



Report on the open internet: operating systems, apps and app stores

The Internet is commonly considered to be a force of innovation and an important driver of economic growth: its widespread use changes the interactions of society and economy, enabling the development of new business models and far-reaching changes in the division of labour.

One of the keys to the success of the Internet is its openness to and for everyone, based on the principle of “innovation without permission”. The separation of transport layers from the application layer further allowed the Internet to grow into the flourishing ecosystem we are so familiar with today. In recent years, smartphones have increasingly become the main facilitators of Internet access. The number of smartphones in Austria has more than doubled between 2013 and 2018 and surveys show that 96 % of people aged 15-69 use a smartphone, on average around 3.4 hours per day. The ubiquitousness of smartphones in turn led to the development of apps and app stores and thus to an entire business sector in its own right. Currently valued at 100 billion Euro worldwide, this sector in its very development illustrates both the power of innovation as well as its dangers – and the negative consequences of restricting this power.

In this study, we examine apps, app stores and their use within a competition policy framework. We are particularly interested in understanding the role of bottlenecks and gatekeepers who may be able to stymie or limit innovation, competition and the freedom of development. For this reason, we have chosen a holistic approach to encompass both the demand and the supply side.

A quantitative survey collected data on consumers and their experiences, focusing on questions related to current debates on restrictions for end users, strengthening competition and the position of the demand side vis-à-vis overly powerful platforms. Qualitative structured interviews with app developers allowed us to understand the structures and mechanisms of the supply side in the context of app stores. Intensive desk research supplemented the empirically collected data, embedding it in current competition policy research and enriching the interpretation of the results of this study.

Our survey data clearly show that the world of smartphones in Austria is dominated by three device manufacturers (Samsung, Apple and Huawei) and two operating systems (Android and iOS). 7 out of 10 respondents use Android, 3 out of 10 use iOS and the majority use (a variety of) services offered by the same provider as that of their operating system. Users further incur high switching costs when changing operating systems (and/or devices). As a whole, the survey responses clearly demonstrate the existence of lock-in effects.

The majority of Internet use is mediated by apps and only about a third occurs via browsers. Apps are almost exclusively downloaded via the pre-installed app stores of the respective operating system provider. App stores are therefore a powerful



gatekeeper within the mobile ecosystem (see below for a more detailed discussion of app stores).

Regarding apps themselves, approximately a third of respondents attested to mainly having preinstalled apps on their phones – a trend which correlates with age, as older respondents generally have a higher number of pre-installed apps –, and the majority of respondents use half or more of all installed apps at least once in a while. A quarter of respondents indicated that the majority of the apps they use is pre-installed, while a third of respondents said they mainly used apps installed by themselves.

Not all apps are equal. In addition to some being pre-installed, certain apps cannot be deleted for any reason apparent to the users – even though these apps are not essential to or part of the operating system of the smartphone. 87 % of respondents felt that being able to delete any app when its usefulness ceases is important or very important. Yet around half of all respondents had at least once attempted to delete an app only to discover that this was not possible.

Multi-homing has become a very appealing conceptual tool for the assessment of competition and market entry barriers. The concept describes the practice of installing and using apps with similar functionalities in parallel and – if corresponding to the real use of consumers – alleviates a series of concerns about the problems and effects in terms of competition of the lack of interoperability of apps. Our results show that multi-homing is common to different degrees in different areas of usage. While 94 % of respondents use a single search engine on their smartphone (which in most cases, and regardless of operating systems, is Google Search), 62 % of respondents said they use two or more apps for text messaging. This is often a deliberate attempt to separate specific groups of communication partners.

Only few respondents fully read their operating system's terms of service and few are enthusiastic about adjusting the data protection settings of the apps they use. This indicates much room for improvement when it comes to knowledge about privacy protection and access to the corresponding settings. Yet data protection and privacy are important issues for consumers: 86 % of respondents feel that short and comprehensible data protection terms for apps are (very) important, while 72 % would (strongly) embrace having to adjust data protection settings only once within the operating system to make them applicable to all apps. This highlights the importance of principles set forth in the GDPR and discussed with a view to the ePrivacy Regulation, such as privacy-by-default. Another approach – to reduce terms of service and data protection statements to a maximum of one page – was suggested by the German Advisory Council for Consumer Affairs (SVRV) and could considerably improve legibility and thus transparency for consumers, enabling them to make informed and independent choices.

Interoperability and data portability for messaging services affected respondents less in comparison: approximately a third stated that neither possibility was important to them. One explanation may be found in users seeking different platforms for their communication with specific groups in order to distinguish the latter from each other, as discussed in a study by WIK. Another third however claims interoperability and data portability for messaging services are indeed very important, and 3 out of 4



respondents (highly) valued data portability when changing operating systems. This indicates that the importance of both data portability and interoperability may vary significantly from case to case.

2008 saw the birth of the first (and until today most dominant) app stores. Only ten years later, these app stores combined offer about 5 million apps worldwide. Many companies use app stores to provide apps to mediate their services, thus creating more opportunities for software developers. Alongside this expansion of traditional business relations to the digital world, app stores have provided a platform for the development and growth of natively digital businesses.

In their capacity as mediators between digital services and consumers, app stores are powerful gatekeepers. The duopoly of Google and Apple and their respective platforms, operating systems and services brings with it the risk of dependency, the potential for anticompetitive and unfair practices, the danger of market power transfer and subsequent impediments to innovation, lack of transparency and one-sided terms of service reflecting solely the interests of the issuing party. Just like other platforms, app stores may blur the lines between their role as a vendor of apps developed by itself and as an intermediary platform for third-party apps. Many of these risks have been discussed intensely during competition proceedings, and all are well documented. In the course of interviews with developers in Austria, however, we discovered that our interviewees believe the advantages of this system outweigh the disadvantages. Although they encountered many obstacles as start-up founders or employees – such as opaque search functions on the platform, difficulties in communication with customers and advertising, non-access to certain application programming interfaces (APIs), as well as commissions in the case of paid apps –, these were deemed acceptable trade-offs in most cases. One of the possible explanations may be their size: as start-ups, their competitive landscape differs starkly from that of larger companies, and they remain – to use the words of one interviewee – “below the threshold of competition perception”. Larger app providers and subscription-based apps may face additional difficulties, such as discrimination (only certain types of apps may be monetised) or margin squeeze.

The European Union’s Platform-to-business regulation, which will come into force towards the end of 2020, aims to tackle these app-store-specific issues and a variety of problems related to digital platforms, e.g. their potential for tipping into monopolies and market-entry barriers for new companies. When comparing this regulation to that on net neutrality, the stipulated laws are much less explicit and primarily aimed at increasing transparency. It is already now evident that the existing regulations will not sufficiently prevent anticompetitive behaviour or abuse of market power, and core issues will not be resolved. It is equally evident that platforms will increasingly become essential institutions in different parts of society due to indirect effects and their multiple and various purposes. The results of this study and the issues discussed throughout make it clear that a multitude of problems exist on different layers which will require close monitoring and possibly adaptations to existing legal frameworks. Platforms and therefore app stores are highly complex economic institutions that need to be evaluated on a case-by-case basis, and their increasing importance calls for active monitoring and supervision – which should henceforth gain a stable basis.