MORE LIKELY THAN WHAT? THE RELEVANCE OF THE COUNTERFACTUAL IN NASCENT AND DYNAMIC INDUSTRIES

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The rise of digital applications in every facet of our daily lives has substantially increased the pace at which markets evolve. Nascent markets today can turn into multi-billion-dollar markets in what feels like the blink of an eye, with firms positioned well in the early stages of market development often achieving strong positions that become difficult to contest. As a result, competition authorities have had to grapple with the difficult task of motivating intervention in merger situations where a reinforced yet currently unproblematic position could lead to difficult to resolve competition concerns in the future. In this article we discuss the difficulties competition authorities face when assessing mergers in nascent and fast-growing markets. The recent divergence of the merger review outcomes by competition authorities in Microsoft/Activision highlights these difficulties and with it, in our view, the need for a more explicit and thus also rebuttable framework to assess future counterfactuals. We describe a framework which centres around the probability for an individual or sequence of future counterfactual events to occur for the transaction overall to still meet the fundamental “more likely than not” standard of proof of competitive harm. Such a framework thus allows for the incorporation of uncertainty, thereby providing a self-disciplining mechanism to the selection and weighting of considered counterfactuals, reducing regulatory uncertainty.
I. INTRODUCTION

In recent decades, horizontal transactions with immediate potential negative effects on consumers, such as price increases, were the focus of most authorities’ enforcement efforts. Vertical and conglomerate (non-horizontal) mergers, with more intricate theories of harm revolving around foreclosure or leveraging into other (adjacent) markets, held a less prominent position within merger enforcement.

For vertical mergers in particular, this diminished attention can be largely attributed to the influential “Chicago School” of thought. The school posited that anticompetitive effects arising from vertical transactions were unlikely to materialize under most circumstances. Their primary justification for this perspective was that the first-order effect of any vertical merger is the elimination of double marginalization—an inherently consumer-welfare increasing outcome. Furthermore, in all but the rarest cases the merged entity would also not have the incentive to foreclose competitors from upstream inputs it produces. Consequently, any theory of harm presented by authorities had to demonstrate that anticompetitive effects would outweigh the presumption of procompetitive advantages.

However, with the aim to curtail the market power of big-tech companies, antitrust authorities have redirected their focus towards theories of harm rooted in dynamic competition and ecosystems. This shift has led in particular to a revival of interest in non-horizontal merger enforcement, as big tech firms rarely have significant horizontal overlap with their targets, but the links are mainly of vertical or conglomerate nature. A recent manifestation of this shift is evident in the initial prohibition by the UK Competition and Markets Authority (“CMA”) of the Microsoft/Activision merger.

The CMA’s initial decision to prohibit the Microsoft/Activision merger has sparked extensive discussions within the antitrust community. This prohibition appears to be linked to the recommendations made in 2019 by the Digital Competition Expert Panel, advocating for a more assertive and risk-taking approach in enforcement by regulatory authorities, particularly in digital markets, which entails departing from traditional theories of harm. In these recommendations, the CMA was advised to “further prioritise scrutiny of mergers in digital markets and closely consider harm […] and impacts on potential competition.”

Significantly deviating from the foreclosure theory of harm initially pursued by the CMA, the prohibition was grounded in a forward-looking assessment of the nascent cloud gaming market. The CMA anticipated increasing popularity of cloud gaming, which would be characterized by increased competition in the absence of the merger. In consequence, the CMA concluded that the proposed merger would result in a substantial lessening of (future) competition.

Following the European Commission’s (“EC”) clearance of the transaction subject to remedies, Microsoft challenged the CMAs prohibition in court. The CMA then agreed to reopen the considerations as the EC’s approval had been seen as “material change in circumstances.” After Microsoft proposed new remedies, which included the sale of cloud gaming rights to Activision’s competitor Ubisoft, the deal was finally cleared by the CMA.


3 “Due to the elimination of double marginalization, mergers of vertically related firms will often result in the merged firm’s incurring lower costs for the upstream input than the downstream firm would have paid absent the merger. This is because the merged firm will have access to the upstream input at cost, whereas often the downstream firm would have paid a price that included a markup. The elimination of double marginalization is not a production, research and development, or procurement efficiency; it arises directly from the alignment of economic incentives between the merging firms.” https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf.

4 When foreclosing a rival, the vertically integrated firm loses sales to the part of market initially served by the rival. Only if the increased profit on its own sales offsets the profit on the lost sales, an incentive to foreclose exists.


6 CMA (April 2023), Anticipated acquisition by Microsoft of Activision Blizzard, Inc. – Final Report.

7 Ibid.


Nonetheless, the CMA’s initial prohibition decision showcases some of the difficulties authorities face when dealing with mergers in nascent markets – cloud gaming in this particular case. The less is known about how a market may develop, the harder it is for authorities to fully map out the consequences of a potential acquisition or, in turn, intervention. In this article, we focus on one building block of the theory of harm – the counterfactual. We discuss its role and highlight how the requirements for the counterfactual change in more dynamic and nascent markets.

II. THE RELEVANCE OF THE COUNTERFACTUAL IN MERGER ASSESSMENT

In merger enforcement the predominant question that needs to be answered is ‘what is the likely impact the notified transaction will have on the market’, specifically on consumer welfare. The underlying principle applied by competition authorities in their assessment is that a merger should not lead to a Significant Lessening of Competition (“SLC”) or Significant Impediment to Effective Competition (“SIEC”). Authorities thereby engage in a thought experiment, defining what the situation would be with and without the transaction, and ascribing the difference between the two to the transaction. If this difference is significantly negative for consumers, it establishes an SLC or SIEC.

This well-established comparative process, known as counterfactual reasoning, often relies on the status quo as the basis for the counterfactual against which a potential clearance of the notified transaction will be compared. It thereby assumes that the status quo contains the defining information for the likely future, and thus serves as the basis to project how the market is expected to evolve with and without the merger. This approach works well in mature, stable, and less dynamic markets, where the status quo is well established and thus projected market developments are quite robust. In such markets where there is no expectation of a fundamental change in the competitive dynamics over the merger review time horizon of 2-3 years, competition today is a good proxy for competition tomorrow. However, in cases where assuming the market remains unchanged post-merger isn’t sufficient, a more detailed approach to counterfactuals is needed.

Future market changes should and are being considered by competition authorities when developing the counterfactual. This might involve factors like a failing firm or the imminent entry of a new player into the market. Historically, counterfactuals deviating significantly from the status quo have been used infrequently, receiving acceptance only if their likely occurrence was seen as nearly certain.

More recent merger reviews, however, show a change in attitude towards the acceptance and application of forward-looking counterfactuals that differ significantly from the status quo. Driven particularly by transactions in the technology space, mergers such as Google/DoubleClick, Facebook/Instagram, Facebook/WhatsApp, and Microsoft/LinkedIn have created outcomes ex post that were ex ante perhaps unexpected.

As a result of these unforeseen outcomes, some argue the reliance on well-defined and clearly foreseeable counterfactuals does not sufficiently identify potential future harm, and results in under-enforcement and in end outcomes that are detrimental to consumers. Particularly in highly dynamic and nascent markets, an approach to the counterfactual may be necessary that sufficiently identifies the various potential negative outcomes a transaction may have in the future, thus allowing intervention despite uncertainty - even if within the review time horizon of 2-3 years no immediate harm is likely to occur. Foretelling the future is, however, no easy task.

III. CHALLENGES OF HIGHLY DYNAMIC AND NASCENT MARKETS

Traditionally, counterfactual reasoning was limited to a market assessment in the relatively short term. Limiting the forward-looking approach to the near future was justified by the fact that in most cases under review, any potential harm will likely materialize immediately. Furthermore, as time passes, uncertainty increases and thus predictions of potential outcomes can significantly diverge from one another. Any potential harm identified far in the future was therefore limited and discounted compared to short term effects, effectively outweighed by the significant increase in uncertainty.

Balancing the need for foresight with the challenges of an uncertain future was a crucial aspect of effective merger assessment, where the scales were tipped heavily in favor of conservative, status quo based, projections. In the current business landscape, and particularly within the realm of “big tech,” that balance may no longer be the right one to ensure the sustained competitiveness of markets.

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10 CMA (March 2021), Merger Assessment Guidelines.
The history of large technology companies, such as the MAAMA,\textsuperscript{12} are often characterized by organic growth, accompanied by trial and error. Google (Alphabet), for example, regularly develops new products or services while outcomes are still uncertain. The successful ones become integral components of their offering (e.g. Google Maps, Gmail) whereas others are consigned to history (e.g. Google Plus).

Many acquisitions are thus effectively bets on the future development of certain markets. The tech company may see potential for a new product or service into which it can leverage some experience from other markets or existing background infrastructure. If the potential pay-off is sufficiently large in the event of success, it can be in the business’ best interests to proceed with an acquisition or development of a product, even if the chance of success is relatively low.

Take the example of Google Maps, a product used by over 1 billion people today.\textsuperscript{13} Google Maps came about from the acquisition of three separate companies in 2004: Where 2 Technologies (mapping), Keyhole (satellite imaging), and ZipDash (traffic information).\textsuperscript{14} At the time Google Maps was a natural extension to web search. Users would frequently execute search queries related to geographic locations.\textsuperscript{15} At the time of these acquisitions, a market for online mapping was just taking off, tech firms like Yahoo, Microsoft, and AOL were developing mapping products and independent players such as Multimap.com were leading the market. The aim of Google was thus primarily to own a product that served the consumer need for an online map tool.

Today we know there are significant synergies between Google Search and Google Maps. Google Maps is an interesting place for advertisers to buy ad space. Additionally, data from Google Maps contains very valuable information for advertisers. These effects have further strengthened Alphabet’s position in the search and ad space – something that competition authorities may disfavor and that is difficult to “undo” using traditional antitrust tools.

The example of Google Maps highlights the difficulties of assessing the anticompetitive effects from conglomerate and vertical acquisitions in nascent markets for antitrust authorities. These acquisitions frequently fall through the cracks of conventional screening tools, as there is generally limited horizontal overlap between the entities involved and significant future uncertainty. Notably, many nascent products in the digital sphere are in the early stages of development. Because of this, at the time of acquisition and within the assessment timeframe of merger review, there may be no or little ability or incentive to vertically foreclose potential competitors.

Predicting the developments of any market more than two or three years into the future is a challenge in itself. Predicting dynamic markets is exponentially harder: a nascent market does not even offer a history or a relevant “status quo” with which future evolutions can be benchmarked, further complicating accurate predictions.

Given the large concerns that can arise from seemingly benign transactions, authorities are compelled to deal with a fundamental question: how to assess a merger in a market where the market is still in its infancy compared to its potential trajectory. This assessment is particularly relevant for the counterfactual, as the counterfactual describes what would happen absent the transaction.

The dynamic nature of these nascent markets, marked by uncertainties and evolving landscapes, have caused authorities to re-think traditional approaches to merger enforcement. Antitrust authorities must balance the inherent unpredictability of emerging markets with the imperative to safeguard competition and consumer welfare. In an era where the success of nascent markets holds transformative potential for whole sectors or industries, the assessment of mergers must be nuanced, forward-looking, and adaptive to ensure effective regulatory oversight.

**IV. THE IMPORTANCE OF THE COUNTERFACTUAL IS EVIDENCED BY THE MICROSOFT/ACTIVISION TRANSACTION**

In 2022, Microsoft announced that it would acquire the game developer and publisher Activision Blizzard (Activision) for almost $70bn. Activision is the publisher of well-known game franchises such as Call of Duty, World of Warcraft and Candy Crush.\textsuperscript{16} The deal required clearance by over

\begin{itemize}
  \item 12 Microsoft, Apple, Alphabet, Meta, Amazon.
\end{itemize}
15 antitrust authorities worldwide, including the U.S., UK, EU, China, and Japan. What stood out in the merger review process of this transaction was the focus on a market that, at present, holds only marginal significance and has a highly uncertain future.

In the Microsoft/Activision case, the competition authorities had to grapple with two separate but related issues. As a game console manufacturer, Microsoft could have had an incentive to foreclose its main rival, Sony, from Activision game titles. Initially this traditional foreclosure theory of harm was assessed by regulators in-depth. In the end, however, authorities found that due to the strength and importance of Sony’s PlayStation this transaction was unlikely to lead to anticompetitive foreclosure. This finding is not, in itself, of particular relevance for this article, beyond highlighting the complexity of vertical theories of harm in a merger context. Already in a mature and well-understood market such as (console) gaming, with a plethora of reliable data and a theory of harm with near-immediate effects, authorities must expend significant effort to assess likely competitive effects.

The second issue related to the nascent cloud gaming market, where consumers play games hosted in data centers rather than running them directly on their devices. The authorities also pursued a foreclosure theory in this market. The concern was that the transaction could lead to Microsoft obtaining market power, which in turn could result in the foreclosure of rivals. The issue identified was that if the cloud gaming market evolves to be important, the transaction could set up Microsoft’s position as a (dominant) leader in this space. Microsoft would then have market power and the ability and incentive to foreclose other players from accessing Activision games. This transaction could thus, if everything holds true, predetermine the market.

In this transaction, the competition authorities faced the challenge of assessing a merger in the context of a dynamic and nascent market. To account for this, the counterfactual was extended to consider the more distant future. This marked a departure from using predominantly historic information and the status quo to form the basis of the merger assessment, emphasizing the importance of a forward-looking perspective in evaluating the competitive implications of such transactions.

Taking the final report of the Competition and Markets Authority (“CMA”) as an example of authorities’ thinking on the theory of harm, four pivotal characteristics of the cloud gaming market can be identified on which the CMA would need to take a view to determine the likely future outcome of the transaction:

1. **Technical Difficulties in Cloud Gaming will be overcome:** The cloud gaming market is currently held back by technical constraints. Latency is a key issue in the gaming industry. The sooner the game registers an action of the player the bigger the advantage for the player is — especially for shooter games. Ensuring a low latency gaming experience where the hardware is not physically located with the customer is one of the key factors holding cloud gaming back. To determine whether the transaction could harm competition, one therefore needs to assess whether, in the future, a technical solution to this problem could likely be identified, resolving this issue.

2. **Profitability and Growth of Cloud Gaming:** At the time of writing, no cloud gaming provider can operate this type of service without incurring losses. Scale is a key issue for cloud gaming, as hosting the cloud service requires significant capital investment. With limited uptake, cloud gaming providers face severe cost inefficiencies as servers are mostly idle during the day, while usage spikes in the evening hours as consumers have time to play. The difficulties in resolving this issue is evidenced by Google shutting down its cloud gaming platform “Stadia” in January 2023 as it did not generate as much traction as anticipated. To determine whether the transaction could harm competition, one therefore needs to assess whether, in the future, it is likely that this issue could be resolved, e.g. because cloud gaming becomes ubiquitous or a more efficient allocation of resources becomes possible.

3. **Activision Content will become available on Cloud Gaming:** Activision is currently not active in the cloud gaming market in that it does not license its games to third parties for streaming, nor does it stream the games itself. Furthermore, Activision was publicly opposed to the idea of cloud gaming. Multiple statements by Activision indicated that but for the merger Activision content would not be available on cloud gaming platforms. To determine whether the transaction could harm competition, one therefore needs to assess how likely it is that, in the future, this Activision position on licensing its products could change.

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17 To draw a simplistic parallel, cloud gaming is to console gaming what video streaming is to watching DVDs.
18 CMA (April 2023), Anticipated acquisition by Microsoft of Activision Blizzard, Inc. — Final Report.
19 Games Industry.biz, Sony CEO: Cloud gaming’s “technical difficulties are high,” last accessed November 21, 2023, https://www.gamesindustry.biz/sony-ceo-cloud-gaming-technical-difficulties-are-high#:~:text=The%20CEO%20said%20latency%20is%20time%20to%20play%20games.
20 Protocol, Google Stadia’s shutdown is leaving a giant mess in its wake, last accessed November 21, 2023, https://www.protocol.com/newsletters/entertainment/google-stadia-shutdown-developers-aftermath#:~:text=Ultimately%20Stadia%20chief%20Harrison%20said%20with%20users%20that%20we%20expected.%E2%80%9D.
22 United States of America Federal Trade Commission (December 2022), Docket No. 9412 – Answer and Defenses of Respondent Activision Blizzard, Inc.
4. **Microsoft’s Incentive for Foreclosure:** Microsoft could have a strategic incentive to foreclose competitors’ access to Activision’s cloud gaming content post transaction. This step relies on the notion of “vertical arithmetic,” where market characteristics (predominantly margins and market shares) create incentives that encourage such foreclosures. To determine whether the transaction could harm competition, one therefore needs to assess whether, in the future, market characteristics could be such that foreclosure would be likely.

Each of these steps involves inherent uncertainty, with a certain likelihood attached to their occurrence. Overall, the CMA believed that the technical issues identified will be overcome, thus paving the way for the cloud gaming market to become important. And with the transaction, Microsoft would in the CMA’s view likely become a key player with potential ability and incentive to foreclose rivals of Activision content, which was considered important to be able to compete in cloud gaming overall. Because of this, the CMA initially blocked the merger, even after substantial remedies had been offered.23

Mirroring the CMA, the European Commission (“EC”) also considered potential harm in cloud gaming. The EC pursued a very similar theory of harm and concluded that cloud gaming could disrupt the gaming industry and that Microsoft would have the ability and incentive to foreclose rivals. The main difference between the CMA and the EC was in the acceptance of the initially proposed remedies. The remedies accepted by the EC include a free license to consumers in the EEA that would allow them to stream, via any cloud game streaming service of their choice, all current and future Activision Blizzard PC and console games for which they have a license. Moreover, the remedies include a corresponding free license to cloud game streaming service providers to allow EEA-based gamers to stream any Activision Blizzard’s PC and console games.24

The CMA, however, did not consider these remedies sufficient to address the concerns. This means the CMA must have had stronger concerns and expected anticompetitive outcomes with a higher probability. In one or all four of the above characteristics, therefore, the CMA must have believed a different outcome probability than the EC.

V. THE NEED FOR A MORE EXPLICIT APPROACH TO THE FUTURE COUNTERFACTUAL

Generally, divergent decisions of the EC and the CMA are an unwanted outcome of merger enforcement, when the divergent outcome reflects different assessments of the same effects, not different effects in different jurisdictions. The opacity of probabilities and weights attached to the future counterfactual becomes necessary for an antitrust authority in its assessment. A more explicit approach could therefore be helpful, not only to avoid divergent decision making, but also to allow businesses to better understand the rationales of authorities.

Traditionally, the benchmark for assessing anticompetitive effects is a simple one: they must be “more likely than not,” meaning a probability exceeding 50 percent.25 However, as counterfactual scenarios become more intricate, with an increase in the number of consecutive assumptions, clearing this threshold becomes more difficult. Crafting a complex forward-looking counterfactual demands a clear delineation of assumptions and their assigned probabilities.

Figure 1 provides a stylized visual representation of the assumptions underlying the CMAs counterfactual in the Microsoft/Activision case, each linked to a particular probability of occurrence. The visualization shows that each consecutive assumption being relevant requires the previous to be true, thereby even with relatively high probabilities assigned to each single assumption, the overall likelihood of the counterfactual outcome itself remains low. For example, if likelihoods are independent and each assumption’s likelihood of holding true is 75 percent, the probability of all four holding at the same time is only 42 percent (Probability P_A in Figure 1). Indeed, to exceed a probability of more than 50 percent that all four assumptions hold — assuming equal probabilities — each assumption would have to have a probability of more than 79 percent. Going one step further, if the overall probability of the sequence of event should exceed 50 percent, a single event cannot have a probability below 50 percent.26

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23 Eventually after a revised remedies package was put forward by the parties the CMA did revise its decision and clear the transaction.


26 This is because all assumptions have to hold simultaneously (AND connection). First the technical difficulties must be overcome. This occurs with probability P1. And the cloud gaming must become profitable (probability P2). Mathematically/Economically, these two probabilities must be multiplied with each other to calculate the probability of both occurring. For simplicity the schematic assumes independence of events, which may not be the case. The frameworks relevance remains valid where conditional probabilities may be necessary.
Indeed, with a single counterfactual of concern it will be increasingly hard to reach the threshold of 50 percent as the number of required assumptions increase. Going beyond a single counterfactual assessment, competition authorities could apply this framework to consider multiple counterfactuals in parallel that account for multiple different future outcomes, as shown in Figure 2. Each counterfactual scenario, based on a different set of assumptions, may have distinct implications for anticompetitive effects.
To exemplify this, in the figure above we have added a hypothetical additional counterfactual in which Activision would have started its own streaming service. In this scenario, there would be room for a horizontal theory of harm, as the transaction would remove Activision as a potential horizontal competitor to Microsoft in cloud gaming. Of course, this scenario is also linked to a set of assumptions underlying this counterfactual holding. The probability of this scenario happening is then $P_B$.

Ensuring that anticompetitive effects of the transaction are “more likely than not” requires an evaluation across all counterfactual scenarios, collectively exceeding the 50% likelihood threshold (in the above, $P_A + P_B$). Going a step further, such models open the door for even more nuanced considerations, such as weighing each counterfactual based on the expected severity of anticompetitive effects to obtain an overall average expected outcome of the reviewed transaction.

Admittedly, such a framework for assessing multiple potential theories of harm is not entirely new. Indeed, economists have argued that such a probability-based approach should always be applied to transactions, because in any forward-looking exercise there never exists a single truth against which to benchmark competitive effects. Instead, multiple outcomes may occur, and can be weighted by probability (and severity) to assess the likely impact of the transaction on average and in expectation.

Assessing mergers in the framework described provides benefits for both authorities and merging firms, particularly in transactions in highly dynamic or nascent markets. It allows for authorities to put forward multiple scenarios of harm for a transaction, rather than having to settle on a single scenario. This allows authorities to better address those transactions that are characterized by uncertain futures, and provides a clear indication of which theories of harm should be investigated with priority and are most likely to be relevant for the overall assessment. For firms, this framework has the potential to lead to clearer interactions with the authorities, as the resulting probabilities provide an explicit statement of the authorities’ assessment and thus become rebuttable.

VI. SUMMARY

With an increased interest in scrutinizing transactions involving non-horizontal theories of harm, particularly involving ecosystem settings, the difficulty of the uncertain future becomes more pronounced. A seemingly harmless transaction today could have a substantial and potentially irreversible undesired impact on market structures in the future. Owing to the high dynamism or even nascence of the market under investigation at the time of the transaction, predicting where markets will be in the future, and how firms could leverage earlier acquisitions for anticompetitive conduct, becomes difficult.

To reduce regulatory uncertainty, while accepting there is a need to intervene in mergers that may lead to substantial antitrust concerns further in the future, a more explicit approach to the treatment of counterfactuals is necessary. With the described framework in this article, such a goal can be accomplished while providing substantial benefits to the enforcement process. The framework requires authorities to be clear in their definition of the counterfactual(s) and the probabilities they assign to the assumptions made to get there. It also allows for multiple theories of harm to co-exist, which would overall better reflect the increased uncertainty of anticompetitive predictions made farther into the future. The added clarity of being explicit in these assumptions of probability also allows for a better understanding by outsiders of the choices made, and thereby also provides a clearer mechanism by which to rebut assumptions where applicable.

The divergent decision of competition authorities in the recent case Microsoft/Activision indicates that the current framework may be insufficient. It also seems likely that the future will see a multitude of transactions with similar characteristics. While overall the concept discussed in this article is not new, it seems the time is right to apply a more explicit framework to transactions involving non-horizontal theories of harm to obtain more robust and aligned merger decisions across jurisdictions.
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