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The Digital Market Act: Regulating market openness or ecosystem functioning?

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Introduction

The Digital Markets Act (DMA) is the new EU regulation on the digital sector, which entered into force on November 1st, 2022. It focuses on ensuring fairness and contestability in digital markets and aims to do so by imposing a list of obligations on firms operating large digital platforms, the so called "gatekeepers".[1]

While acknowledging different types of core platform services, the DMA takes a business model agnostic approach both to the gatekeeper designation process, which is based on quantitative revenue and user base thresholds, and to the imposition of new obligations.[2] The DMA treats all digital platforms equally qua marketplaces independently from what they are and how they function. This means that the business model adopted by a very large platform is neither relevant to determine whether a platform is to be considered a gatekeeper, nor to establish which of the new obligations are to be implemented by it. This approach raises several questions about the impact of the DMA on the (well-)functioning of digital markets: will the DMA reduce platform business models' plurality into standardized market infrastructures? And more critically so, will the DMA engender "market failures" as side effects by disrupting existing platform business models while trying to ensure fairness and contestability in such markets?

The Impact Assessment Report that accompanied the Commission's proposal explicitly acknowledges that these obligations were selected by identifying a set of "key unfair practices" observed in digital platforms where there is "sufficient experience with [their] harmful effects".[3] In some cases, it is possible to match individual obligations with

[1] "Gatekeepers" in the DMA are very large digital platforms with a "systemic role in the internal market" due to their bottleneck position, and are identified according to the criteria set out in Art. 3 DMA of having a "significant impact on the internal market", providing "a core platform service" and enjoying "an entrenched and durable position".

[2] Cennamo, C., Kretschmer, T., Constantinides, P., Alaimo, C., & Santaló, J. (2023). Digital platforms regulation: An innovation-centric view of the EU's Digital Markets Act. *Journal of European Competition Law & Practice*, *14*(1), 44-51. Calls for the designation process to be agnostic were also reported in the Commission's Impact Assessment Report (European Commission, "Commission Staff Working Document - Impact Assessment Report accompanying the document Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act)", *SWD(2020) 363 final*, 2020).

[3] DMA Impact Assessment Report (see note 2), p. 50.

specific past or ongoing antitrust cases and complaints.[4] Yet, combining such a practice with an approach that is business model agnostic opens the door to possible negative unintended consequences, particularly for data-related obligations when applied to a business model different than the one they were designed for.

This paper explores one potential instance of this mismatch, illustrated by the case of Booking.com. Starting from the concerns the company raised against data-sharing obligations during the legislative process that led to the adoption of the DMA, we examine how the application of obligations developed for one kind of platform (app stores) to a different one (Online Travel Agencies or OTAs) opens to possible risks for consumer welfare and the innovation dynamics of the ecosystem that emerged around Booking's business model. Our analysis indicates that the DMA implementation should account for the broader platforms' ecosystem (rather than taking the narrow focus on platforms as two-sided markets). We propose a corrective interpretation of the obligations at hand to limit these possible negative effects of the DMA.

The issue raised by Booking.com

Booking.com raised concerns, in its feedback to the Commission's DMA proposal,[5] against two specific obligations – Article 5(c) and 6(i), now Article 5(4) and 6(10) respectively. It objected that, if applied to Booking.com's activities, these obligations would compromise the economic viability of the platform's business model.

Article 5(4) DMA prohibits gatekeepers from preventing business users from communicating and promoting to end users the possibility to access offers outside of the gatekeeper's CPS (core platform service), and/or from effectively concluding contracts with those end users outside the platform. Article 6(10) DMA provides business users with the right to obtain "effective, high- quality, continuous and real-time access to, and

[4] Art. 6(2) DMA, for instance, is a generalization of the commitments offered in the pending *Amazon Marketplace* antitrust proceedings.
[5] "Feedback from: Booking.com B.V.," European Commission - Have your say, accessed November 8, 2022, https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12418-Digital-Services-Act-package-ex-ante-regulatory-instrument-of-very-large-online-platforms-acting-as-gatekeepers/F2256803_en.

use of"[6] the data generated or provided by their activities on the platform, including data provided or generated by end users engaging with the business user's offerings.

For both obligations, the examples given by the Commission in its Impact Assessment relate to practices witnessed on mobile app stores. Article 5(4) DMA seems tailored to the case of Apple prohibiting iOS app developers from the purchase of digital content and subscriptions through other (often cheaper) sources than the App Store, while for Article 6(10) the IA reports complaints about "disintermediation" – a gatekeeper removing the direct link between business users and their respective end users by withholding or controlling access to customer data – and makes the explicit example of online newspapers being cut off from data about their own subscribers gained through mobile store subscriptions.

Booking.com's objection is that, if they were to be applied as they are to the OTA sector where the prevalent business model consists of *refundable* bookings, hotels would be able to use the platform to acquire customers online, obtain customers' contact data and exploit the refund period to conclude a separate transaction at a lower rate, bypassing the OTA's transaction fees. Booking.com suggests that platforms need to be able to withhold such contact data to secure their compensation for the customer acquisition service provided, and if such a practice were to become widespread it could threaten the long-run economic viability of the OTA business model by making it significantly harder to monetize successful matches.

Is this risk real, and of substance to such platform business models?[7]

Booking.com as a two-sided market

[6] Art 6(10) DMA.

[7] The problem, in fact, has been acknowledged in one of the Analytical papers commissioned by the Commission itself prior to the publication of the DMA proposal; see: Vaida Gineikytė, Egidijus Barcevičius and Guoda Cibaitė, "Analytical Paper 5: Business User And Third- Party Access To Online Platform Data" (Observatory on the Online Platform Economy, 2020), https://platformobservatory.eu/app/uploads/2020/09/Analytical-Paper-5-Business-user-and-third-party-access- to-data_final.pdf.

The core of the problem lies in the narrow understanding and conceptualization of platforms as market intermediaries – gateway to customers –, which is a reductive view of the digital economy, considered as an additional market channel for *existing* activities (and goods). If we limit our analysis of Booking.com as a two-sided market, we have the classic triangular interaction market structure, with customers (travellers) on one side and sellers (hotels) on the other side. The platform mediates and facilitates matching between the two sides extracting data from their transactions. See Figure 1 for an illustration.

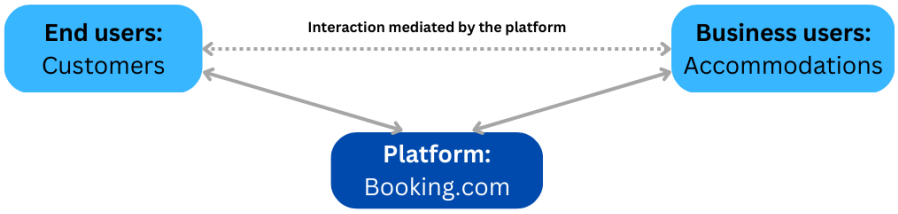

Figure 1. Booking.com as a classic two-sided market.

Platforms, in such model, create value by facilitating the transactions and extract value by monetizing the matching between the two sides. As gatekeepers, platforms control transactions and cumulate data, which they use to strengthen their market position.

Articles 5 and 6 of the DMA which aim to weaken the gatekeeping role of the platform, if successful, may lead to different outcomes. In a first scenario, keeping a conservative approach, we might think that only a few business users "defect" and start bypassing the platform as described above. In such a case, Booking.com faces a revenue loss but remains able to monetize successful matches that continue to happen on the platform. If bypassing the platform were to become a widespread practice among users, however, Booking.com might be forced either to limit the number of refunds offered to end users to counter the platform disintermediation,[8] or to change its monetization model to stay in

[8] In this case disintermediation happens by removing the facilitation of the gatekeeper in mediating the transaction between business users and end users.

business, for instance by monetizing now-free analytics for business users or by introducing advertisement or the possibility to pay for prominent placing among search results. Removing refundability would mean the model becomes less user-friendly, monetizing analytics would mean higher costs for business users (and thus for end users if the extra costs business users will face are passed on to the end user), while allowing business users to pay for ads/prominent placing would mean both higher costs for businesses and less relevant search results for end users.

While this is a thought experiment, it shows that the welfare gains of business users due to not having to pay transaction fees would have to be weighed against other kinds of welfare losses. It cannot be taken for granted that the net welfare effect would be positive for either side of the market.

Booking.com as an ecosystem

The implications of the regulatory intervention change quite drastically if we consider Booking.com not *solely* as a two-sided market but also as a *digital ecosystem*, that is, a new organizing structure for the production and consumption of digital goods/services that transforms, and in some cases, enables the production and consumption of physical goods/services in the economy. To begin with, platforms do not only facilitate transactions. The transactions that happen on platforms are, in general, the outcome of a complex system of interactions that serves to provide matching services. Viewing, browsing, rating, and reviewing are interactions that would not exist without the intermediation of the platform.[9] Data created in this way are not only used to directly improve matches (e.g., by providing end users with more relevant search results) and generate transactions that would not have been there otherwise; they also generate additional data flow through which Booking.com provides its business users with a host of analytics and data solutions to improve their presence on the platform (see Figure 2 for an illustration).

[9] Alaimo, C., & Kallinikos, J. (2017). Computing the everyday: Social media as data platforms. *The Information Society*, *33*(4), 175-191.

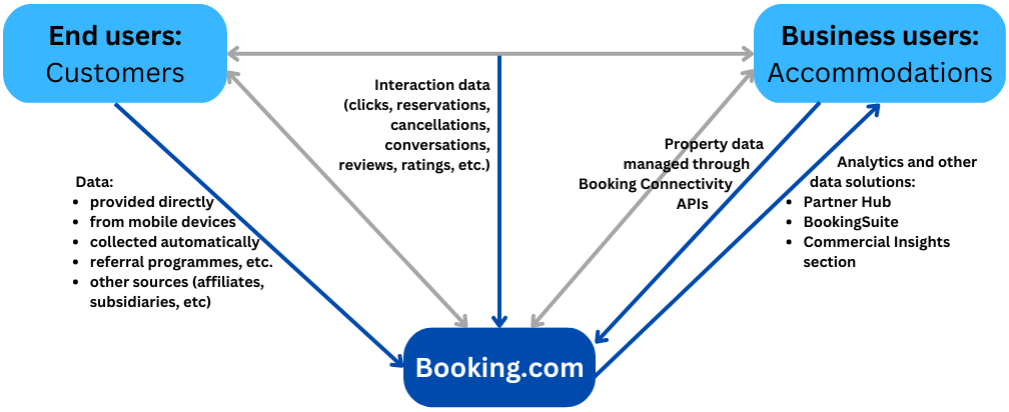

Figure 2. Interactions are indicated by grey arrows, while data flows are highlighted in blue.

Around the platform's core set of interactions, an ecosystem of first and third-party complements arises, generating new data flows and creating additional value in the form of new interactions and services[10]. As shown in Figure 2, Booking.com shares data within the Booking Holdings group to offer complementary services through other brands of the group, which either enable additional on-platform interactions (Rentalcars.com, for instance, connects end users booking and accommodation on Booking.com with car companies providing car rentals in the end user's destination) or consist in the direct provision of services to one of the two sides of the market (FareHarbor, for instance, provides local attractions and activities with the software and technology to bring their offline businesses online).

Booking.com's relationship with third-party partner companies (which often are other platforms themselves) enables the provision of complements through data-sharing arrangements. Booking.com shares user inventories with its partners and vice versa, allowing its end users to connect with the business users of partner platforms and to access their complementary services on top of the reservations made on Booking.com, increasing the number of interactions and data exchanges happening in the ecosystem.

[10] Alaimo, C., Kallinikos, J., & Valderrama, E. (2020). Platforms as service ecosystems: Lessons from social media. *Journal of Information Technology*, *35*(1), 25-48.

For instance, the partnership with Viator allows Booking.com's end users to connect with Viator's business users who provide "experiences" for travellers.

Booking.com also promotes an Affiliate Partners Programme. In this case, travel websites, blogs and content creators who join as affiliates bring new end users onto the platform by integrating Booking's "customer-facing products" (e.g., map widget, custom search boxes, etc.)[11] into their websites, and in return gain the possibility to monetize their blogs and websites by receiving a portion (starting at 25%)[12] of the commission fee Booking.com receives from the transaction.

The host of interactions and activities taking place on the platform additionally enables innovation spill-over effects.[13] In fact, despite the absence of formal data sharing agreements, third party companies such as Phocuswright, STR, Tourism Economics and Skift offer analytical insights by combining publicly available data with data they obtain from OTAs through scraping.[14] As these insights cover "the overall travel industry"[15] rather than activities on a single platform, they fulfil a different need compared to the data analytic services provided by Booking.com and are thus better seen as a complement rather than a substitute for the latter.

[11] "Products for Self-Managed Partners", Booking.com, accessed March 18, 2023, https://www.booking.com/affiliate-program/v2/selfmanaged.html.
[12] "Commission: Everything You Need to Know", Booking.com Affiliate Support Centre, accessed March 18, 2023, https://affiliates.support.booking.com/kb/s/article/Commission-everything-you-need-to-know.
[13] Carmelo Cennamo et al., "Digital Platforms Regulation: An Innovation-Centric View of The EU'S Digital Markets Act" (see note 2).
[14] Vaida Gineikytė, Egidijus Barcevičius and Guoda Cibaitė, "Analytical Paper 5: Business User And Third- Party Access To Online Platform Data" (see note 7)
[15] *Ibid.*

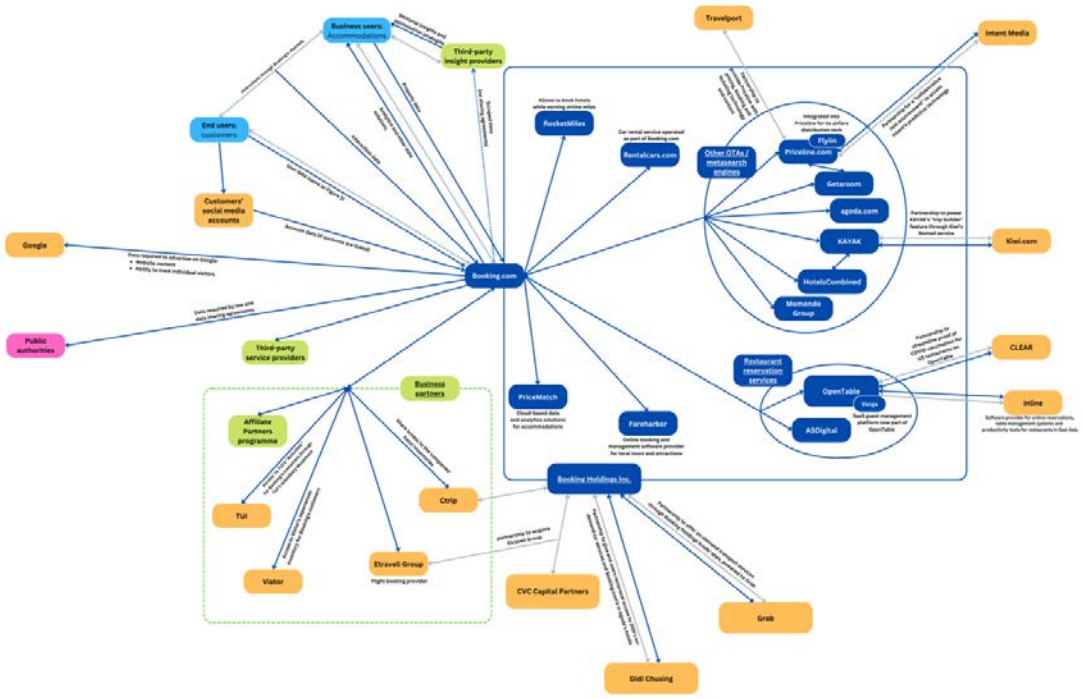

Figure 2. Booking.com as an ecosystem. Users are coloured in light blue, firms from the Booking Holdings group are coloured in dark blue, individual third-party companies are coloured in yellow and groupings of third-party actors are coloured in green.

Looking at the ecosystem's structure and activities is indeed more complex but also closer to reality and may call for a different assessment of the DMA's application.

Under a conservative scenario, we might think that only a few business users "defect" and start bypassing the platform as described above, in which case, the cancellation of reservations would impact minimally Booking.com revenue but it would still feed back to the data architecture of interactions, matching and complementary data services. "Fake" cancellations (i.e., transactions that bypassed the platform) would lead to conflicting data signals and overall degrading of data value and may impact Booking.com's ability to provide relevant search results and analytics.[16] It is reasonable

[16] See Guy Tytunovich, "The Great Contamination: How Bots and Fake Users Can Skew an Organization's Data and Analytics," Forbes (Forbes Magazine, January 25, 2022), https://www.forbes.com/sites/forbestechcouncil/2022/01/24/the-great-contamination-how-bots-and-fake-users-can-skew-an-organizations-data-and-analytics/ for examples of how "bad data" pose problems to an

to expect that the impact on the core interaction system of the platform would reverberate across the ecosystem. Some actors, such as the third-party insight providers, whose business model relies heavily on OTA data, may not be able to offer the same service anymore, or the quality of their service may be impacted negatively. The same mechanism may lead to lower-quality data being shared with both business partners and other firms of the Booking Holdings group and being fed into their respective algorithms, potentially resulting in less relevant rankings, recommendations, and matches being provided to these platforms' users.

Further considerations need to be made for the scenario in which Booking's monetization model is also affected. On one side, looking at the broader ecosystem, Booking might be able to offset some of the losses experienced from platform disintermediation through its own complements, either by extracting more value out of them (e.g., raising transaction fees on Rentalcars.com reservations matched to Booking.com reservations) or by leveraging them as "added value" to bring users – and transactions – back onto the platform.[17] On the other side, revenue losses would not be limited to Booking.com itself, as other actors whose revenue depends on transactions on the platform would face similar losses. Two examples show this point.

Affiliate Partners benefit from participation in the Booking.com ecosystem by integrating Booking's "customer-facing products" into their websites and then earning a commission on reservations on the platform made through them. If bookings started to be made bypassing the platform, Affiliate Partners would face revenue loss risks like those faced

organisation's capability to derive meaningful insights and analytics, and Lucian Constantin, "How Data Poisoning Attacks Corrupt Machine Learning Models," CSO Online (CSO, April 12, 2021), https://www.csoonline.com/article/3613932/how-data-poisoning-attacks-corrupt-machine-learning-models.html for the same issue applied to machine learning models. For an academic contribution on how data are not merely collected but rather generated as human-made products, and on the subsequent complications that can arise even in producing faithful records out of events, see Aleksi Aaltonen, Cristina Alaimo, and Jannis Kallinikos, "The Making of Data Commodities: Data Analytics as an Embedded Process," *Journal of Management Information Systems* 38, no. 2 (2021): pp. 401-429.

[17] This latter option, however, would have little impact if users were able to bypass the platform for transactions tied to complements in the same way as for the main transaction of hotel reservations.

by the platform itself as canceled bookings and "no-shows" are not counted in the calculation of Booking.com's monthly pay-outs to its partners.[18]

Similarly, firms who provide complementary services to the ecosystem – be them part of the Booking Holdings group (e.g., Rentalcars.com) or third-party providers (e.g., Viator) – are often other platforms or matching services which benefit from their participation in the ecosystem by gaining access to end users coming from Booking.com in addition to those who choose their services independently. With less interactions mediated by the main platform, it could become harder for its end users to be directed towards these complements, resulting in an overall lower number of interactions across the ecosystem. For example, it could become harder for Rentalcars.com to offer matched car rental services to Booking users if the latter were to start bringing their interactions off-platform.

In the most severe scenario – Booking.com becoming unable to continue operations profitably in the EU Single Market – the whole ecosystem could be threatened, with significant consequences for a host of actors who are not the direct addressees of the DMA.

Concluding remarks and policy recommendations

As this brief analysis shows, applying obligations designed for one specific platform market (app store) to a different kind of platform (the OTA business model) may trigger unintended consequences. In our example, the practice of harmful disintermediation in app stores, which is defined as a gatekeeper removing the direct link between business users and their respective end users by withholding or controlling access to customer data, represents a key element of the very business model of OTAs. Online Travel Agencies mediate the interaction between end users and business users, offering several services in return. The mediation allows Booking to increase customer choice by offering the possibility of refunds, while also providing data analytics to hotels and additional service

[18] "Commission: Everything You Need to Know" (see note **Errore. Il segnalibro non è definito.**).

and transaction opportunities to business users such as rental cars, content providers, data analytics providers, and so on.

The differences between the two business models highlight the limitations of a one-size-fits-all approach to platform regulation which ignores ecosystem aspects beyond the limited "platform as an intermediary" framing. Below, we suggest how regulatory interventions on digital platform ecosystems could benefit from a more nuanced approach, combining the analysis (a) of the ecosystem structure and (b) of the data economy underlying it (c) and distinguishing between different categories of platform ecosystems with a type-by-type approach.

a. Ecosystem structure analysis

While the two-sided market approach considers all platforms as simple intermediaries and thus subjects them to similar obligations,[19] an ecosystem perspective reveals a more nuanced picture where a plurality of actors come into play and the very structure of the ecosystem matters in determining which actors have something to gain or to lose from a change in the ecosystem.[20] In our Booking.com example, for instance, the revenue losses which members of the Affiliate Partner programme would face if bookings coming from their websites were to be taken off-platform depend on the position these affiliates occupy as a source of new interactions for the platform. Most interactions and business relations remain invisible without an informed ecosystem structure analysis.

Taking an ecosystem perspective while analyzing an ecosystem before a regulatory intervention makes the existence of such trade-offs explicit, and requires regulators to consider whether a change they are introducing benefits the whole ecosystem or only some of its actors – and, in the latter case, which ones.

b. Data economy analysis

[19] Even this assumption can be questioned when we remember that two intermediaries may still have different monetization models, as in the case of Booking.com's delayed remuneration due to refund periods compared to app stores' immediate remuneration.
[20] Cennamo, C. (2021). Competing in digital markets: A platform-based perspective. *Academy of Management Perspectives*, *35*(2), 265-291.

Taking an ecosystem approach also means recognizing the role of *data*, together with complements, in creating a multi-service, multi-actor ecosystem that arises and generates value *on top* of the platform's core interaction.[21] Regulators' analysis should consider how platforms produce data from the interactions they mediate and use these data to enable new interactions which generate new data, whose innovative potential for the ecosystem cannot be ignored when assessing the possible consequences of a specific intervention. Data improve the quality of matches provided by the platform, enable the provision of additional complements and services, and even constitute the basis of novel economic activities that arise outside of the platform itself.

In our Booking.com example, interaction data from the platform enable – among others – the provision of analytics to business users, of complementary transport and experiences to end users, and constitute a fundamental resource for third-party insight providers. Under such a view, controlling access to the contact data which are the object of the contested obligations should be assessed considering their role in the bigger picture of data production, circulation, and use that keeping interactions on the platform enables. These data, besides generating revenue for OTAs, also produce additional services and interactions across the whole ecosystem.

c. Type-by-type analysis

An analysis that considers ecosystem structure and the role of data avoids the blanket approach which disregards key differences between different ecosystems. Even without going all the way back to lengthy case-by-case assessments, ex-ante general rules like those contained in the DMA need to be applied according to the type of platform ecosystem at hand.[22] "Types" or "categories" could be identified according to the

[21] Alaimo, C., Kallinikos, J., & Valderrama, E. (2020). Platforms as service ecosystems: Lessons from social media. *Journal of Information Technology*, *35*(1), 25-48.

[22] The DMA already offers an avenue that could be employed to this end in the form of the "further specification" process under Art. 8 DMA. This process, which allows the Commission to provide guidance regarding the kind of measures to be taken to achieve compliance with specific Art. 6 obligations, could be employed to issue specifications tailored to certain categories of platform ecosystems after performing the kind of analysis suggested in this article, save the purpose of the original obligation while taking into account the peculiar characteristics which differentiate a type of platform from another.

analyses suggested above, which looks at ecosystem structure, data flows, and business models and how they configure a certain type of platform ecosystem. Taking the case we examined in this article, Booking.com shared with other OTAs a specific business model characterised by the refundability of hotel reservation for a period of time. The business model, together with its ecosystem structure and data flows, makes OTAs a different types of platform ecosystems in comparison to e-commerce platforms or app stores. An ecosystem perspective shows that different types of ecosystems warrant different rules.[23]

Such a type-by-type approach could constitute a useful middle ground that maintains the advantages of ex-ante, directly applicable rules (in our case, the purpose of allowing business users to establish a direct relationship with their own customers would be maintained intact) in terms of immediateness and certainty of action while allowing the necessary degree of flexibility to account for the specificities emerging from different business models and ecosystem structures.

[23] For a proposal by Booking.com on how to interpret Art. 6(10) DMA for OTAs to address the concerns mentioned in this article, see Booking.com's feedback to the DMA proposal (see note **Errore. Il segnalibro non è definito.**).

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