1 Chief Economist, DG Competition, European Commission. Before joining the Commission, the author worked for VISA and against Google in both the Russian and EU Android cases. The views presented in this paper are the personal views of the authors. They do not reflect the view of the European Commission, DG Competition or the Chief Economist's team.
I. INTRODUCTION

While the digital revolution has brought many new products and improved on the delivery of goods and services, it has also raised concerns about increased concentration and potentially abusive conducts that might not be captured adequately by a traditional application of competition policy tools. Of particular note is the increasingly powerful position of so-called digital “gatekeepers,” i.e. digital platforms with significant market power – or even a dominant position – in at least one of the markets in which they are active. While the GAFAMs are the posterchildren of digital gatekeepers, other strong digital players such as various booking platforms, matching platforms or marketplaces might also well fall within the category, now or in the near future.

The competitive issues raised by digitalization of course extends beyond the realm of “platforms” – in the domain of standard setting for example – and they have implications for the toolset of competition authorities, from merger review to state aid. However, in this short note, I will limit myself to the “antitrust” part of the EU’s portfolio, with special emphasis on gatekeepers. In doing so I will discuss not only the application of traditional antitrust instruments within the framework of Articles 101 and 102, but I will also comment on the possible emergence of a new “market investigation” tool and the necessary balance between traditional approaches, the new tool and ex ante regulation.

I begin by discussing what I see as the main characteristics of the digital economy in general and digital platforms in particular, briefly sketching out why these features matter for competition policy. I then briefly review the main antitrust actions in the digital sector before coming back in more detail to some of the concerns raised in the first section. I conclude with my thoughts as to how “new instruments” might help us address the specific competition issues raised by the digital sector.
II. FEATURES OF THE DIGITAL ECONOMY

While the digital economy shares many relevant competition characteristics with non-digital sectors, it is nonetheless with a number of features that make it sufficiently distinct to warrant a separate analysis. In order to set up the scene for the following discussion I briefly review these features. I start with aspects that seem fairly unique to the digital sector and then move to characteristics which, although common in other sectors, seem to assume a particular importance in a digital context.

A. Unique” Features

“Digital” technologies deal with data, be it accumulated data sets, or the information exchanged in any interaction over electronic means of communication. So, data treatment is inescapably at the core of any digitalized sector. What makes the digital economy special though is the manner in which it deals with data: data can be stored and made accessible in huge quantities, they can be processed or analyzed at high speed and they can travel over large distances in the blink of an eye. These characteristics have consequences for competition analysis.

Firstly, they affect market definition both because physical distance becomes less relevant (geographic markets) and because the availability of consumer-specific data enables individually-tailored offerings. Secondly, because data is central to the digital sector, the creation, accumulation, sale, and use of data can have important implication for competition. As discussed further below, this raises important questions about the nature of the data, their ownership, and their transferability. Finally, both organized data storage and data processing at speed and scale rely on the use of ever more sophisticated algorithms. Unfortunately, algorithms are often complex, are constantly modified and, since they can be key competitive advantages, they are closely held. This makes both the detection of abusive conduct and the enforcement of effective remedies challenging.

B. Other Relevant Features

The digital economy is also characterized by a few factors, which are also found in other sectors, but take on a special importance in the digital context. The main such feature is the ubiquity of “platforms,” i.e. of undertakings simultaneously involved in several interdependent markets. In the digital world, such interdependence has two major sources: the fact that there are direct or indirect network effects across markets linked to the platform and the fact that information collected in one market can be economically valuable in another market. So again, potential economies of scope and scale in data matter. Still, the greatest concern stemming from the prevalence of platforms, some of which have significant market power, is interoperability: interoperability between different sides of the platform so that undertakings with more limited scope are not at an undue disadvantage, and compatibility of data. Ensuring that data exists in a well ordered (standardized?) format has two main advantages. Firstly, it facilitates the emergence of “data markets” and data intermediaries. This enables smaller players to (at least partially) bridge the data gap with larger players. Secondly, it also simplifies potential data-sharing remedies if, for example, some of the data controlled by an undertaking were judged to constitute an essential facility.

A second feature of interest is that, currently at least, most digital sectors are “fast moving.” This has a number of countervailing implications for competition policy. On the one hand, one cannot assume that large market shares can be sustained for very long, as the risk that a current position is undermined by drastic innovation might be substantial. This, of course, has been the mantra by which many large digital platforms defend themselves against a finding of dominance. On the other hand, precisely because new technologies usually offer quite significant improvements, consumers are keen to switch to new, innovative platform. In other words, entry, at least entry based on drastic innovation, might impose a more significant competitive constrained than in other sectors. What is the correct balance between these two opposing forces, and how might such a balance be achieved?

Finally, whenever some of the cross-platform externalities relate to the supply of complementary products (“indirect” network effects), platforms might become dominant in the corresponding aftermarkets. The best known of such digital aftermarkets are probably the “apps stores” run by both Apple and Google on their respective IOS and Android platforms. Of course, the extent of the market power enjoyed in these markets depends itself of the degree of interoperability existing between various platforms.
III. ANTITRUST

Over the last five to ten years, competition authorities have investigated a number of potentially anti-competitive conducts by digital platforms. These can be organized into data-related cases and other, more traditional cases.

A. Non-Data Cases

So far, the investigation of digital platforms has focused on three broad types of conduct — and hence of theories of harm.

1. Theories of Harm

As discussed above, hotel booking platforms were investigated for their contractual MFN clauses. While not an explicit agreement between horizontal competitors, such clauses soften competition between rival platforms by modifying the hotels’ optimal response to platforms offering reduced commissions. We are therefore in the traditional category of “clauses that reference rivals,” such as “meet any price.” While such clauses are generally considered anti-competitive they might also be a defense against “show rooming,” which is the practice of getting product-related information at a full-service site before completing the transaction, at a better price, at a bare-bones site. The only specifically “digital” aspect of these cases is that such “free riding” might be more prevalent in the online world than when brick and mortar outlets are concerned, as potential clients can “travel” more easily from one seller to the next.

Digital platforms have also been investigated for allegedly leveraging their dominance in one market into another related market. In the Google Android case, for example, both the Russian antimonopoly Bureau and DG Competition is also, at first sight at least, a traditional bundling/exclusive dealing case where dominance in one market (Google store) was used to improve or entrench Google’s position in mobile search. Interestingly, the formal economic theory of harm had to make allowances for the fact that Google does not normally charge for users’ access to either their browser or their store. While such zero, or even negative, prices on one side of the platform is not unique to the digital world, it is still more likely to arise in this context: if marginal costs are low, accounting for cross-platform externalities can easily lead to no charge or even bonuses (payment cards).

The growing number of cases involving “self-preferencing” fall in the same broad category in the sense that dominance in one market is used in order to help the digital platform succeed in other market. However, this involves direct deterioration of rivals’ access to a crucial input rather than contractual means such as bundling or exclusive dealing. I believe that it is important to underline that, in many respects, “self-preferencing” is not a new theory of harm. It is just the application of traditional input foreclosure/access degradation theories of harm to a context where access is managed through opaque algorithms that the dominant platform can readily manipulate to its advantage.

The fact that important aspects of the daily competitive conduct of some digital platforms are driven by non-transparent algorithms is problematic indeed, both for establishing competitive harm and for finding — and enforcing — effective remedies. The Google Shopping case illustrates these difficulties. Without direct access to and, crucially, complete understanding of the search algorithm, determining whether or not price comparison sites were actually discriminated against is not an easy task. Moreover, even if one observes a change in the treatment of those sites overtime, one needs to determine that this was not the result of a legitimate change in the ranking algorithm. Moreover, if the algorithms are also modified for legitimate business reasons, one must also examine whether there was any other way of pursuing a legitimate business objective with less collateral competitive damage. Carrying out these tasks required enormous use of resources for DG Competition. As for remedies, the flexibility of algorithms makes it relatively easy to achieve a similar anticompetitive effect without infringing the formal commitments or, at least, without making such a breach obvious and hence easy to monitor.

Other theories of harm depend on the business model of the digital platform. There are two broad templates. In the first approach, most of the platform’s activities are aimed at gathering data, which are then mostly monetized through online advertising. Because data is so central, issues relating to the advertising market will be (briefly) touched upon in the next section. The second dominant business model is that of the

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2 Outside of these three main categories of conduct, one must still mention the VISA, Mastercard and Amex cases. Clearly though the main theory of harm relating to the interchange fee or to contractual clauses such as the no surcharge rule where not “digital” in nature.

**digital marketplace.** This model has two important variants, one where the platform is mostly a marketplace (think Amazon) and another where the access to the marketplace involves the acquisition of hardware and/or operating systems (Apple being the purest example). This second business strategy naturally leads to *aftermarkets.*

Overall then we see that, so far at least, non-data antitrust cases in the digital sector have not in fact focused particularly on the specific features of digital sectors discussed at the beginning of this note. In this sense, while we can already identify a significant number of antitrust cases in the digital sector, one might say that the era of digital antitrust enforcement has barely begun. This, however, does not mean that these “traditional,” cases do not themselves have a strong “digital” flavor, as they at least consider specific aspects of pricing and platform organization in the digital sector.

2. Antitrust versus Regulation

Over the last several years, there has been a growing clamor to regulate some aspects of the behavior of large digital platforms. This is coming to a head with DG Competition’s recent consultation about the introduction of a “new competition tool)” and DG Connect’s own regulatory plans. While the final form of any regulation and of its relationship with antitrust is yet to be determined, some clear principles are emerging.

*Ex ante* regulation offers three main advantages over competition policy: it saves resources, it is faster, and it generally provides greater legal certainty. Regulation is also best applied to conduct that has clear-cut implications for competition and consumer welfare and can be applied to a sufficiently large, and well-defined, population of undertakings. This creates some trade-offs. On the one hand, regulation can react quickly to the evolution of the industry, but a fast-moving sector is also likely to accelerate the obsolescence of current rules. This introduces a trade-off between responsiveness and legal certainty. The scope of application of digital regulation also requires some careful balancing. Limiting its application to a few undertakings might help find types of behaviors that are uniformly harmful or pro-competitive across all undertakings. The larger the set of sectors or undertakings to which the digital regulation would apply, the least ambitious this regulation can be as it can only apply to the “common denominator” of good and bad conducts. In this respect, it seems worth remembering that the GAFA themselves display such variety in terms of their conduct and business model that the number of rules, which could sensibly apply to all of them is already likely to be limited. There might then be little additional loss in extending the scope of application of the regulations to more digital platforms and/or digital sectors.

I would welcome a division of tasks between antitrust and regulation. From my personal point of view, regulation would be especially helpful in dealing with what we usually refer to as “unfair business practices,” over which DG Competition does not have jurisdiction and with matters of transparency. So, for example, transparency in the rules applied by marketplaces and robust appeals procedures would seem to be a low-hanging fruit. One might also set up basic about “display boxes” which are a feature of several platforms, at least requiring transparency in the criteria applied and a guarantee that these criteria are applied uniformly. More controversially, perhaps, one might even consider a broader type of “access regulation” to platforms, which might encompass technical conditions, contractual clauses, or even the amount of the access fee.

Digital platforms are complex objects, relying on technologies that make their conduct less than transparent. Complexity and lack of transparency complicate the task of developing appropriate theories of harm and of tying them to the facts. In this perspective then, “clearing the decks” by entrusting several dimensions of this environment to a regulator would, one would hope, lead to more targeted and rigorous antitrust enforcement. Clearly though, the relationship between regulation and antitrust must remain fluid. In particular, it would make sense to start with regulation of a moderate scope, adding to the rules as we learn more about other types of conduct. Some of this learning can come from traditional antitrust. Take the example of “self-preferencing.” In my view, jumping to a regulatory rule banning this type of conduct in general would be premature as self-preferencing can take many forms and entail different effects. However, antitrust investigations can improve our understanding of this family of conduct to the point where some more specific conduct can safely pass in the hands of regulators.

The development of a “new tool,” making it possible to investigate the obstacles to competition in particular digital sectors or subsectors might also smooth the interface between antitrust and regulation in two respects. Firstly, such a tool could be used even in the absence of dominance. Not only does this increase the number of investigations that could be opened, thereby increasing the speed of our learning, but it also means that potentially anticompetitive conduct, or potentially anti-competitive aspects of an industry’s environment can be identified before they have led to excessive concentration or even to “market tipping.”
B. Data Cases

1. The Problem with Data

As mentioned at the outset, the digital sector revolves around data. It is therefore somewhat odd that, while rumors of investigations abound, we have not yet much in terms significant data-related decisions (the German Facebook case standing as a rather lonely exception). There are two main reasons for this state of affairs. Firstly, property rights over various types of data have not yet been clearly established. Secondly, the use of some types of data and the competitive advantage that they might confer are still poorly understood.

Digital companies, and digital platforms in particular collect different types of data. Broadly, one can distinguish between information about how users behave on the platform and information about consumer behavior outside of the platform (e.g. through cookies). Furthermore, for digital marketplaces, one can add a third category: information about interactions between consumers and non-affiliated sellers in the marketplace. It should be clear that unambiguous property rights are a pre-condition for rigorous antitrust analysis. For example, a dominant platform demanding the right to use the first type of data (platform interaction), without providing a viable alternative for access, might conceivably be seen as an exploitative abuse if the consumer has property rights over this data. This line of argument would not be appropriate if the legal view were that this type of data is actually created by the platform. The allocation of property rights is also crucial to enable (if desired) the trading of data. In turn, such trading might enable smaller players to piece together datasets, which are not dwarfed by the data available to the larger players. Such trade would also be facilitated by the development of interoperability standards for online data sets.

In order to develop coherent theories of harm we also need to understand what the three different types of data mentioned above are, or can be, used for. We know that data about the interaction with the platform can help improve the user’s experience. This, for example seems to be the situation in search. We also know that information about a user’s purchasing behavior or about characteristics that are closely related to her purchasing behavior (and can come from outside the platform) improves the targeting of online advertising, allowing the platform to charge heftier fees to its advertising clients. But can the same data also be used for different purposes, especially when combined with other data sources? And what about data about the interaction between users and undertakings hosted by the platform? Is it used mostly to further improve matching, or can it also help the platform operator get a leg up on competitors?

Finally, we also need to understand the extent of the competitive advantage conferred by the exclusive use of specific data sets. Search provides a good example in this respect. All known search engines process millions of queries every day. This generates much information about the search behavior of users very fast. Clearly, however, the larger players – and in particular Google – have information about many times more searches that smaller rivals. While it seems clear to a layperson that more experience and data about search make it possible to further refine the search algorithm, what is relevant for antitrust enforcement is the size of the advantage conferred by larger datasets. In other words, how large are the economies of scale in the gathering of search information? The unfortunate answer is that we still do not know much about this.

In the case of search, it seems that, even for a company like Google, further data helps improve the accuracy of the search algorithm for “tail” queries, which represent a substantial part of an individual’s daily interactions with the search engine. However, how much do consumers value such further refinements? Also, how durable is this advantage, i.e. how fast does past information become obsolete? Similar issues arise for data fed to advertising matching algorithms…or indeed any algorithm.
2. (Potential) Theories of Harm

Due to the dearth of actual data-based cases, we can only discuss what seem to be the more likely theories of harm in this area.

**Essential Facility**

Many policy makers and commentators are troubled by the amount of information that some companies, in particular Facebook and Google are amassing on various aspects of the characteristics and behavior of their users. Not only might such a large data advantage help these companies entrench their position in a number of markets where they already have significant market power, but there are also concerns that they might leverage their alleged data dominance into other markets. If the data advantage of some firms becomes indeed so large as to preclude the participation of rivals in a number of markets, one could consider building a theory of harm based on the control of an essential data facility. If such theory of harm were to be confirmed, a natural remedy would be to impose some sharing of data with potential rivals. As mentioned before, the existence of standards for data transferability would facilitate such remedies.

However, as explained above, the fact that we know so little about the marginal returns from ever bigger data sets and even less about the magnitude of the competitive advantage that the merging of data sets collected in several markets offer, would make it hard to demonstrate that any current data set should qualify as an essential facility. While such demonstration might become easier as we learn more about data-based competition, I believe that, in the short to medium term, encouraging interoperability and the emergence of markets for data is likely to be a more fruitful policy approach.

**Privacy**

Where a society stands on issues of privacy is not the province of competition policy. Moreover, as mentioned above, antitrust can only perform well if there are clear rules about property rights on various type of personal data. Nonetheless, it can be fruitful to think of privacy as, partly at least, an additional dimension of product or service “quality.” In this view then, it would be entirely proper to ask whether a merger would lead to a substantial decrease in privacy for users and to impose appropriate remedies, such as data segregation or limitation on data use without the users’ consent.

The implications of “privacy as quality” for antitrust are less clear. One could conceivably worry about conduct by a dominant platform that makes it harder for rivals – or indeed any undertaking operating on the platform – to compete with high-privacy services. I am not aware of any complaint about such conduct so far. Alternatively, it would be logical to consider exploitative theories of harm for lack of provision of adequate levels of privacy in the same way as one can pursue a dominant undertaking for excessive pricing. A problem with this approach (as exemplified by the German Facebook case) is that, while economics provide natural benchmarks for what would be a competitive price, establishing an equivalent benchmark for privacy can be challenging. Moreover, given the reluctance of antitrust authorities to pursue excessive pricing cases, one should not hope that theories of harm based on “insufficient privacy” are likely to flourish.

**Raising Rivals’ Costs**

An interesting direction might be to look for conducts that deprive rivals or even platform users (potential competitors) from access to data generated by their own activity or conducts that force these undertakings to share these data with the dominant platform. Broadly speaking, both types of conducts could be construed as a manner of “raising rivals’ costs” as they weaken its relative ability to compete.
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