VIRTUAL ASSISTANTS AND THE DMA

"Hey Siri, does the Digital Markets Act now apply to you?"

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THE RISING USE OF VIRTUAL ASSISTANTS

Virtual assistants are pieces of software that can process requests based on audio, imaging, text or other cognitive-computing technologies, and can in turn use their own or third-party services to help deal with each request. Apple's *Siri*, Amazon's *Alexa*, Microsoft's *Cortana* and Google's *Google Assistant* are all types of virtual assistants.

Virtual assistants are installed on a range of devices such as smartphones, smart speakers and tablets. They are increasingly incorporated into everyday appliances like coffee machines, TVs or fridges as well. You might have used them in a number of ways, not just to connect to your favourite radio station or to stream music, but also to access information or services, to make purchases and to control home devices.

Some virtual assistants, including many smart speakers, can react only to voice commands and so are referred to as voice assistants. These use voice recognition, language-processing algorithms and voice synthesis to respond to commands to return relevant information or perform required tasks.

"HEY SIRI, WHO IS WINNING THE RACE?"

Amazon's *Alexa*, Google's *Google Assistant*, Apple's *Siri* and Samsung's *Bixby* are the most widely used virtual assistants in the EU, according to the European Commission (EC). Virtual assistants were already a common feature of smartphones, but their use has increased markedly in Europe with the spread of smart speakers such as Amazon's Echo, Google Home and Apple's HomePod. Market shares for virtual assistants vary considerably across devices and countries - language availability affects take-up - and depending on the metric used (e.g. shipments, penetration or monthly usage).

As an example, based on usage on smartphones in the US, a [Voicebot.ai report](#) showed that in 2020 *Siri* held a 45% share, *Google*

EXEC SUMMARY

The use of virtual assistants, such as Apple's *Siri* and Amazon's *Alexa*, is starting to gather momentum, but at the same time they are coming under greater scrutiny. For example, policymakers and market participants have expressed concerns about virtual assistants self-preferencing their own complementary services and using data from third parties to create similar services.

The European Commission's latest initiative to regulate large tech platforms in digital sectors, the Digital Markets Act (DMA), is likely to have important implications for virtual assistants and the services connected to them. For example, the DMA could i) give users more choice in deciding which services are set as defaults for certain requests on virtual assistants; ii) impose obligations on virtual assistants to share certain data with third-party services; and iii) introduce restrictions on self-preferencing.

This article considers the difficulties of applying the DMA as it relates to virtual assistants. These include i) the possibility that the EC could designate up to three or four companies as gatekeepers; ii) the extent to which the DMA will cover the concerns raised by the EC's consumer Internet of Things sector inquiry; and iii) the implementation challenges specific to virtual assistants in light of their differences with the precedent set by mobile handsets, for which the EC considered similar obligations.

Assistant 30% and *Alexa* 18%. However, it has been reported that in the case of smart speakers in the US, Amazon held an estimated 69% share of installed devices, compared to Google's 25% and Apple's 5%. Customer survey results from AudienceProject also show a big variation in smart-speaker preferences between countries: over 70% of smart speaker owners in the US, the UK and Germany have an Amazon Echo, compared to less than 20% in Denmark, Sweden and Norway, where Google and Sonos have a higher market share. This highlights both the difficulty in defining shares and also the variation from one country to another, even within Europe.

INCREASED REGULATORY SCRUTINY

Policymakers have become increasingly concerned that the evolution of the market for virtual assistants may harm competition. In June 2020, the EC launched a sector inquiry into consumer Internet of Things (IoT) services, including virtual/voice assistants, smart-home devices and wearable devices, to better understand potential competition questions in the sector. Some of the key concerns raised included:

- The self-preferencing of the virtual assistants' own services when dealing with a request. For example, each of the major virtual assistant providers is also active in complementary markets, such as music streaming, search, messaging and navigation applications. Concerns were expressed that the virtual assistant favours its own services or products over third-party services.

- The exclusivity requirements for virtual assistants, which might limit the scope for using different virtual assistants on a given device.

- The position of virtual assistants as intermediaries between users and services could allow them to control user relationships and interactions, thereby leading to disintermediation.

- The extensive data to which virtual assistants have access and how this might be used as an advantage over third-party services.

The EC's reported recent investigation into Google, to assess whether it may be forcing device makers to use *Google Assistant* as the default virtual assistant on Android devices, further highlights policymakers' growing scrutiny of virtual assistants.

The purpose of the EC's DMA is to address concerns relating to a lack of contestability and fairness in digital markets. It defines a set of obligations and rules for providers of Core Platform Services (CPSs) that meet certain thresholds within the EU. CPSs are services which serve as an important gateway for business users to reach end users. Virtual assistants were not included as a CPS in the initial draft of the DMA but have been added in the final text, likely in part due to the issues highlighted by the EC's consumer IoT sector inquiry. As a result, providers of virtual assistants will face increased regulations and obligations if they are named as gatekeepers.

The designation of virtual assistants as a CPS raises important questions about who the gatekeepers might be, how the DMA might be applied to those possibly assigned as gatekeepers for virtual assistants, and the extent to which the DMA addresses concerns raised about virtual assistants in the consumer IoT inquiry.

"HEY SIRI, WHO ARE THE LIKELY GATEKEEPERS FOR VOICE ASSISTANTS?"

The four largest digital platforms have made significant investments in their virtual assistants - Google in *Google Assistant*, Apple in *Siri*, Amazon in *Alexa* and Microsoft in *Cortana* - though it is not clear who is winning the battle for consumers. Interestingly, the strength of different virtual assistants varies widely depending on the device. For example, Apple is well placed to offer voice assistants on smartphones due to its large share of that market, but it is much weaker in smart speakers because it offers fewer products and has a smaller market share.

The DMA designates a company as being a gatekeeper for a CPS if it meets a range of quantitative thresholds: annual EU turnover of over EUR7.5bn in each of the last three years or average market capitalisation of at least EUR75bn in the last financial year; at least 45m active monthly end users; and at least 10,000 yearly business users in the EU.

This approach represents a relatively mechanistic way of identifying gatekeepers. The four big digital platforms will easily satisfy the turnover and market capitalisation criteria. Apple, Amazon, Microsoft and Alphabet (Google's parent company) each has a market capitalisation of over EUR1trn and generates substantial revenues in Europe. So whether they will be considered as gatekeepers for virtual assistants will depend on user numbers.

In general, the EC's threshold for the number of end users is relatively low for CPSs that have widespread take-up (45m monthly active users represents only around 10% of the EU's population). Further, based on the DMA's annex, a user needs to use a voice assistant only once per month to count towards the threshold ("*a user who engages with the virtual assistant in <u>any way</u> at least once in the month, such as through activating it, asking a question, accessing a service through a command or controlling a smart home device*"). Finally, many people may use more than one virtual assistant, thus counting towards the threshold for a number of firms. For example, a given user may have Amazon *Alexa* on their smart speaker and *Google Assistant*/Apple *Siri* on their smartphone.

Provided the quantitative thresholds are met, there could be as many as four gatekeepers for virtual assistants at some point in the future, especially if the market and usage continue to grow at a fast rate. In contrast, the DMA covers a number of other CPSs that would be expected to have only one or two main players, such as general search (Google) and mobile app stores (Google and Apple).

HOW MANY GATEKEEPERS IS APPROPRIATE?

There is a question whether it would be appropriate to have up to four gatekeepers for a given service. Many markets are seen as being relatively competitive if there are three or four significant players, e.g. mobile markets. Only a more detailed analysis of competition would be able to assess whether there is a lack of contestability and fairness in a market with four (or three) players. For example, an analysis would be needed of the scope for switching between virtual assistants, the role virtual assistant providers' ecosystems may play in the choice and use of virtual assistants, and the degree of multi-homing. A further consideration is that the voice assistant market is at a relatively early stage of development; it remains uncertain how the market might evolve both in terms of market shares and the level of user interaction. And, as indicated above, the same company may be in significantly different positions in different EU markets. As a result, it may be questionable to what extent one or several virtual assistant providers may already have entrenched market power in such a dynamic market as the EU as a whole.

Given the focus on the quantitative thresholds for defining gatekeepers under the DMA, an analysis of these sorts of considerations would seem unlikely at this stage. If this is indeed the case when the EC applies the DMA to the virtual assistants CPS, a more careful engagement with relevant stakeholders may be needed in relation to Article 5 and 6 obligations.

WOULD THE DMA COVER THE CONCERNS RAISED BY THE IOT SECTOR INQUIRY?

Given the EC initially proposed the DMA without including virtual assistants as a CPS and before it published the final report from its consumer IoT sector inquiry, it is useful to consider to what extent the DMA's obligations overlap with the types of concerns raised by that inquiry.

If any firms are designated as gatekeepers for virtual assistants, it appears that the Article 5 and 6 obligations they would have to follow under the DMA would overlap with some, but not all, of the concerns raised about virtual assistants. These focus primarily on fairness, namely:

- concerns around the ability for third parties to gain effective access to voice assistants *(Article 6(3) on default settings, Article 6(7) on effective access to the same hardware and software features accessed or controlled via the operating system or virtual assistant as first-party services, Article 6(10) on providing business users with effective access to data generated whilst their services are being used)*;

- concerns that first-party services (vertically integrated services managed by the same company as the virtual assistant) may receive favourable treatment compared to third-party services ("self-preferencing") *(Article 6(5))*; and

- concerns about a third party's data being used by the virtual assistants to create similar services ("Sherlocking") *(Article 6(1))*.

However, some third parties may still consider that virtual assistants will continue to have an advantage unless access to more of the gatekeeper's relevant data is provided.

The EC's consumer IoT sector inquiry expressed some concerns about the providers of virtual assistants having a disproportionate influence on, and ability to control, approval processes for new applications on voice assistants. However, it is unclear whether the DMA, despite imposing fair and effective access to app stores, would lead to a fairer and/or more flexible approval process, as third parties may still feel that they are required to accept non-negotiable terms and conditions. But what would the alternative be? Whether it is desirable for the DMA to try to address such concerns depends on two things. First, whether it is realistic to move away from a standardised approval process when there is a constant stream of new applicants. And second, whether the approval criteria could be changed in a way that maintains the quality, security and abundance of applications without adding significant costs for both parties.

In addition, the consumer IoT probe said that virtual assistants, by functioning as intermediaries, could lead to disintermediation between applications and their end users. The DMA does not seem to address such concerns, at least not directly. The IoT inquiry also expressed some reservations about the lack of standardisation for voice assistants. However, this issue may be dealt with by means of other tools and ongoing reviews by the EC.

The DMA seems to address a number of the more important concerns raised in relation to contestability for voice assistants. In particular, it would appear that Article 6(3) would require operating systems to present users with a choice when they first attempt to use a virtual assistant. But the DMA does not seem to tackle uneasiness about the inability to use multiple voice assistants on the same device concurrently. Simultaneous access would allow users to make separate requests to different voice assistants seamlessly and without having to make big changes to their device settings.

IMPLEMENTATION AND MEASURING EFFECTIVENESS COULD BE CHALLENGING

There will be a number of specific challenges when applying the DMA to virtual assistants. For example, users often access virtual assistants through devices that lack a screen, such as a smart speaker, which makes it more difficult to show a choice screen or provide multiple options. As a result, implementing obligations aimed at addressing concerns about self-preferencing and defaults could be difficult. For example, if the virtual assistant were to "read" out a range of service options, how would the running order be decided?

It is also worth considering the challenge of measuring the effectiveness of the DMA in relation to virtual assistants. What metric will show if the obligations are improving contestability and fairness? Given the potential technical barriers to entry, what measures other than the number of providers or challengers could be used? Deciding and tracking a metric will be important to ensure the obligations are applied appropriately and to limit costs and any unintended consequences.

"HEY SIRI, WHAT WOULD YOU CONCLUDE?"

As the usage of virtual assistants increases, so does the scrutiny that they are attracting from policymakers. Unlike a number of other core platform services, there is a plausible case that as many as three or four companies could be designated as gatekeepers for virtual assistants, even though their market position may differ significantly by EU member state and type of device. The DMA also seems likely to overlap, at least partially, with some of the more important concerns that have been raised by the EC's IoT sector inquiry.

The DMA aims to impose obligations and prohibitions on a broad range of digital services. This, combined with the fact that virtual assistants were not added until later in the drafting process, means there are still many unanswered questions about how the DMA could impact virtual assistants. How will implementation challenges be overcome? How will the effectiveness of any obligations be measured? The uncertainty dovetails with a broader issue, namely that the DMA seeks to apply the same obligations/prohibitions to a diverse set of core platform services. Importantly, all of the obligations/prohibitions that appear most

relevant for virtual assistants fall under the DMA's Article 6, which means there may be some scope to specify them more carefully. Hey Siri, that would be most welcome, don't you think?

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