine.
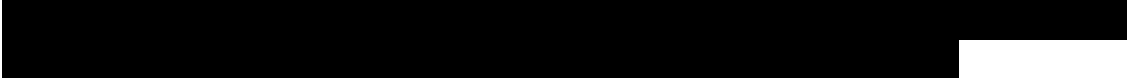
Proposed changes

- Apple should be required to allow web browser applications on iOS to ship a browser-engine (this includes the layout engine, JavaScript engine, and other components) of their choice.
- Apple should be required to make the same iOS APIs available to alternative browsers and browser engines that it makes available to Safari and WebKit (this includes potential private APIs that are not currently available to other apps).
- Apple should be required to not intervene (e.g. through their app review mechanism) with the implementation of web features and APIs that have been shipped by at least two browser-engines on a different operating system.
- All [restrictions for browser apps](#) on iOS should be lifted if necessary to comply with the previous proposed change.
- Apple should be required to open up the SafariViewController API for app-adjacent browsers to respect the user's browser choice.

Expected impact of changes

- We expect the most impactful outcomes of the proposed changes is that iOS-WebKit will become a much more powerful browser-engine, because Apple will react to the competitive threat of other browser-engines with further increased investment in iOS-WebKit.
- This means users and developers will enjoy earlier availability of browser APIs, and higher quality of implementation.