Developers Alliance's Comments On The CMA's Mobile Ecosystems Market Study Interim Report

The Developers Alliance is the world's leading advocate for software developers and the companies invested in their success. Alliance members include industry leaders in consumer, enterprise, industrial, and emerging software development, and a global network of more than 70,000 developers. We previously provided our comments in preparation for the interim report, and welcome the opportunity to further comment on its development.

Along with our submissions in previous CMA inquiries, the Developers Alliance is a recognized contributor to academic and professional fora focused on competition in digital markets. We make regular submissions on regulatory matters before the European Commission and regulators in the U.S., Australia and Canada. We have found the CMA to be open to the voice of the developer community, whose livelihood depends on vibrant digital markets. The Mobile Markets Report holds a wealth of information and is a testament to the depth and breadth of this inquiry. While we cannot concur with all its conclusions, we greatly respect the work which we believe covers much of what is needed to understand this complex market.

General Remarks

In the CMA's words, the purpose of the interim report is to "provide an update on our approach and our progress, to indicate the direction of travel our analysis is taking in relation both to concerns and potential interventions to address them and to test these initial findings with stakeholders." In our reading, the report lays out the CMA's analysis by first characterizing the market a bit narrowly, highlighting opportunities for anti-competitive behaviour without strictly delineating them, and then proposes interventions tailored to eliminate risks. We would welcome an increased focus on observable market failures and quantified benefits of intervention in the next release. With the information at hand and the regulatory power to obtain complete insight into how the markets under review operate, we would ask even more from an expert agency that has done such good work in the past.

Google and Apple are clearly competitors in the mobile device market. Any suggestion otherwise strains everything that follows. Beyond this, both companies are in a constant struggle with all the other major ecosystem companies - Google with Amazon in online markets; Apple, Meta and Google in advertising; Amazon, Meta and Microsoft in the next wave of connected devices (VR/AR and home assistants and gaming) against Apple and Google; Microsoft, Google and Amazon in cloud services and AI - the list goes on and on. The market for ecosystems is highly dynamic and competitive and is the core competence of the world's most successful tech companies. Each of these companies has the resources, the market power, and the motivation to keep each of the others in check in any of the many segments where they overlap.

Strong analysis of competitive markets is built on a foundation of market definition. Once properly defined, the analytical framework turns on the motivations of the parties as reflected in their observed behaviour, as any pro-competitive behaviour can be anti-competitive when unreasonably applied. Finally, the framework is compared to the facts and the impacts on those impacted by the selected market. Are consumers happy? Is innovation thriving? Are competitors and partners clamouring for entry, and are VCs and markets encouraging them?

Next, a strong analysis looks at counterfactuals to test assumptions. Is it possible consumers could actually be completely satisfied by a duopoly in the chosen market? Is it possible users don't switch because they simply like the ecosystem they've chosen? Can theoretical markets be both highly profitable and competitive? Can markets with inherently high levels of innovation be so stable as to defy disruption? Is there a monopolist model that limits profits? Is there a non-IPR innovation model where limiting innovation discourages new entrants? Can more competitors actually create less competition? What cannot be accommodated are hypotheticals that reach so far that they cannot be tested or become tautologies. In this regard, there are untestable assumptions that underpin some of the report's recommendations.

The Developers Alliance has participated in this inquiry and others to represent the interests of the software development community at large. It is not our purpose to defend any particular company, but to preserve and promote the ability for developers to thrive, which necessarily means promoting a thriving marketplace for their work. From this perspective, we note a key statement in the report when discussing possible market interventions. On page 31 the CMA says: "What links these points is an objective of addressing the ability of Apple and Google to use their role in setting the 'rules of the game' for competition between app developers in a way which acts in their own interests or creates uncertainty or increases development costs for app developers."

This ignores the counterbalancing role of managing the ecosystem to the advantage of developers collectively by bringing together appropriate parties and managing the commons to mitigate the damage that a single developer's self-interest inevitably brings. Regulators should look to the open-source software market to understand how developers manage collaboration in non-commercial systems. Ecosystems are not unconstrained in their ability to influence developer behaviour or participation.

As mentioned, our perspective is that of the millions of developers around the world that depend on a fair and effective market by which to get their apps into consumers' hands - and ultimately to profit from their efforts. We observe, however, that there is little mention of ecosystem benefits for consumers, competition between and within the major ecosystems by the other ecosystem owners, or the symbiotic role between ecosystem owners and their developer partners. **We come to the ironic conclusion that we cannot support the CMA's narrow developer objective even though it is couched in developer self-interest** because it ignores the health of the ecosystem, its critical role in market creation and stewardship, and its role in connecting consumers to market participants.

We note that the principles the DMU espouses are universally framed as "unreasonable" or "undue" restrictions and business practices. We agree that all of the listed practices can be pro-competitive and that enlightened regulators should avoid restricting pro-competitive behaviour above all else. Anything less is simply the imposition of regulator-driven industrial policy and the abandonment of free markets. An analysis of the report would indicate that the preliminary findings are weighted heavily toward identifying potential concerns and proposing market interventions, while little effort is spent in assessing why the behaviours the CMA focuses on evolved and continue to exist, what purpose they serve, or how ecosystem participants in aggregate benefit. **By keying on select sections of an interconnected ecosystem, the CMA missed evidence that would inform whether behaviours are reasonable and perhaps pro-competitive to the ecosystem in aggregate.**

We agree at the outset with the CMA's finding that there are "... generally high levels of satisfaction amongst mobile devices users." This finding seems at odds with the report's conclusion that competition is not working well for consumers and that innovation, quality and prices are a problem. Further, the foundational observation inviting intervention seems to be that, because these firms are profitable, they must be doing something inappropriate. An alternative and equally unproven assumption might be that they are much more efficient than the alternatives they replaced and that they capture much of the incremental value.

In the sections below we first provide our high-level observations on the report and follow with a short assessment of the balancing considerations we would recommend when assessing potential interventions.

Summary Of Our Observations On The Report

1. The Analysis of the Market Boundaries Biases the Report's Conclusions

The mobile phone market is clearly mature, as is the market for basic laptops and desktop computers. This doesn't mean that incremental improvement in performance and features isn't ongoing, but the ability for a new entrant to emerge and join the incumbents in a mature market is limited, and regulatory intervention to make this happen may have little value. If consumers are satisfied, there is no obvious business case for a new competitor to duplicate the complex and costly systems involved to steal share when there are innumerable markets undergoing hyperbolic growth elsewhere (where rewards would be far greater). We challenge the assumption that the market is safe from technological disruption, however. As the market for automobiles, new competitors emerge on a discontinuity and race to establish themselves before the incumbents can react. T**he Mobile Market report misses the mark in trying to pry open a legacy market rather than focusing on the emerging disruptions that will naturally attract new entrants, and preserving openings for them to get a foothold.**

Further, there is no market for mobile devices absent all of the components that together bring value to ecosystem participants. Ecosystems have emerged, and continue to exist, as a market alternative to vertically integrated firms. Ecosystem owners play the stewardship role that integrated firm management does in balancing and cross-subsidizing the various components that together provide a complete consumer service. But while the costs, controls, and cash flow within an integrated firm bypass scrutiny, the same patterns excite regulatory interest when they take place in the open - despite having the same purpose and satisfying the same conditions for system-wide market success. The CMA's analysis suffers by acknowledging, but then ignoring, the complex balance of controls and benefits across the various ecosystem sub-markets involved. We wish the CMA would embrace the stated recognition that "... in an ecosystem, the profits earned on one product or service should not be considered wholly in isolation from the other products and services within the same ecosystem", as the report states but then dismisses. Some companies compete within an ecosystem, some between ecosystems, and ecosystems themselves clearly compete with each other based on their skill in building and managing these relationships in the first place. It is no surprise to anyone that Apple, Google, Facebook, Microsoft and Amazon are each others' biggest competitors based on their common ability to build competitive ecosystems.

The CMA should not shirk from a comprehensive analysis of the mobile device market simply because adding ecosystem's to the mix is hard. On the other hand, if it's too hard to analyze properly, then the regulator must show tremendous humility before wading in to fix something they don't properly understand. We find the report's analysis of the app developer's place in the market incomplete and often at odds with the reality our members actually occupy. That said, we appreciate the report's acknowledgement of some of the key pro-competitive factors at work in the market.

2. Differential Outcomes Of Competitive Assessment In Open And Closed Ecosystems

We disagree with the report's assumption that digital ecosystems fall into just two categories; "open" and "closed". We would observe there is a continuum, from completely closed, to mostly closed, mostly open, and completely open. In the mobile market being assessed, we would characterize IOS as "more closed" and Android as "more open". For measuring competitive markets, this is a difference that matters. A completely closed ecosystem cannot, by definition, present 3rd party competition issues, as these are measured outside the black box of the ecosystem owner. Vertically integrated companies

are assessed differently than ecosystems of partners that together deliver a competing product.

A truly closed ecosystem - where the device, OS and app store owner purchased apps from developers and then resold them to consumers through a one-sided app store - would be assessed very differently under competition law even though they would actually exert more restrictive control over the various systems the report analyzes. By forcing ecosystem owners to either adopt completely open or completely closed business models, the actions the CMA proposes in this study could significantly reduce competition in the app market and reduce consumer choice and value by forcing them behind corporate walls. We are concerned that the CMA has made no assessment of a complete and artificial market separation driven by regulatory intervention.

We would look for a thorough assessment of the differential value to market participants of truly closed and truly open systems, to answer the question of whether one, or the other, or a mix best serves consumers, or whether regulators are equipped to make this type of macro intervention effectively.

3. Pro-competitive Role of App Stores As Ecosystem Enablers

As the Report acknowledges throughout, Google and Apple perform many pro-competitive functions within their respective ecosystems. **The simple existence of app stores and the tools and services they offer creates a market for millions of developers and creates tremendous consumer value.** It is critical to note that this ecosystem role evolved for a reason; it was not dropped into an existing market but was a necessary condition for the mobile device market to mature as it did. We will not dwell on the waves of closed mobile device systems that briefly dominated the consumer marketplace and inevitably failed except to say that Apple and Google learned from those failures in building the competing systems that define the industry today. We would note that no intervention was required to seed the disruption these companies wrought and that their success was never inevitable or guaranteed. We'd also note that they are as vulnerable to the next disruption as those that went before them.

We'd also note that neither Apple nor Google are the same company they've always been and that conflating their success with just one of the segments where they now compete is dangerous. While single-market companies still exist, many digital economy companies rotate through radically different marketplaces as they evolve; only the name remains the same (or they reorganize into silos to acknowledge the evolution). Google was a search company that purchased an ambitious project and perfected a successful OS after it saw Apple leap from desktop to take on the mobile phone giants of the day. Microsoft failed in its bid to enter. None of these companies would have predicted what they'd become and they're only one disruption away from disappearing or morphing into something completely new with the same old name. And neither recognized that their ability to build ecosystems was a core competence that spanned market sectors, allowing Amazon to move from selling books to becoming the tech giant that brought digital assistants to the mass market.

4. Inconsistent Analysis of Competitive Behaviour in Digital vs Physical Markets

Plenty has been made of app stores using their inside knowledge to compete with their partners. This behaviour is not unique to digital markets, it is not uncommon, it is often defended as pro-competitive offline, and it is not costless to the platforms that use it.

In the offline world, retailers, grocery stores and others commonly use their knowledge of what products consumers buy in their stores to create "store brand" knockoffs that displace the originals. The result is a lower-priced product that consumers desire, and increased competition for a popular product. It is of course seen as unfair by the producer who is cloned and displaced. Consumers shrug and save money. Economists applaud.

There are real costs for platforms that behave this way. In the developer community, this can be reflected in highly skilled development houses leaving one platform for another, or leaving the mobile market for another digital space. It can result in litigation, public relations pressures, and potentially in the loss of social and political goodwill. In any case platform owners have no incentive to clone in isolation, but always in the context of internal strategies and synergies with their own corporate objectives - after all, they benefit from app success just by operating the store. The complementary outcome is of course to acquire or hire the staff and service that fits the platform's needs, rather than build it again from scratch. This is often easier for digital goods than for non-digital goods. For this reason, we are strongly opposed to policies that restrict ecosystem owners from investing in developer-led businesses.

While we do not support app store owners cloning successful services without appropriately compensating their creators, our members understand how competition works. What they expect is to benefit from their efforts and to be treated fairly. **The Report would benefit from an analysis of why digital market competitive practices that mimic those that are universally applauded offline, create different outcomes in mobile device markets.**

5. Analysis Bias When Conflating Mature and Emerging Markets

Promoting the entry of new paperclip companies is unlikely to spur innovation in the industry. When market growth slows due to saturation, competitive dynamics shift from competing to gain new users, to stealing users from others and maintaining your own. For products, the shift is from new sales to replacement sales. Businesses in every industry use long adopted strategies to guide their decisions as they move through the market lifecycle.

The mobile device market the report analyzes is not easily categorized given the lack of precision in its boundaries but is clearly near maturity. While the growth in new mobile phone users has been slowing for years, incremental improvements in networks and devices encourage a robust upgrade market. Nevertheless, market entry is no longer attractive to anyone looking to capture more than a modest share and generate a profit after covering their costs and accounting for risk. Large tech competitors capable of scaling at this level are typically focused on emerging markets where rewards are much, much greater.

Emerging markets, particularly those that capitalize on technological discontinuities, are highly attractive to ecosystem competitors. In emerging markets, speed to scale a user base is often the deciding factor as network effects and digital efficiencies accumulate. With scale limited only by potential users, and not by wrestling established customers from incumbents, entering companies can, for a time, ride the natural monopoly that being first to market provides.

Many of the interventions mentioned in the report at best seek to attract niche competitors for small but critical portions of the marketplace. Unfortunately, this pattern further deters large competitors who cannot even replicate the success of incumbents given the new rules that dismantle the systems needed to succeed. In turn, they also drive up transaction costs, eliminate scale efficiencies, and fragment the market, thus increasing the overhead for market participants.

6. International Comity and the Political Danger of Extraterritorial Reach

The mobile ecosystem does not stop at the UK border, and the CMA is not the only regulator looking at this space. Traditionally, legal jurisdiction is limited by an entity's interaction with the forum in question, but what if the only nexus is the ability to connect over the internet?

For the CMA to address UK companies or companies that do business within the UK or with UK citizens is completely appropriate. But can, or should, the CMA seek to regulate

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the fundamental business practices of the global digital economy? Can the CMA regulate a developer with no UK contacts, no revenue in the UK, and the only nexus being that both the UK and the developer's servers connect to the internet? Should the US be able to exert jurisdiction over a digital company's UK operations and customers on UK soil?

Developers benefit from the global reach of the internet. Almost half of the developers in a 3rd party survey (which included the UK) indicate they target markets outside their region. Developers rely on harmonized regulatory rules to make this possible. When individual countries or regions impose conflicting obligations extraterritorially, developers must choose which markets to serve, and they must construct mechanisms to prevent inadvertent contact with incompatible legal regimes. Many developers do not target markets in China due to these issues. The Great Firewall makes this possible.

Ecosystem owners have four choices when presented with obligations that lack territorial restraint. First, they could comply across their international operations, but inevitably this results in conflicts with obligations imposed by other jurisdictions and is therefore impracticable. Second, they can re-architect their services to fire-wall those regions where regulatory obligations are out of step with global norms. This of course drives tremendous cost, complexity, and risk that must be balanced against other options. Third, they can remove their operations from the region, the benefit being that the cost is well known in terms of the lost revenue opportunity balanced against fines and the costs of compliance in the other scenarios. Fourth, they can re-architect their business to avoid falling within the regulation or the regulator's remit.

Elected officials and leaders of governments are charged with managing the relationships between nations. No nation would welcome a foreign regulator's reach onto their soil or into the lives of their citizens any more than a national government would welcome interference with their relationships with foreign governments. The report's recommendations should be strictly bound to comply with international comity, and weighed against the CMA's mandate to impose extraterritorial obligations that invite foreign regulatory interference in future UK matters. **In balancing the benefits and costs of the recommendations in this report, the CMA should restrict its calculation to that fraction of the mobile economy whose nexus is the UK**, and it should provide the legal basis for extra-territorial reach.

Observations On Possible Interventions

We acknowledge the decision not to make a market investigation reference under section 131 of the Enterprise Act 2002 and reserve further comments on specific interventions under the proposed new regulatory regime (provided that is adopted).

We strongly encourage further consideration of **the potential risks and increased costs from interventions in the mobile ecosystems, as rightly recognized by the interim report.**

Remedy Area 1: User Switching, Rival OS Entrants

We have seen no evidence that users want to switch, and can't. We encourage the CMA to provide further background on the assumption that users either want additional ecosystem options for mobile devices or that they would take up an alternative were one to emerge. We accept that regulators could make the existing ecosystems unattractive enough to force users to abandon them. We refer to our introductory remarks above.

Remedy Area 2: Competition In The Distribution of Native Apps

Like car companies, home appliance companies, consumer electric companies, and virtually all other companies, OS owners make decisions on what features they will offer and which will be "more open" or "more closed" to third parties. An OS is not a public service and an app store is not a charity. They are commercial services offered for profit by their creators and the owners of the intellectual property they embody. Their success is the result of large investments over an extended period and a delicate balancing of the

costs and benefits to the many other ecosystem components required to make them useful and valuable to consumers. Nothing prevents a competitor from emerging or displacing current OS competitors, or from completely displacing the current smartphone market by providing something better, except for money and time. Being late to the game does not justify a handout.

The mobile phone app store marketplace has two competing business models - one more open and one more closed. Consumers, developers, and device manufacturers participate and choose based on the cost and benefit to them of the two systems. For developers, whose product is software applications & services, they are also free to create widgets, games, and services for the web, game consoles, virtual assistants, IoT devices and the like. They apply their efforts where they can best profit. If Google Play isn't profitable for them, they code elsewhere. None are slaves to the ecosystem owner. The market dynamic here is that, while many developers would prefer a more open ecosystem, many consumers clearly prefer a more closed one. Hence there are two models, and the ability to choose.

In turn, Google and Apple depend on 3rd party developers to provide innovative apps and attract consumers to their platforms. Without apps, the stores are empty, the devices less useful, and consumer interest wanes. Consumers, in turn, recognize the unique role of the ecosystem's owner in choosing which app store model they themselves prefer - more open or more closed. Regulators should be reluctant to remove a competitive alternative and fix a single business model for all consumers to accept. **Regulators should not reduce the ability of consumers and developers to choose.**

The risks of sideloading to consumer security and privacy are well understood, and we have nothing to add in this regard. What we would add is an observation that a third business model - a completely closed ecosystem - is a viable alternative if app stores are obligated to forgo competitive differentiation due to the regulator's attempt to increase competition tomorrow by decreasing it today. Were one of the current ecosystems to vertically integrate and close their ecosystem to 3rd party developers - as they have every right to do, and as is the norm in many other digital markets - our members would see a drastic change in both how they get to market, the overall opportunities they could pursue, and the market power they could assert.

On payment systems, developers welcome choices in the payment options they can present to consumers. At the same time, many SME developers also welcome the choice of off-loading the burden of compliance, customer service, returns, and taxation to someone else. **Interventions that add to the option of an app store payment system are welcome while excluding that option and introducing others simply limits developer choice.**

Remedy 3: Competition in the Supply of Mobile Browsers and Browser Engines

While browsers are by definition and design gateways between consumers and web pages on any OS, mobile or not, they are also one of the primary entry points for executable code coming from outside the device. For that reason, they are a primary attack surface for bad actors. Far from a generic function, they are part of a set of interfaces where data can enter and leave the device. Thus they are a significant consideration in device security as well as functionality.

Mobile devices can exist in several states, each of which changes their vulnerability to attack, but also limits their utility. A mobile phone can be taken offline - no NFC, no Bluetooth, no WiFi, No 5G - and still reform many functions based on the apps installed. As each outbound connection brings new features, it also adds another inbound and outbound risk for OS and user security. Browser weaknesses are a known vector for malware and abuse, which could inform whether it is reasonable for OS owners to place limits on what browsers can do and what web-based capabilities are considered safe to offer.

While developers are eager to provide apps of many types, both native and web-based, they generally defer to the ecosystem owner's responsibility to ensure consumer's feel safe using a device.

Remedy Area 4: The Role of Apple and Google in Competition Between App Developers

The Report notes that "Operators of app stores take steps to ensure that apps on their stores meet minimum standards including in relation to the quality, security, privacy, and legal requirements." Their purpose is to support the ecosystem by safeguarding consumers and providing them with a valuable product, which in turn provides a market for "good" app developers but of course, reduces the market for bad actors. In turn, this increases user satisfaction, promotes usage, creates a market pull for more apps and services, sells more handsets, and increases opportunities for advertisers and other partners. Whether their actions in this regard are reasonable must take into account the aggregate costs and benefits to all ecosystem participants - not just, for instance, the impact on developers intent on placing malware in app stores.

Given this, we agree that where impacts are uneven across similarly situated ecosystem participants, an investigation into reasonableness is warranted. **The regulatory intervention that may result cannot, however, reduce competition, consumer benefit or the aggregate economic benefit to ecosystem participants overall.**

On web apps, modern privacy practice encourages developers and OS to maintain user data on their device and to isolate it from other applications. Native apps can often manage user data and provide functionality without a network connection. Web apps, by their nature, face more challenges therefore in manipulating on-device data. Developers typically choose one model or the other based on the service they are trying to deliver and the context in which the consumer and the device operate.

The choice of offering a web or native app is a complex technical decision. It is far from clear that web apps are a universally preferred solution for all developers, and we would discourage regulatory intervention that artificially encourages one over the other.

On opening proprietary APIs or forced interoperability, Apple and Google make a compelling case for balancing security and privacy against the benefits, and we have nothing to add. Likewise, the risks associated with forced interoperability are well documented. Users must be confident in the security and privacy of their devices, or they will change behaviours. **Of note, smaller developers with unknown brands are the most likely to suffer if consumers begin to worry about device security.** If users are reluctant to load an unfamiliar app, startup developers are effectively blocked from the market. Dominant developer brands only stand to benefit as user trust falls, and we would encourage the CMA to differentiate between these two groups with conflicting objectives..

From a competitive standpoint, forced interoperability removes incentives for innovation, slows the creation and adoption of new features, and generally makes devices less secure. **It also raises barriers to new apps from small developers seeking to challenge interoperable features** like messaging and the like. We encourage a thorough assessment of the market harm of forced interoperability on developers in aggregate, with a specific focus on how it will harm the new developer ecosystem, startups and challengers.

On Android licensing practices, the Developers Alliance was an intervenor in support of the Android ecosystem in the EU General Court's recent hearing in Case T-604/189 Google and Alphabet v Commission (Google Android).[1] We refer you to our briefs and arguments in the matter to the extent they are appropriate to this inquiry.

On the design of prompts and systems to promote user privacy choice, we are particularly encouraged by the work Apple and Google have done on privacy nutrition labels.

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[1] https://curia.europa.eu/juris/document/document.jsf?text=&docid=218961&pageIndex=0&doclang=EN&mode=req&dir=&occ=first&part=1&cid=1347773

Developers in general would defer to ecosystem owners as those with the resources and ability to enforce programs that comply with such regulatory goals.

On separation of app development from ecosystem ownership, we refer to our intervention in the above mentioned Google Android case.

Conclusion

Developers rely on existing ecosystems to reach the market. Ecosystems provide access to users, monetization options, payment and development services, expert advice, networking, and tools and APIs specific to their OS and devices. For a developer whose competence is writing software, ecosystems provide the framework on which to build a business.

Ecosystems did not spring into existence by themselves. They are not afterthoughts designed to maintain market dominance. They are an evolution that emerged following the failure of mobile systems that adopted closed market models. They are an adaptation of open-source software principles, with ecosystem owners taking on the stewardship of the many component parts. Without ecosystems, the 3rd party developer industry would not exist.

This doesn't mean that they cannot be improved. Developers would welcome greater transparency and certainty in the policies that define what app stores allow and promote. Developers would welcome checks and balances that help amplify their voices in decisions that affect them. What they don't want are regulatory policies that would destabilize the system. Developers strongly favour small, incremental changes coupled with rigorous testing and feedback.

Above all, developers need a harmonized global system that connects them to a global marketplace - which is what they enjoy today. Significant changes driven by a single jurisdiction threaten the international framework. Alongside growing digital protectionism, restrictions on international data flows, extraterritorial laws and unrestricted financial penalties, developers see an industry under siege.

We appreciate the depth of research the CMA has presented in the interim report. We would also like to thank the CMA for the history of candid engagement they've shown the developer community. We look forward to further contributions to the CMAs work.