



Centre on Regulation in Europe



# DMA OUTPUT INDICATORS

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## ABOUT CERRE

Providing top quality studies and dissemination activities, the Centre on Regulation in Europe (CERRE) promotes robust and consistent regulation in Europe's network and digital industries. CERRE's members are regulatory authorities and operators in those industries as well as universities.

CERRE's added value is based on:

1. its original, multidisciplinary and cross-sector approach;
2. the widely acknowledged academic credentials and policy experience of its team and associated staff members;
3. its scientific independence and impartiality;
4. the direct relevance and timeliness of its contributions to the policy and regulatory development process applicable to network industries and the markets for their services.

CERRE's activities include contributions to the development of norms, standards and policy recommendations related to the regulation of service providers, to the specification of market rules and to improvements in the management of infrastructure in a changing political, economic, technological and social environment. CERRE's work also aims at clarifying the respective roles of market operators, governments and regulatory authorities, as well as at strengthening the expertise of the latter, since in many Member States, regulators are part of a relatively recent profession.



## ABOUT THE AUTHORS



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## FOREWORD

In the dynamic landscape of EU digital platforms regulation, we are at a focal point of discussions shaping the future of implementation of the Digital Markets Act – arguably one of the most important pieces of legislation of the current times’ digital policy sphere.

With the DMA aiming for contestability and fairness in digital markets, designated gatekeeper platforms are set to unveil their compliance plans on March 2024. The European Commission, in its unique role as an enforcer, will lead the work of determining non-compliance and ensure that the DMA fulfils its ambitious goals.

However, the success of implementation will depend on the principles on which the new law will be applied. This CERRE report recommends that the DMA implementation process should be guided by the substantive principles of effectiveness, proportionality, non-discrimination, legal predictability, and consistency with other EU laws. Furthermore, the Commission will have to approach enforcement taking into account the procedural principles of responsive regulation and participation, due process, and ex ante and ex post evaluation. The report then applies those principles to series of specific DMA obligations: choice architecture, horizontal and vertical interoperability and data related obligations.

It is also essential to agree on how the Commission, gatekeepers, and third parties will engage with each other. The DMA provides a model of compliance which is not based solely on deterrence; instead, the gatekeepers are encouraged to and will comply by engaging co-operatively with the Commission and third parties. However, it is still up for question how this principle will be applied, what it expects from the stakeholders, and how the Commission itself will exercise its deterring powers to enforce compliance.

On top of it all, this CERRE DMA edition is also proposing a set of quantitative measurement indicators, so-called output indicators, each relating to a particular obligation or set of obligations, in order to better understand the impact of obligations on the relations between gatekeepers and third parties. These quantitative indicators will not represent specific targets or thresholds against which compliance should be assessed. They will neither attempt to measure the effect of changes in conduct on market outcomes for users nor, more generally, competition. These quantitative measures will be added to other evidence, such as complaints or qualitative representations from affected parties, including gatekeepers, which the Commission will consider in its compliance assessments.

This report was written in the framework of a 8-month-long, multi-stakeholder CERRE initiative entitled the ‘DMA Compliance Forum’ that created a neutral and trusted platform and facilitated dialogue among CERRE members and academics to contribute to the effective and proportionate enforcement of the regulation.

*Bruno Liebhaberg, CERRE Director General*



## 1. DMA COMPLIANCE REPORTS

The aim of the **obligations introduced by the Digital Markets Acts (DMA)** and imposed on gatekeepers is to influence the conduct of gatekeepers and, by so doing, to advance the overall objectives of **contestability and fairness** in digital markets.<sup>1</sup> The impact on competition and market outcomes will, however, also depend upon how and whether users or other firms take advantage of the new opportunities that the obligations are intended to create by facilitating entry by firms and allowing users to exercise choices that have not previously been available to them. **How and the extent to which users and firms do this will be determined by whether the gatekeeper complies with its obligations but also by many other factors outside of the gatekeeper's control.**

The impact of obligations might also be expected to **change over time**, with more limited effects being seen when the DMA is first implemented and more significant effects being seen later as other firms and users take time to respond to the opportunities that arise.

The European Commission is responsible for enforcing the DMA and ensuring that gatekeepers comply with their obligations under Articles 5, 6, and 7. Article 8 requires the gatekeeper to produce a **compliance report** within 6 months after the designation that describes “the measures it has implemented to ensure compliance”.<sup>2</sup> These reports are then required to be updated on an annual basis. Article 8 does not specify the evidence or information which a gatekeeper is expected to provide to the Commission but it appears to envisage a description of the ‘process measures’ that have been implemented by the gatekeeper. Article 26 also requires the Commission to “take the necessary actions to monitor the effective implementation and compliance with the obligations laid down in Articles 5, 6, and 7” without specifying what those actions might be.

The Commission is consulting on what it calls a standard **‘template’ for compliance reports**, including the contents of those reports.<sup>3</sup> The Commission currently envisages this to be a mixture of **‘process measures’** which explain the actions the gatekeeper has taken in order to comply but also:<sup>4</sup>

“a **set of indicators** which allow – or will allow based on their future evolution – to assess whether the measures implemented by the gatekeeper to ensure compliance are ‘effective in achieving the objectives of the DMA and of the relevant obligation’, as required by Article 8 DMA, including an explanation why the gatekeeper think that these indicators are the most relevant;

any relevant **data** which can inform whether the measure is or will be **effective** in achieving the objectives of the DMA, such as, depending on the circumstances, data on the evolution of the number of active end users and active business users for the relevant core platform service and, for each

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<sup>1</sup> Regulation 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives 2019/1937 and 2020/1828 (Digital Markets Act), OJ [2022] L 265/1.

<sup>2</sup> On the key importance of those compliance reports, see J. Cremer, D. Dinielli, P. Heidhues, G. Kimmelman, G. Monti, R. Podszun, M. Schnitzer, F. Scott-Morton, A. de Streeel, Enforcing the Digital Markets Act: Institutional Choices, Compliance, and Antitrust, *Journal of Antitrust Enforcement*, 2023

<sup>3</sup> Template for reporting pursuant Article 11 DMA: <https://ec.europa.eu/eusurvey/files/7635871b-5946-4a39-b9b7-3491143f3128/a61347f2-d113-42db-a5a4-33df0fe49c28>

<sup>4</sup> Section 2.1.2 of the template, points k, r and s (our emphasis).



relevant obligation, data on the evolution of the fees and revenue share for the relevant services, the interaction of end users with choice screens and consent forms, the amount of in-app purchases, the amount of pre-installed defaults, counts of end users who switch, counts of business users who obtain data access, etc.; and any **internal systems and tools** used to monitor the effectiveness of the measure and the output of such internal systems and tools”.

This **paper recommends that the Commission should also require gatekeepers to report against a common set of ‘output indicators’**. These might be in addition to some of the data referred to above, or might substitute for some of it. In the rest of this paper, we first explain what ‘output indicators’ are, and how they are situated in relation to other types of indicators or other evidence relevant to an assessment of compliance. We then make recommendations as to how they should be implemented. A proposed list of suitable indicators in relation to Articles 5, 6, and 7 will be published later in 2023, separately.

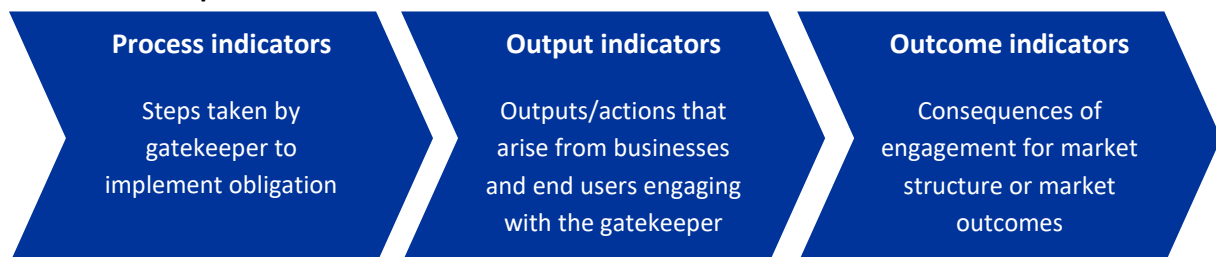
**Article 21 of the DMA provides the Commission with powers to require any information** from undertakings to enable the Commission to discharge its duties. The proposals in this paper envisage that data relating to the output indicators we propose would be requested from gatekeepers and be published by them.

## 2. DEFINITION AND FUNCTION OF OUTPUT INDICATORS

### 2.1. Definitions

**Output indicators** should provide the Commission with evidence, **alongside other information** submitted by the gatekeeper, third parties, or assembled by the Commission itself, **that inform an overall assessment of whether the gatekeeper has complied** with the relevant obligation (as well as potentially allowing the Commission and the gatekeeper to diagnose why non-compliance has occurred and what steps might be required to remedy any breach).

One approach to **assessing compliance is by reference to the processes** that are adopted by the gatekeeper to comply with the rules, on the assumption that these processes will thereby influence the gatekeeper’s conduct and market outcomes. Another view is that **compliance should be assessed by reference to the actual outcomes** or changes in competitive conditions or market structures which result from the gatekeeper’s conduct, with the means by which they are achieved being left unexamined and for the gatekeeper to determine. These approaches are not mutually exclusive. The **output indicators** that we propose can be thought of as being **situated downstream of process indicators but upstream of outcome indicators**:







**Output indicators** are intended to capture both the extent to which conduct by the gatekeeper has created new opportunities for firms or users *and also* the extent to which firms or users have engaged with those opportunities with respect to a particular gatekeeper. In contrast, **outcome indicators** will measure how market outcomes as a whole are affected by these outputs, such as how prices or market shares change in response to action being taken by one or a number of gatekeepers within a particular market or as a result of other factors that may be unrelated to the actions of gatekeepers or their compliance with the DMA.

## 2.2. Functions

Views also differ about whether compliance can or should be **assessed against particular targets** that are specified in advance or whether the focus should be on the **direction** of travel rather than any specific threshold. The output indicators we propose are not targets. They are intended to help the Commission (and gatekeepers and third parties) understand **what is happening in a dynamic sense rather than to establish whether a gatekeeper can be said to have complied with its obligations or to have achieved a particular target**. Output indicators are intended to provide information about the impact of changes in the gatekeeper's conduct, particularly over time, and the overall direction of travel rather than a 'snapshot' assessment.

An important feature of output indicators is that, provided the methodologies and metrics are specified in advance and remain **consistent through time**, they will allow the Commission (and gatekeepers and third parties) to understand how the effects of various measures being taken by the gatekeeper are changing over time.

They are also intended to **allow for comparison or benchmarking between gatekeepers** providing the same Core Platform Service, albeit this should only provide a basis for further investigation of differences in outputs rather than allowing for any immediate conclusions about compliance to be drawn from such a comparison. We also recognise that comparisons concerning some CPS and some obligations may be less appropriate and more challenging than others. This may be the case with respect to 'online intermediation services' where the business model adopted, market conditions faced or end or business users served by one gatekeeper may be quite different from those of another. This could mean, for example, outputs indicators with respect to Article 6(9) DMA (i.e., porting of data) may be quite different for a gatekeeper providing a service in a market in which multi-homing is commonplace from a gatekeeper providing a service in a different market in which it is not. We, therefore, recognise that comparison for some CPS may not be appropriate or possible either because the gatekeepers providing the CPS operate in different markets and serve different users or because only a single gatekeeper has been designated in respect of that CPS. On the other hand, comparison will be useful when several gatekeepers provide the CPS under similar market conditions and to the same groups of business and end users.

**Comparison is more difficult with respect to process measures**, which may differ significantly between gatekeepers, or if different gatekeepers are left to propose or adopt their own indicators (as the Commission's draft standard template for compliance reports currently seems to envisage). **Outcome measures** will capture the aggregate effect of the implementation of measures by all



gatekeepers on the market, but it may be impossible to attribute these outcomes to actions taken by any individual gatekeeper. Output indicators avoid both of these challenges.

### 2.3. Limits

However, it is important to note that **output indicators have some shortcomings**. First, output indicators may provide a measure of the consequences of a user's interaction with the gatekeeper (in terms of switching or providing consent) but they do **not offer any assessment of the users' experience** when doing so (in terms of whether they understood the choices presented to them or the basis on which they made their decision or did not act). Process indicators may assist here, but other investigative tools may also be required. Process indicators may be required to assess the extent to which compliance is or is not inhibited by the gatekeeper taking measures that it justifies as being needed to ensure the **integrity of hardware or operating system or security** in relation to third-party party apps or app stores, as provided for in Articles 6(4) or 6(7).

Second, some output indicators may refer to aggregate outputs or averages, which may **disguise important underlying variances**. For example, Article 6(5) relates to organic search result rankings across all search categories but this may disguise significant variances in outputs between these categories<sup>5</sup>.

Third, in common with outcome indicators, output indicators **may be influenced by factors other than the conduct of the gatekeeper** or their compliance with the DMA obligations. However, unlike outcome indicators, these factors are likely to be common to all gatekeepers with respect to the indicator in question, meaning that comparison between them may still pick up differences that are attributable to the conduct of the gatekeeper itself rather than these other factors. Gatekeepers will obviously have an opportunity to explain the factors which may account for such differences (e.g. over time or between gatekeepers in the same time period).

Therefore, European **Commission will need to use the output indicators, alongside other evidence**, to decide whether the steps which the gatekeeper has taken and the outputs which result mean that the gatekeeper is or is not complying with its obligations at any particular point in time. Output indicators are intended to perform a complementary (but important) role in the Commission's compliance assessment alongside other evidence that it may collect or that the gatekeeper or others may submit.<sup>6</sup>

We recommend that the Commission give further consideration as to what **other evidence is required to complement the output indicators** and the gatekeeper compliance reports. This could include the use of **surveys or A/B testing** to allow the Commission (and others) to better interpret indicators. For

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<sup>5</sup> In the absence of industry-agreed categories for search queries (e.g. travel, shopping) we do not propose further indicators for Art 6(5) at this stage but such data may be submitted by gatekeepers as part of the compliance report.

<sup>6</sup> One important issue that has arisen during this project is whether output or outcome indicators are required to assess the extent to which the DMA obligations lead to users replacing a service provided by the gatekeeper with a service provided by another service provider (i.e. single-homing) or whether implementation leads to use of multiple services (i.e. multi-homing). This may have important implications for the way in which competition might develop but it is not something directly relevant to the compliance assessment which the Commission is required to undertake.



example, output indicators that suggest that end users have been unable to benefit from the choices which the DMA obligations are intended to confer will need to be interpreted by reference to other evidence on whether end users were able to exercise a choice but chose not to do so whilst indicators which suggest that end users have been able to and have exercised a choice may not reveal how well informed they were when doing so. If survey or A/B testing evidence is to be used in this context, then we recommend that the gatekeeper is required to consult with the Commission before the survey or testing is undertaken and that the **Commission first approve the methodology** and approach. This does not preclude gatekeepers from submitting other surveys or testing evidence that they consider relevant to the Commission's assessment of compliance, and we would expect them to do this.

## 3. SPECIFICATION AND IMPLEMENTATION OF THE OUTPUT INDICATORS

### 3.1. Specifications

Quantitative measurement for the purposes of assessing compliance cannot of course start until gatekeepers have taken steps to comply with their obligations<sup>7</sup>. However, we recommend that the **indicators be specified by the Commission in advance of the implementation of the DMA** (which would differ from the template for the compliance report itself, on which the Commission is currently consulting) rather than, for example, waiting until the first compliance reports are produced or data is published. This may allow gatekeepers to take their output indicator reporting obligations into account when designing the processes to ensure compliance and, perhaps more importantly, it will provide a baseline reading prior to implementation against which subsequent measurements can then be compared.

It would be desirable if the **initial set of output indicators were to be adopted following a process that involves participation by all stakeholders**, as this CERRE project has sought to do. This is particularly important because some of the data which we envisage gatekeepers would collect and publish using output indicators as a benchmark may not be collected by some gatekeepers in the ordinary course of business, although we expect that much of it would. During the consultation with the Commission, it will be open to gatekeepers to make representations to the Commission as to any additional costs they expect to incur in producing particular indicators and the practicality of doing so. We also recognise that the consultation of the Commission will not avoid disputes about how a particular set of measurements should be interpreted later, what conclusions should be drawn from them, or how much weight should be attached to them relative to other evidence.

It should also be noted that for a number of obligations, we consider that no appropriate quantitative indicator exists, or that outputs are better assessed using other evidence. Output indicators are intended to be informative about a relevant aspect of the obligation in question and to contribute to

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<sup>7</sup> This raises a question of when the relevant time period should start from, since some gatekeepers may begin to implement their obligations, and the effects may be observed, in advance of the deadlines set by the DMA. Our recommendation is that gatekeepers should be expected to collect data for indicators in the month *before* they take steps to comply so as to provide a baseline measure against which subsequent measures can be compared. We are also aware that some outputs may be subject to seasonal variation and would expect gatekeepers to indicate this, if relevant, when publishing the data.



an assessment of compliance, as well as being capable of being produced by the gatekeeper based on data that we expect it to collect and to hold. The **list is not intended to be exhaustive and may need to be revised in light of experience** of their application or as changes are made to obligations, although it is also important that indicators remain consistent and relatively stable over time and are not subject to regular change.

In order to enable comparability and ensure early implementation, we recommend that **gatekeepers are required to adopt the same output indicator for each obligation** under Articles 5, 6, and 7. This may require the European Commission to issue a decision under Article 21 which specifies the indicators against which the gatekeeper, or gatekeepers in general, is required to report.

It is also important that the **data is sufficiently disaggregated** to be informative and to allow third parties to understand whether their own experience may differ from that of the market as a whole.

At the same time information that is published should **not reveal commercially sensitive information to the material detriment of either the gatekeeper or any third party**. In particular, a question arises as to whether requiring gatekeepers to report against certain output indicators<sup>8</sup> would require them to have access to information about the functioning of third-party applications and services which they would otherwise not be expected to have access to in the normal course of business and which may be of commercial value. It would not be desirable if a requirement to produce output indicators to assess compliance were to lead to the gatekeeper obtaining access to such information. We recommend the Commission assess each indicator to ensure that its production does not require disclosure of commercially sensitive information to the gatekeeper which would not otherwise occur.

### 3.2. Implementation

The Commission will also need to consider how frequently output indicators should be produced and published. One of the motivations for the DMA is that existing approaches have been too slow in assessing and remedying issues that arise in fast moving digital markets. This points in favour of more frequent publication. Once the gatekeeper has implemented measures to collect and report the relevant data, we do not think that requiring regular reporting and publication of the output indicators will impose any significant additional costs upon the gatekeeper. We, therefore, recommend that **gatekeepers be required to report against output indicators on a quarterly basis**. We consider that quarterly output indicators would provide the European Commission with useful insight into the effects of the implementation of the DMA obligations in the intervening period between annual compliance reports.

We further recommend that the quarterly output indicator reports be **reviewed and approved prior to publication by the Compliance Officer of the gatekeeper** as part of their function under Article 28(5) (as the Commission envisages for the annual compliance report). The quarterly report should explain the methodology adopted by the gatekeeper in its production and highlight any changes in methodology from the previous relevant period.

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<sup>8</sup> For instance, Art 6(4) indicator relating to third party apps downloaded from a third-party app store.



In circumstances where the Commission has reasonable grounds for thinking that the gatekeeper had failed to produce an output indicator in the manner specified by the Commission (e.g. has interpreted the measure in a different or more favourable way without seeking guidance from the Commission) then the Commission should consider requiring an **independent audit** of the output indicator report before it is supplied to the Commission, exercising its powers under Article 26(2) to do so.

We recommend:

- Output indicators are reported by the gatekeeper to the Commission on a country by country basis<sup>9</sup> but published on an aggregated EU-wide basis;
- Output indicators that refer to third-party apps are reported by the gatekeeper to the **Commission on a disaggregated basis** (i.e. by reference to each third-party app provider subject to some de minimum threshold) but the data is published on an aggregated ('all third-party apps') basis.
- Each **third-party provider receives the output indicator data applicable to its own services** from the gatekeeper (on a confidential basis) at the same time as the aggregated data is published.
- We have also considered carefully where whether output indicators should be disaggregated by reference to the platform over which the CPS is consumed (e.g. smartphone vs PC vs digital assistant). Whilst there may be legitimate reasons (e.g. security or other technical considerations) for the implementation of the obligations to differ between, for example, the smartphone and PC environment, we have concluded that it would be useful to compare output indicators relating to the same CPS and gatekeeper and obligation, as applied on different platforms. We, therefore, recommend that output indicators are reported by the gatekeeper to the Commission on a **platform-specific basis** (smartphone, PC, TV, and so on) and that they are published by the gatekeeper on this basis.

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<sup>9</sup> We recognise there may be some issues with end users who interact with the gatekeeper whilst roaming, but do not consider these are likely to have a material effect on the results however treated in the report



## EXPLANATORY NOTES

Below is an illustrative list of output indicators that might be adopted by gatekeepers or requested by the European Commission. The current version of the European Commission's Compliance Report Template for gatekeepers does not require gatekeepers to adopt output indicators nor specify which indicators might be appropriate. The list below is extensive, with some Articles having many more indicators than others (and some having none at all). We expect that only a sub-set of indicators would be adopted, at least initially, particularly if a common set of indicators for all gatekeepers were to be specified by the European Commission. We also expect that the list could be modified over time as some indicators become less relevant or otherwise prove inappropriate.

The purpose and function of output indicators is further discussed in the accompanying CERRE paper on Output Indicators: they are intended to inform the assessment of compliance, which we expect to also rely upon other qualitative data. We would expect gatekeepers to wish to comment on figures that are produced (as part of the Compliance Report) in order to inform how they might be interpreted and what weight might be attached to each. Third parties in receipt of a non-confidential version of the Compliance Report may also wish to comment and we assume that output indicators would generally be presumed not be confidential in this context.

Some indicators in the list below measure flow or the rate of change from one period to another and some measure stocks or the cumulative impact of the measures to date. As explained further in the accompanying paper, output indicators are intended to allow the Commission (and others) to observe changes in the effect of measures taken by the gatekeeper as third parties, including end users, engage with them over time. Some indicators are intended to aid understanding of how and why end users or third parties may or may not be engaging with measures, although other sources of evidence, such as surveys, may also be helpful in this regard.

Most indicators would be expressed (and published) as a percentage in order to enable comparison of the common indicators between gatekeepers, which we consider an important feature of our proposal and which is discussed further in the accompanying paper. However, care will be required when interpreting percentage figures that are based on low sample sizes or for which the sample size is changing significantly from one period to the next (although in the majority of cases we expect the samples to be both very large and relatively stable over time). Gatekeepers would be expected to supply the underlying data from which the percentages are derived to the European Commission, but not to publish it. Some indicators measure the volume of output (e.g. % of advertising spend or % of apps downloaded etc) and some measure the proportion of users (e.g. % of users) without distinguishing between the significance of different users. The impact of a provision on competition will of course depend both on the number of users taking advantage of the opportunity provided by a measure and the relative economic significance of those which do.



DMA Obligation	Quantitative output indicator	Commentary
<p>Art 5(2): use of personal data acquired from CPS without consent and sign into other services</p>	<p>A. % of active end users (as % of total end users at the end of the relevant period) from whom consent was sought by the gatekeeper for the processing, combination or cross-use of personal data during the relevant period</p> <p>B. % of active end users (as % of end users at the end of the relevant period) for whom the gatekeeper has obtained consents for the processing, combination or cross-use of personal data at end of relevant reporting period</p> <p>C. Of those active users from whom consent for the processing, combination or cross-use of personal data was sought during the relevant period (a) % of these actively declining to consent during the same period (b) % declining to make a choice when asked to do so</p>	<p>The aim of this provision is to prevent gatekeepers from using personal data for other services without end user consent.</p> <p>Indicator A is a ‘flow’ measure of the extent to which gatekeeper has actively solicited consent for processing, combining or cross-using data (as opposed to not using personal data in this way or doing so without consent). This will likely be influenced by (a) the extent to which the gatekeeper wishes to process, combine or cross- use data (b) the number of consents already obtained in prior periods (c) the number of new end users acquired in the relevant period (d) the number of consents previously withdrawn or withheld. The measure allows for assessment of gatekeeper activity over time (i.e. across different relevant periods). It could be further broken down into separate consents for each activity depending on how implemented by gatekeeper or interpretation of ‘specific choice’.</p> <p>This is a ‘stock’ measure of the cumulative level of user consent obtained by gatekeeper and provides an indication of the impact of the consent requirement in enabling or inhibiting the gatekeeper’s use of personal data. Comparison may suggest some gatekeepers have processes that are more effective at obtaining consents that others or that some are more reliant upon leveraging personal data than others.</p> <p>This measure allows for more detailed assessment of user responses to the provision (A measures gatekeeper conduct, C measures user response). It breaks down non-consents into users actively rejecting request and those simply not responding. It may allow assessment of effectiveness of consenting process and fatigue over time.</p>
<p>Art 5(3): no MFNs</p>	<p>N/a</p>	<p>The aim of this provision is to remove restrictions in contracts between the gatekeeper and business users which inhibit the ability of the latter to offer favourable terms through rival sales channels. Compliance would be assessed by reference to process measures governing contracts or on a case by case basis rather than by means of output indicators.</p>



## Implementing the DMA: Substantive and Procedural Principles

<p>Art 5 (4 &amp; 5): services consumed via CPS if not purchased through them</p>	<p>A. % of active end users (as a % of all users of all third party services or as a % of all users) that used third party services on the CPS during the relevant period for which they did not contract, register or otherwise subscribe to through the CPS in the relevant period or any prior period</p> <p>B. Number of active end users that used third party services on the CPS during the relevant period for which they did not contract, register or otherwise subscribe to through the CPS in the relevant period or any prior period</p>	<p>The aim of these provisions is to allow business users and end users of the CPS to interact with each other outside of the CPS as well as on the platform. This includes business users making offers to end users as well as end users consuming services on the CPS that have been contracted for outside of it. The indicator does not directly measure the ability of business users to make offers for services outside the CPS or the effectiveness of such offers but instead measures the ability of end users to then consume services over the CPS for which they contracted elsewhere. Individual suppliers of third party services may be able to produce this indicator for their own services, but not in aggregate for the CPS as a whole. The measure allows for assessment of changes over time and for comparison between gatekeepers at a particular point in time.</p> <p>Indicator B is similar to A, but expressed in terms of absolute number of users rather than proportion of the user base</p> <p>The indicators could be further broken down by service category, likely to be defined by the gatekeeper, to better understand the impact of the provision on different categories of service.</p>
<p>Art 5(6): do not inhibit complaints</p>	<p>N/a</p>	<p>The aim of this provision is to prevent the gatekeeper restricting the ability of business users to bring complaints about non-compliance to the EC or other regulators. This would be revealed if business users were nonetheless to reveal that they were subject to such restrictions. No suitable for output indicators and likely to be assessed on a case by case basis.</p>
<p>Art 5(7): no tying of ID, browser engine or payment service with CPS</p>	<p>A. % of active end users (as % of total end users at the end of the relevant period) that used an ID service provided by the gatekeeper during the relevant period</p>	<p>The aim of this provision is to prevent the tying of other gatekeeper services to the CPS and so allow end and business users to use non-gatekeeper ID, web browser or payment services in conjunction with the CPS. Indicator A measures the extent to which business users (and by implication end user customers of those business users) used gatekeeper ID services in a given period, providing a crude indication of the extent to which business users may also be using non-gatekeeper ID services as the provisions are intended to allow them to do. It does not allow identification of those business users who did not use any ID services in the period or those which may use both gatekeeper and non-gatekeeper ID services in the same period.</p>





<p>B. % of active end users (as % of total end users at the end of the relevant period) that do not use ID services provided by the gatekeeper during the relevant period but did in the previous period</p>	<p>This is an indicator of the proportion of business users that have switched and, by implication, the ease with which business users can switch from a gatekeeper to non-gatekeeper service between two relevant periods. It does not allow identification of those business users who decide not use any ID service or those which retain the gatekeeper ID service but do not use it in the relevant period. It is a crude measure of the contestability of ID services</p>
<p>C. % of active end users (as % of total end users at the end of the relevant period) that used a web browser engine provided by the gatekeeper during the relevant period</p>	<p>This (and those that follow) are the same indicator as for ID services above but applied to web browsers, payment services and technical services that support the provision of payment services. They will provide an indication of both the ability of rivals to offer competing services (which is relevant to the compliance assessment) and of the willingness and ability of end users to switch to them (which may not be relevant). Further investigation of the factors behind the figures would be required if concerns about compliance were to arise in this context.</p>
<p>D. % of active end users (as % of total end users at the end of the relevant period) that do not use a web browser engine provided by the gatekeeper during the relevant period but did in the previous period</p>	
<p>E. % of active end users (as % of total end users at the end of the relevant period) that used a payment service provided by the gatekeeper during the relevant period</p>	
<p>F. % of active end users (as % of total end users at the end of the relevant period) that do not use a payment service provided by the gatekeeper during the relevant period but did in the previous period</p>	
<p>G. % of active end users (as % of total end users at the end of the relevant period) that used technical services that support the provision of payment services provided by the gatekeeper during the relevant period</p>	
<p>H. % of active end users (as % of total end users at the end of the relevant period) that do not use technical services that support the provision of payment services provided by the gatekeeper during the relevant period but did in the previous period.</p>	



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<p>Art 5(8): no unfair bundling of CPS</p>	<p>A. % of active end users (as % of end users registering for the CPS in the relevant period) that have rejected a request to subscribe to or register with a further CPS provided by the gatekeeper during the relevant period</p> <p>B. % of business users (as % of business users registering for the CPS in the relevant period) that have rejected a request to subscribe to or register with a further CPS provided by the gatekeeper during the relevant period</p>	<p>The aim of this provision is to prevent the tying of a particular CPS with other CPS provided by the same gatekeeper. Indicator A measures the extent to which users have registered for the gatekeeper CPS in the relevant period without choosing to take other CPS from the gatekeeper at that point. The ability of users to decline to register for other CPS whilst registering for CPS is an indicator of absence of tying. Allows for assessment of user responses over time and impact of changes to the registration process.</p> <p>This is the same measure as A but applied to business users.</p>
<p>Art 5(9): data for advertisers</p>	<p>A. % of total advertising spend attributed to advertisers (or third parties) in the relevant period who have been provided with information on daily fees and other charges during the relevant period (for each of the relevant online advertising services provided by the gatekeeper on the CPS</p> <p>B. % of total advertising spend attributed to advertisers (or third parties) in the relevant period who have been provided with information on publisher remuneration during the relevant period for each of the relevant online advertising services on the CPS</p> <p>C. % of total advertising spend attributed to advertisers (or third parties) in the relevant period for which publisher remuneration information has been withheld by the gatekeeper due to publisher non-consent for each of the relevant online advertising services provided by the gatekeeper on the CPS</p>	<p>The aim of the provision is to allow advertisers to obtain granular information about advertising costs from the gatekeeper. Indicator A measures the impact of advertiser/third party requests for data which does not require publisher consent to divulge by reference to the share of spend/gatekeeper revenue attributed to those requests. It also measures the extent to which advertisers respond to the opportunity to request such information and the potential usefulness and impact of the measure. It allows for assessment of advertiser behaviour over time and comparison between different advertising services offered by the gatekeeper.</p> <p>Indicator B is similar to A but applies to requests for publisher remuneration information which does require publisher consent.</p> <p>Indicator C is a measure of the extent to which the provision of information by gatekeepers to advertisers is inhibited by a refusal of publishers to give consent to share remuneration data. Comparison may show differences in consent mechanisms amongst gatekeepers or the impact of changes over time.</p>



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	<p>D. % of publishers (as % of total publishers served by the gatekeeper in the relevant period) that withheld consent to the sharing of information regarding the remuneration received during the relevant period or each of the relevant online advertising services provided by the gatekeeper on the CPS</p>	<p>Indicator D is similar to C but is a measure of how requests for consent are received by publishers in general, without regard to differences in their size/revenue. Comparison may show the impact of changes to consent mechanism or publisher attitude to such requests.</p>
<p>Art 5(10): data for publishers</p>	<p>A. % of total publisher remuneration attributed to publishers (or third parties) who have been provided with information on daily remuneration received and fees paid during the relevant period for each of the relevant online advertising services provided by the gatekeeper on the CPS</p> <p>B. % of total publisher remuneration attributed to publishers (or third parties) who have been provided with information on prices paid by advertisers during the relevant period for each of the relevant online advertising services on the CPS</p> <p>C. % of total publisher remuneration attributed to publishers (or third parties) for which advertiser price information has been withheld by the gatekeeper due to advertiser non-consent for each of the relevant online advertising services provided by the gatekeeper on the CPS</p> <p>D. % of advertisers that withheld consent to the sharing of information regarding advertising prices paid during the relevant period or each of the relevant online advertising services provided by the gatekeeper on the CPS</p>	<p>These indicators are similar to those for 5(9), but apply to information provided by the gatekeeper to publishers, including information (prices paid) for which consents from advertisers is required.</p>
<p>Art 6(2): not to use third party business user</p>	<p>N/a</p>	<p>This provision prohibits the gatekeeper using data generated by business users or their customers over the CPS to compete with those same business users. This is not susceptible to</p>



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<p>data acquired via CPS</p>		<p>measurement by an output indicator and compliance would likely be demonstrated by process measures (and non-compliance by complaints on a case by case basis)</p>
<p>Art 6(3) Allow uninstallation of apps</p>	<p>A. % of gatekeeper apps (as % of total installed gatekeeper apps at the end of the prior relevant period) that have been uninstalled during the relevant period for each gatekeeper app and each type of OS</p> <p>B. % of active end users that uninstalled a gatekeeper app, for each gatekeeper app, during the relevant period</p> <p>C. % of active end users (as a % of total end users at the end of the relevant period) that initiated uninstallation process for a gatekeeper app (excluding software applications that are essential for the functioning of the operating system or of the device and which cannot technically be offered on a standalone basis by third parties) but did not complete uninstallation in the relevant period</p> <p>D. % of active end users (as a % of total end users at the end of the relevant period) that uninstalled and then reinstalled a gatekeeper app or apps in the relevant period</p> <p>E. % of active end users (as % of a total users at the end of the relevant period) that were presented with the choice box for each combination of OS and (a) search engine (b) web browser (c) virtual assistant during the relevant period</p>	<p>The aim of this provision is to enable end users to easily uninstall gatekeeper apps and to easily apply default settings for third party (as well gatekeeper) apps.</p> <p>Indicator A is a flow measure of the proportion of gatekeeper apps that are uninstalled in the relevant period and, by implication the ease and willingness of users to uninstall gatekeeper apps. It allows assessment of changes over time and comparison between different apps and types of OS.</p> <p>Indicator B is a measure of the propensity of users to uninstall gatekeeper apps, whereas A measures the extent to which uninstallation is taking place in aggregate. Indicator B may be a better indication of the impact of changes in choice architecture on the uninstallation process.</p> <p>Indicator C is intended to be a measure of the ease with which uninstallation is achieved and therefore any obstacles which may inhibit uninstallation process for gatekeeper apps by reference to attempts to uninstall apps which do not complete. A similar measure is proposed for Art 6(4)</p> <p>Indicator D measures the proportion of users who complete the uninstallation of the gatekeeper apps but then reinstall them at a later point in time within the same period. This provides further evidence as to the impact of the measure on contestability.</p> <p>Indicator E measures the frequency of presentation of choice box by the gatekeeper. Indicators I and J decompose this measure further to isolate presentation when the device is set up or a service used for the first time. To the extent that end users are presented with the choice box on</p>



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<p>Default settings for search engine, VA or web browser</p>	<p>F. % of active end users (as a % of total users at the end of the relevant period) that were presented with the choice box when setting up a new device for each combination of OS and (a) search engine (b) web browser (c) virtual assistant during the relevant period</p>	<p>other occasions, the gatekeeper should explain when those are and provide similar indicators as for I and J</p>
	<p>G. % of active end users (as a % of total users at the end of the relevant period) that were presented with the choice box when first using the service for each combination of OS and (a) search engine (b) web browser (c) virtual assistant during the relevant period</p>	<p>Indicator F allows assessment of when users are being presented with the choice box by isolating presentation at the point the user is setting up a new device</p>
	<p>H. % of active end users (as % of those presented with the choice box in the relevant period) that have set the gatekeeper's service as default via the choice box for each combination of OS and (a) search engine (b) web browser (c) virtual assistant during the same relevant period</p>	<p>Indicator G allows assessment of when users are being presented with the choice box by isolating presentation at the point the user is first using the service in question</p>
	<p>I. % of active end users that have set the gatekeeper's service as default via the choice box in the relevant period for whom the same gatekeeper service was the default at the beginning of the same relevant period, for each combination of OS and (a) search engine (b) web browser (c) virtual assistant</p>	<p>Indicator H is a flow measure of the proportion of users choosing gatekeeper's service as a default when presented with a choice in a given period. It allows assessment of the impact of changes in the choice box, frequency of presentation of choice screen and/or changes in user responses over time.</p>
	<p>J. % of active end users (as a % of all end users at the end of the relevant period) that have set the gatekeeper's service as default for each combination of OS and (a) search engine (b) web browser (c) virtual assistant at end of the relevant period</p>	<p>Indicator I is a flow measure of the proportion of the users choosing the gatekeepers service as a default when presented with the choice box who had been using the same service as a default prior to being presented with the choice box. It is a measure of the extent to which the choice box leads users to change their consumption habits.</p>
	<p>K. % of active end users (as a % of those presented with the choice box in the relevant period) that have set a third party's</p>	<p>Indicator J is a stock measure of the cumulative impact of allowing users to choose their default settings, including the impact of the choice box on default settings.</p>
		<p>Indicator K is a flow measure of proportion of users choosing third party services as default when presented with a choice. It allows for comparison with indicator H.</p>



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	<p>service as default for each combination of OS and (a) search engine (b) web browser (c) virtual assistant as a default during the relevant period</p> <p>L. % of active end users (as a % of total users at the end of the relevant period) that have set a third party's service as default for each combination of OS and (a) search engine (b) web browser (c) virtual assistant at end of the relevant period</p> <p>M. % of active end users (as % of total users at the end of the relevant period) who have changed the default setting from a gatekeeper's service to a third party service for each combination of OS and (a) search engine (b) web browser or (c) virtual assistant to a third-party service during the relevant period</p> <p>N. % of active end users (as % of total users at the end of the relevant period) who have changed the default setting from a third party service to the gatekeeper's service for each combination of OS and (a) search engine (b) web browser (c) virtual assistant during the relevant period</p>	<p>Indicator L is a stock measure of the cumulative impact of the choice box for third party defaults.</p> <p>Indicator M is a measure of the ease of switching defaults from gatekeeper to third party whether in response to presentation of a choice box or not.</p> <p>Indicator N is similar to M but a measure of switching in the opposite direction.</p>
<p>Art 6(4): third party applications and app stores</p>	<p>A. % of active end users (as % of total users at the end of the relevant period) who have downloaded a third-party app store during the relevant period for each type of OS</p> <p>B. % of active end users (as a % of total users at the end of the relevant period) who initiated a download of a third party app</p>	<p>The aim of this provision is to enable end users to download third party app stores and to sideload third party apps if they wish, and to set third party apps or app stores as their default if they wish.</p> <p>Indicator A is a flow measure of user's response to opportunity to download third party app stores from gatekeeper store. It allows for assessment over time. Comparison between gatekeepers may allow analysis of how integrity and/or security issues are addressed by different gatekeepers.</p> <p>Indicator B is a measure of the ease of downloading third party app stores and any obstacles which may cause users to abandon the download process once commenced. It allows for assessment of the impact of changes to the download process over time.</p>



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<p>store in the relevant period but did not complete the download for each type of OS</p> <p>C. % of active users who initiated but did not complete a download of a third party app store from the gatekeeper's app store in the relevant period who received (a) one gatekeeper message (b) two or more gatekeeper messages during the download process</p> <p>D. % of active end users (as a % of total users at the end of the relevant period) who have sideloaded a third party app during the relevant period</p> <p>E. % of third-party apps (as a % of all third party apps sideloaded in the same period) for which sideloading was initiated but did not complete during the relevant period</p> <p>F. % of active users (as a % of total users at the end of the relevant period) who initiated but did not complete sideloading a third part app in the relevant period who received (a) one gatekeeper message (b) two or more gatekeeper messages during the download process</p> <p>G. % of active end users (as a % of total users at end of the relevant period) who received an error message when seeking to use a gatekeeper app during the relevant period for each type of OS</p> <p>H. % of active end users (as a % of users who have downloaded an app via a third party app store during the relevant period) who received an error message when seeking to use it during the relevant period</p>	<p>Indicator C is a measure of the impact of messages presented by the gatekeeper to end users during the download process on end user propensity to complete the downloading of third party app stores. It does not imply any assessment of whether such messages, which may contain 'warnings' or other information scripted by the gatekeeper (rather than the third party), are justified or not.</p> <p>Indicator D is a flow measure of user response to the sideloading opportunity. It does not measure the % of apps that are sideloaded or the number of apps per user, but rather the proportion of users doing so.</p> <p>Indicator E is similar to B but with respect to sideloading.</p> <p>Indicator F is similar to C but with respect to sideloading</p> <p>Indicator G provides a benchmark against which to assess (in indicators H and I) the experience of third party apps that have been downloaded via other channels. In doing so it assumes that the majority of gatekeeper apps will either have been preinstalled or downloaded via the gatekeeper app store.</p> <p>Indicator H measures the extent to which the user experience of apps which have been downloaded via a third party app store be inferior to that of apps which have been downloaded via the gatekeeper app store. Further</p>
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<p>I. % of active end users (as a % of users who have sideloaded a third party app during the relevant period) who received an error message when seeking to use the app during the relevant period</p>	<p>Indicator I measures the extent to which the user experience of apps which have been sideloaded may be inferior to that of apps which have been downloaded via the gatekeeper app store</p>
<p>J. % of active end users (as % of total users at the end of the relevant period) who have downloaded and set third party applications as a default(s) during the relevant period</p>	<p>Indicator J is a flow measure of the ability and willingness of users to set downloaded third party applications as defaults, whether in response to prompts from third parties or otherwise.</p>
<p>K. % of active end users (as % of total users at the end of the relevant period) who received a prompt from the third party in the same relevant period prior to setting the third party application as default(s) during the relevant period</p>	<p>Indicator K measures the impact of prompts on default setting by users (both frequency and effectiveness). There is, however, a question of whether the gatekeeper could measure this.</p>
<p>L. % of active end users (as % of total users at the end of the relevant period) who have sideloaded a third party application and who have set it as a default during the relevant period</p>	<p>Indicator L is a stock measure of the ability and willingness of users to set downloaded third party applications as defaults (whether downloaded in the relevant period or previously). Indicates cumulative impact of measures on contestability.</p>
<p>M. % of active end users (as a % of total users at the end of the relevant period) who have sideloaded a third party app store during the relevant period</p>	<p>This and the following indicators repeat indicators D -L but with respect to third party app stores rather than third party applications</p>
<p>N. % of third-party app stores (as a % of all third party app stores sideloaded in the same period) for which sideloading was initiated but did not complete during the relevant period</p>	
<p>O. % of active users (as a % of total users at the end of the relevant period) who initiated but did not complete sideloading a third party app store in the relevant period who received (a) one warning message (b) two or more warning messages during the download process</p>	
<p>P. % of active end users (as % of total users at the end of the relevant period) who have downloaded and set third party app store as a default during the relevant period</p>	





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	<p>Q. % of active end users (as a % of total users at the end of the relevant period) who received a prompt from the third party in the same relevant period prior to setting the third party app store as default</p> <p>R. % of active end users (as a % of total users at the end of the relevant period) who have sideloaded a third party app store and who have set it as a default during the relevant period</p> <p>S. % of active end users (as a % of total users at the end of the relevant period) who received a prompt from the gatekeeper in the same relevant period prior to setting the gatekeeper's app store as default</p> <p>T. % of active end users (as a % of total users at the end of the relevant period) who received a prompt from the gatekeeper in the same relevant period prior to setting the gatekeeper's application as default</p>	<p>Indicators S and T provide benchmarks of the effectiveness of gatekeeper prompts for users to set defaults against which to assess indicators K and Q</p>
Art 6(5): non-discriminative ranking	% of first <u>3</u> search results displayed (i.e. impressions) that feature a gatekeeper URL during the relevant period (as an average of all search results displayed during the relevant period)	This provision aims to prevent unfair self-preferencing in ranking and related indexing and crawling. The proposed indicator measures the likelihood of gatekeeper URLs appearing in top 3 search results in a relevant period. It allows assessment of impact of changes in algorithms over time.
Art 6(6): switching between services accessed via CPS	N/a	The aim of this provision is to remove any restrictions on switching between services and applications provided via the CPS. It is possible to propose indicators that measure the % of end users who switch applications in a relevant period, but barriers to switching are more likely to be identified by users on a case by case basis.



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<p>Art 6(7): access to same hardware and software features</p>	<p>A. % of requests for access to gatekeeper hardware or software features from business users or alternative providers that are rejected/blocked on grounds of protecting integrity in the relevant period (by CPS) in the relevant period</p> <p>B. % of hardware and software features to which access is provided by the gatekeeper that are utilised by business users or alternative providers at the end of the relevant period</p>	<p>The aim of this provision is to require the gatekeeper to provide non-discriminatory access to the same software and hardware services that it makes available to itself via the OS or virtual assistant. Some of this will likely be complaints-driven and assessed on a case by case basis, but two indicators are proposed.</p> <p>Indicator A measures the extent to which the obligation to provide access is being inhibited by the gatekeeper on the grounds of protecting the integrity of the gatekeeper's services. It allows assessment over time and comparison between gatekeepers but does not assess the validity of such decisions or their justification.</p> <p>Indicator B is a stock measure of the response of third parties to the opportunity to access gatekeeper features and thus the impact of the provision on contestability.</p>
<p>Art 6(8): data for advertisers and publishers to verify ad performance on CPS</p>	<p>A. % of advertisers (as % of all advertisers) undertaking their own independent verification of the performance of the ad inventory on the relevant CPS at the end of the relevant period</p> <p>B. % of advertising revenue ((as % of all advertising revenue) represented by advertisers undertaking their own independent verification of the performance of the ad inventory on the relevant CPS at the end of the relevant period</p> <p>C. % of publishers (as % of all publishers) undertaking their own independent verification of the performance of the ad inventory on the relevant CPS at the end of the relevant period</p> <p>D. % of publishing remuneration (as % of all publisher remuneration) represented by publishers undertaking their own</p>	<p>This provision requires gatekeepers to provide information to advertisers and publishers on request in order to enable them to independently assess the performance of ad inventory (rather than rely upon the gatekeeper's own assessment)</p> <p>Indicator A is a stock measure of the use of performance measurement tools which the gatekeeper is required to provide to advertisers</p> <p>Indicator B is similar to A but measured by reference to advertising spend rather than advertisers</p> <p>Indicator C is similar to A, but applies to publishers rather than advertisers</p> <p>Indicator D is similar to C but measured by reference to publisher remuneration rather than publishers.</p>



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	<p>independent verification of the performance of the ad inventory on the relevant CPS at the end of the relevant period</p>	
<p>Art 6(9): portability of end user data</p>	<p>A. % of active end users (as % of total end users at end of the relevant period) requesting data portability during the relevant period</p> <p>B. % of active end users (as % of total end users at end of the relevant period) who cancel data portability during the relevant period</p> <p>C. % of active end users (as % of end users who have requested data portability during the relevant period) that have data portability implemented at the end of the relevant period</p>	<p>The aim of this provision is to enable end users to require gatekeepers to share data with or port data to third parties</p> <p>Indicator A is a flow measure of user response to data porting opportunity. Allows assessment over time.</p> <p>Indicator B is a crude measure of the effectiveness of the porting process which may indicate user dissatisfaction with porting arrangements or the ease of cancellation (which may itself contribute to higher user uptake)</p> <p>Indicator C is stock measure of the cumulative effect of A and B</p>
<p>Art 6(10): portability of business user data</p>	<p>A % of active business users (as % of total business users at end of the relevant period) requesting portability during the relevant period.</p> <p>B.% of active business users (as % of business users who have requested data portability during the relevant period) that have portability implemented at the end of the relevant period</p> <p>C. % of requests by active business users during the relevant period for which active end users have provided consents to share personal data during the relevant or immediately prior period</p>	<p>The aim of this provision is to enable business users to require gatekeepers to share data with third parties, subject to consent by end users for the sharing of personal data</p> <p>Indicator A is a flow measure of business user response to data portability opportunity. Allows assessment over time.</p> <p>Indicator B is stock measure of business user response and of the overall impact of the provision.</p> <p>Indicator C is a measure of end user responses to the consent mechanism and effectiveness as well as a crude indicator impact of measure on contestability. Allows assessment over time including impact of changes to consent mechanism.</p>



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<p>Art 6(11): Sharing data with online search engines</p>	<p>A. Number of requests for data from online search providers received by the gatekeeper during the relevant period</p> <p>B. % of requests received from online search providers in all periods that have been fulfilled at the end of the relevant period</p> <p>C. Total volume [or value] of data shared with online search providers during the relevant period for each of (a) ranking (b) query (c) click and (d) view data</p>	<p>The aim of this provision is to enable rival search engines to access ranking, query, click and view data held by the gatekeeper</p> <p>Indicator A measures rival search engine responses to the data access opportunity and allows assessment over time</p> <p>Indicator B is a stock measure of implementation of the data sharing measure by the gatekeeper</p> <p>Indicator C is a measure of the impact of the provision for each of the categories of data that may be requested. Allows assessment over time.</p>
<p>Art 6(12): FRAND obligations</p>	<p>A. % of active business users (as % of business users seeking access to gatekeeper services during the relevant period) who have raised a dispute for resolution during the relevant period</p> <p>B. % of complaints received by the gatekeeper during the relevant period or immediately prior period that are resolved at end of the relevant period.</p>	<p>This provision requires gatekeepers to deal with business users on FRAND terms and to provide for resolution when disputes arise. Whether terms offered are FRAND or not will likely require assessment on a case by case basis and is not susceptible to measurement by output indicators. Measures to assess the effectiveness of dispute resolution are proposed below.</p> <p>Indicator A may indicate the extent to which terms offered by the gatekeeper are considered FRAND by business users, as disputes suggest that those raising a dispute do not consider them so.</p> <p>Indicator B is a measure of the speed and effectiveness of the dispute resolution process. Guidance will likely be required on what 'resolved' means in this context</p>
<p>Art 6(13): no barrier to termination of CPS</p>	<p>A. % of active end users (as a % of total end users at end of prior relevant period) who terminate their CPS during the relevant period</p>	<p>This provision aims to ensure that end users can terminate their CPS without undue difficulty if they wish.</p> <p>Indicator A measures ability of end users to terminate and the impact of the provision</p>



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Art 7: interoperability	B. % of active end users (as % of total end users at end of the prior relevant period) who request to terminate their CPS during the relevant period but had not done so at the end of the same period	Indicator B is a measure of potential obstacles or delays which users may face in terminating the CPS
		This provision enables gatekeeper services to interoperate with those of other providers, upon their request, thereby allowing end users of each to communicate with each other.
	A. Number of requests for interoperability between individual users received by gatekeeper in the relevant period	Indicator A measures the response of other providers to the opportunity to interoperate
	B. % of requests received in the relevant period and prior [two] relevant periods that have been fulfilled at the end of the relevant period	Indicator B measures the rate at which requests are fulfilled by the gatekeeper and thus impact of the provision by reference to requests
	C. Total volume of text messages passing between the gatekeeper CPS and third parties in respect of individual users at end of the relevant period	Indicator C is a measure the impact of the provision by reference to the volume of communications passing between platforms at a given point in time
	D. % of text messages (as % of total volume of text messages send and received by individual active end users of the CPS) that pass between the gatekeeper CPS and third parties	Indicator D is a measure of the response of end users to the opportunity to communicate across platforms and the extent to which they do so
E. As above for texts within groups of individual users	Applies indicators A-D to group texting	
F. As above for (a) messages with attached files (b) voice calls (c) video calls when obligation applies	Applies indicators A-D to other communications services as required by the provision.	

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