

EXHIBIT 7

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**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA**

PEOPLE OF THE STATE OF CALIFORNIA,
et al.,
Plaintiffs,

v.

META PLATFORMS, INC, Instagram, LLC,
Meta Payments, Inc., Meta Platforms
Technologies, LLC., et al.,
Defendants

IN RE: SOCIAL MEDIA ADOLESCENT
ADDICTION/PERSONAL INJURY
PRODUCTS LIABILITY LITIGATION

THIS DOCUMENT RELATES TO:
4:23-cv-05448

MDL No. 3047

Case No. 4:23-cv-05448-YGR

Judge: Hon. Yvonne Gonzalez Rogers

Magistrate Judge: Hon. Peter H. Kang

**REBUTTAL TRIAL REPORT OF ADAM L. ALTER, PH.D.
NOVEMBER 21, 2025**

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I. EXECUTIVE SUMMARY OF OPINIONS

1. Based on my analyses of the Isaacson, Keller, and Venkataraman Reports, as well as my knowledge of Meta's public communications and internal documents, statements of Meta employees, and relevant academic literature, I have reached the following conclusions:

- A. None of the three rebuttal reports, or assertions contained therein, change any of the opinions I provided in my Opening Report.¹
- B. Each of the Isaacson, Keller, and Venkataraman Reports made a number of general claims that ignored essential contextual factors specific to social media platforms. The three Reports also demonstrated minimal, if any, engagement with relevant evidence from Meta's internal documents or testimony from Meta personnel, and failed to engage meaningfully with my examination of that evidence
- C. The Isaacson and Keller Reports are fundamentally flawed in their assessment of my opinions on deception. Specifically:
 - i. Drs. Isaacson and Keller incorrectly criticized my application of the social influence analysis framework. Social influence analysis is a robust and reliable methodological framework grounded in significant academic research.
 - ii. Dr. Isaacson's criticism of my decision not to conduct a consumer survey is invalid. A scientifically valid analysis in this case would not have been aided by, and did not require, a consumer survey.
 - iii. Drs. Isaacson and Keller incorrectly argued that social media platforms are not credence goods. Their opinions rely on an excessively narrow misrepresentation of the essential features of credence goods and indicate a failure to appreciate the contextual factors that define how consumers interact with and relate to Meta and its platforms.
 - iv. Dr. Isaacson incorrectly claimed that the definition of "reasonable consumer" provided in my Opening Report was circular. This criticism reflects confusion regarding how I applied psychological literature to elucidate the concept of the reasonable consumer.
 - v. Drs. Isaacson and Keller made unfounded criticisms of the list of persuasion tactics provided in my Opening Report. My Opening Report did not state that the tactics Meta discussed were inherently misleading or improper, and I selected the

¹ This report responds to a subset of the erroneous criticisms and conclusions provided by the Isaacson, Keller, and Venkataraman Reports. The absence of a response to any specific claim or criticism does not indicate that I accept that claim or criticism as sound.

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tactics themselves based on internal Meta documents that reflect Meta's public relations strategy.

- vi. Dr. Isaacson misconstrued the significance of Meta's internal documents: He incorrectly claimed that I misused BEEF data in my report and inappropriately compared it to CSER; incorrectly asserted that my analysis of Meta's Statement about its positive effect on "11 of 12" well-being issues is erroneous; and incorrectly claimed that my report misrepresented the Teen Mental Health study conducted by Creatures of Habit. My Opening Report did not claim that the studies I reviewed were generalizable to every Meta user, or that any one study in isolation established the harmfulness of Meta's platforms, or that the studies indicated that Meta's platforms produced only harmful consequences for their users. What these documents illustrated was that Meta had internal information showing harmful effects of its platforms to some users, which was material to consumers, and which Meta either obscured or omitted from its public messaging.
 - vii. Dr. Keller's opinion that "Meta is incentivized to create positive and safe experiences for users of Facebook and Instagram" in order to sustain growth in the long term is fundamentally mistaken. Dr. Keller's assessment of the market factors relevant to Meta's incentives and actions with respect to user safety ignores the essential fact that Meta's social media platforms are habit-forming. Additionally, Dr. Keller appears to baselessly assume that corporate decision-making is always conducted with long-term growth in mind, and accordingly that companies universally avoid strategies that contradict their long-term interests.
 - viii. Dr. Keller's claim that my Opening Report did not address whether consumers were exposed to, paid attention to, or understood Meta's Statements ignored key dimensions of my analysis, including the fact that consumers need not be exposed to the Statements themselves, verbatim, in order to be exposed to them through informal transmission of message gists, evidence of wide exposure to at least one of Meta's Statements on Facebook, evidence that Meta itself acknowledged that its messaging tended to spread through various consumer segments, and evidence provided by my own personal experience over more than a decade that has allowed me to gauge both consumer exposure and understanding.
 - ix. The Isaacson and Keller Reports ignored the substantial body of evidence underpinning my opinion that Meta's Statements tended to deceive. I did not rely on assumptions from counsel alone to reach the conclusion that Meta's Statements had a tendency to mislead consumers.
- D. The Venkataraman Report is fundamentally flawed in its assessment of my opinions on child-directedness. Specifically:
- i. Dr. Venkataraman's approach to assessing the child-directedness of Meta's platforms rests on a narrow analysis of segmented advertising revenue. In contrast, my methodology involved a comprehensive assessment of multiple sources of evidence to evaluate Meta's intended audience, the child-directedness

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of the content and features of Meta's platforms, and actual evidence that children use Facebook and Instagram.

- ii. Dr. Venkataraman applied an inappropriate standard that asserts a product must be "exclusively or predominantly" directed to children in order to be directed to that audience, contradicting academic research cited in his report finding that products targeted to a general audience may also appeal to a niche audience (including an audience of children).
- iii. Dr. Venkataraman dismissed the actual presence of millions of children on Meta's platform by focusing on the proportion of users that are children rather than the absolute number of children on the platform.
- iv. Dr. Venkataraman ignored evidence from Meta's own internal documents and marketing materials in which Meta states its intention to study and attract children and tweens to its platforms to compete with other social apps and secure long-term retention of users.

- 2. I retain the right to amend these opinions if I become aware of new information.

II. QUALIFICATIONS AND ASSIGNMENT

- 3. I am a Professor of Marketing and the Stansky Teaching Excellence Faculty Fellow at New York University's Stern School of Business, with an affiliated appointment in NYU's psychology department. I submitted an opening expert report in this matter on August 1, 2025 (the "Opening Report"). A full description of my qualifications appears in Section II of the Opening Report, and my CV and prior testimony are attached to that report as Appendices A and B, respectively.

- 4. I was subsequently asked by Plaintiffs in this matter to provide my opinions on the rebuttal reports of Drs. Bruce Isaacson (the "Isaacson Report"), Kevin Lane Keller (the "Keller Report"), and Sriraman Venkataraman (the "Venkataraman Report"), each dated October 17, 2025. Specifically, I was asked to evaluate these reports with respect to their methodologies, analyses, evidence, and conclusions, and to assess whether the claims made in them affect the

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opinions I offered in my Opening Report.

5. The materials I relied upon include the Isaacson, Keller, and Venkataraman Reports and their appendices, the sources cited herein and listed in Rebuttal Appendix A, and the materials listed in Appendix C to my Opening Report.

III. SUMMARY OF KEY CLAIMS IN THE ISAACSON, KELLER AND VENKATARAMAN REPORTS

6. In this section of my report, I describe the key claims contained in the Isaacson, Keller, and Venkataraman Reports (collectively, the “Rebuttal Reports”). This summary is not intended to be exhaustive, but instead represents a high-level overview of the erroneous opinions and conclusions offered in those reports.

7. The Isaacson Report asserted that the opinions in my Opening Report were “speculative and not based on an accepted methodology,” objecting to my use of a social influence analysis and to the fact that I did not conduct a survey.² Dr. Isaacson also argued that Meta’s platforms are not credence goods, that I mischaracterized Meta’s internal documents and research, and that there is “nothing inherently misleading or improper” about the persuasion tactics I identified and discussed.³

8. The Keller Report similarly rejected my use of the social influence analysis framework.⁴ Additionally, it took issue with my opinion that Meta prioritized business interests over well-being, arguing instead that “Meta is incentivized to create positive and safe experiences for users of Facebook and Instagram, including youths.”⁵ The Keller Report also claims that I failed to

² Isaacson Report, ¶ 2.

³ Isaacson Report, ¶¶ 3-5.

⁴ Keller Report, ¶ 2.

⁵ Keller Report, ¶ 3.

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adequately consider or address certain factors or counterarguments.⁶

9. The Venkataraman Report disputed my conclusion that Meta’s platforms target children under the age of 13 (U13).⁷ It challenged the methodology I used,⁸ and argued that I did not show that the platforms “appeal exclusively or predominantly to children.”⁹ It also included an analysis of advertising data that attempted to show that Meta’s platforms are not child-directed.¹⁰

IV. THE ISAACSON, KELLER, AND VENKATARAMAN REPORTS IGNORED ESSENTIAL CONTEXT AND FAILED TO ENGAGE WITH UNDERLYING EVIDENCE

10. This section of my report addresses certain general flaws that characterize all three Rebuttal Reports. In Section V below, I address Dr. Isaacson’s and Dr. Keller’s flawed criticisms with respect to my opinions on deception, and below that, in Section VI, I address Dr. Venkataraman’s flawed criticisms with respect to my opinions on child-directedness.

11. First, the criticisms presented of my Opening Report consisted largely of general claims that ignored essential contextual factors specific to social media platforms and the various issues they present. In general, Drs. Isaacson and Keller failed to ground their analyses in specific features of social media platforms that distinguish such platforms from other products in the wider marketplace. As such, their analyses failed to address how social media users in particular are likely to respond to Meta’s brand communications. The disregard for context and failure to engage with the specific dimensions of the social media industry is apparent throughout Dr. Keller’s and Dr. Isaacson’s Reports, affecting, for example, their criticisms of my

⁶ Keller Report, Sections V.A, V.C.

⁷ Venkataraman Report, ¶ 2.

⁸ Venkataraman Report, ¶ 1.

⁹ Venkataraman Report, ¶ 1.

¹⁰ Venkataraman Report, ¶ 1.

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methodology,¹¹ their representation of social media platforms as products,¹² their discussions of the persuasion tactics highlighted in my Opening Report,¹³ Dr. Isaacson's assessment of the relevance of BEEF data to consumer perception,¹⁴ and Dr. Keller's assessment of Meta's market incentives,¹⁵ among others. Dr. Venkataraman's report displayed similar flaws, and his Report failed entirely to engage with aspects of the consumer psychology and developmental psychology literatures that are essential to assessing the child-directedness of Meta's platforms. As I discuss in more detail below, the absence of this critical analytic lens led Dr. Venkataraman to make unfounded assumptions about what child-directedness entails,¹⁶ to disregard evidence of U13 users on Meta's platforms,¹⁷ and to ignore important evidence regarding Meta's intention to direct its platforms to children,¹⁸ among other errors.

12. Contextual factors are essential to a rigorous analysis of Meta's public communications, because, among other things, they help to define social media platforms as a specific product category, to characterize social media consumers' knowledge, motivations, and concerns, and to elucidate Meta's communications strategies and internal goals and priorities. By failing to incorporate such contextual factors into their analyses, Dr. Isaacson, Dr. Keller, and Dr. Venkataraman offer conclusions that are unreliable and invalid.

13. Second, the three Rebuttal Reports demonstrate minimal, if any, engagement with relevant evidence from Meta's internal documents or testimony from Meta personnel. Dr. Isaacson's Materials Reviewed appendix appears to include no produced documents other than a

¹¹ See Section V.A.

¹² See Section V.C.

¹³ See Section V.E.

¹⁴ See Section V.F.i.

¹⁵ See Section V.G.

¹⁶ See Section VI.B.

¹⁷ See Section VI.C.

¹⁸ See Section VI.D.

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handful of documents associated with the four studies he was explicitly asked to review by counsel,¹⁹ and Dr. Keller's Documents Considered appendix lists just a single produced document and a single deposition transcript.²⁰ Dr. Venkataraman appears to have cited only five internal Meta marketing documents, across both his Report and Documents Considered list, none of which he engages with meaningfully. Furthermore, the Rebuttal Reports fail to engage with my Opening Report's examination of, and reliance on, Meta's internal documents and deposition testimony, as described in detail below.²¹ As such, the Rebuttal Reports offer unreliable and invalid generic opinions that fail to reflect the facts, evidence, and characteristics of this case, fail to capture critical elements that characterize social media platforms and the social media industry more broadly, and directly contradict specific evidence produced in this case.

V. THE ISAACSON AND KELLER REPORTS ARE FUNDAMENTALLY FLAWED IN THEIR ASSESSMENT OF MY OPINIONS ON DECEPTION

A. Social influence analysis is a robust and reliable methodological framework

14. Both Dr. Isaacson and Dr. Keller assert that a social influence analysis (SIA) is an unreliable methodology for the purpose of assessing the impact of Meta's Statements.²²

15. Dr. Isaacson's and Dr. Keller's criticisms of the SIA approach are incorrect. In fact, the three prongs of SIA framework that I applied in my Opening Report—Context, Persuasion Tactics, and Consumer Understanding—reflect the core methodological approach of seminal research in social and cognitive psychology, two disciplines at the fore of analyzing corporate communication and its interpretation by consumers, and disciplines in which I have particular research expertise. Across social and cognitive psychology, researchers have published and the

¹⁹ Isaacson Report, Exhibit 2; Isaacson Report, ¶ 64.

²⁰ Keller Report, Appendix C.

²¹ See Section V.H.

²² Isaacson Report, ¶ 25; Keller Report, Section I, ¶ 2.

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field has widely adopted a number of frameworks that embody the idea that understanding human perception and behavior requires an assessment of the interaction between *person*, *stimulus*, and *context*.²³ That triad of factors is captured by the three prongs of the social influence analysis as I outlined it in my Opening Report: the Consumer Understanding prong describes factors relevant to the *person*, the Persuasion Tactics prong describes factors relevant to the *stimulus*, and the Context prong describes factors relevant to the broader social and cultural *context*. In determining which methodological approach would be most appropriate for this case, and in selecting the SIA as the most appropriate approach, I applied the same level of intellectual rigor that I do in my academic work.

16. Additionally, contrary to Dr. Keller's assertion that my Opening Report did not provide academic citations in support of my characterization of the "context" and "consumer understanding" components of the framework,²⁴ my Opening Report contains a robust range of citations in support of each of the three prongs. For example, ¶ 32 of my Opening Report explains that "[r]esearchers have documented the importance of all three elements in the analysis for interpreting and examining how people process information," and cites several academic

²³ See, e.g., Bandura, A. (1986), *Social Foundations of Thought and Action: A Social Cognitive Theory*, Englewood Cliffs, NJ: Prentice-Hall, with over 18,800 citations, <https://psycnet.apa.org/record/1985-98423-000>; Fiske, S. T., & Taylor, S. E. (1991), *Social Cognition* (2nd ed.), New York: McGraw-Hill, with over 23,000 citations: <https://scholar.google.com/citations?user=4jnrVhoAAAAJ&hl=en&oi=sra>; Forgas, J. P. (1995), "Mood and Judgment: The Affect Infusion Model (AIM)," *Psychological Bulletin*, 117(1), 39–66, with over 6,000 citations, <https://scholar.google.com/citations?user=ZJuQWBQAAAAJ&hl=en&oi=sra>; Lazarus, R. S. (1991), *Emotion and Adaptation*, New York: Oxford University Press, with over 6,000 citations, <https://psycnet.apa.org/record/1991-98760-000>; Smith, E. R., & Semin, G. R. (2004), "Socially Situated Cognition: Cognition in Its Social Context," *Advances in Experimental Social Psychology*, 36, 53–117, with over 900 citations, <https://scholar.google.com/citations?user=UQsnlOoAAAAJ&hl=en>; Kasperson, R. E., Renn, O., Slovic, P., et al. (1988), "The Social Amplification of Risk: A Conceptual Framework," *Risk Analysis*, 8(2), 177–187, with over 500 citations, <https://psycnet.apa.org/record/1989-15464-001>.

²⁴ Keller Report, ¶ 22.

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works. Among those citations, Benoit (2015),²⁵ Froehlich and Rüdiger (2006),²⁶ and Granata and Scozzese (2019)²⁷ are directly relevant to the importance of context to public relations and brand messaging, and each of Kahneman (2011),²⁸ Hassan and Barber (2021),²⁹ and Alter and Oppenheimer (2009)³⁰ describes features of information-processing that are directly relevant to questions about consumer understanding. Moreover, my Opening Report provides numerous additional citations in each of the sections that explain in detail and apply the respective prongs of the framework.³¹ The citations provided in my Opening Report were not designed to be exhaustive, but rather to provide a selection of examples from the field that illustrate similar approaches to the SIA framework I used. As fn. 23 above demonstrates, academic frameworks that are structurally equivalent to the SIA framework have been and continue to be widely applied and adopted by researchers in the fields of social and cognitive psychology. The academic literature that underlies the SIA framework allowed me to test and assess the conclusions I reached in my report, and the SIA framework itself provided the structure that ensured those assessments were rigorous and scientifically sound.

17. Finally, the SIA framework is also similar in a number of respects to established frameworks used in business case studies. Across sixteen years, I have taught marketing to thousands of students at New York University's Stern School of Business using a framework that

²⁵ Benoit, W. L. (2015), *Accounts, excuses, and apologies: Image repair theory and research* (2d ed.), State University of New York Press, Chs. 1-3.

²⁶ Froehlich, R. & Rüdiger, B. (2006), "Framing political public relations: Measuring success of political communication strategies in Germany," *Public Relations Review*, 32:18-25, pp. 18-19.

²⁷ Granata, G., & Scozzese, G. (2019), "The actions of e-branding and content marketing to improve consumer relationships," *European Scientific Journal*, 15(1):58-72, pp. 61-63.

²⁸ Kahneman, D. (2011), *Thinking, Fast and Slow*, Farrar, Straus and Giroux, Part II.

²⁹ Hassan, A., & Barber, S. J. (2021), "The effects of repetition frequency on the illusory truth effect," *Cognitive Research: Principles and Implications*, 6:38.

³⁰ Alter, A. L., & Oppenheimer, D. M. (2009), "Uniting the tribes of fluency to form a metacognitive nation," *Personality and Social Psychology Review*, 13:219-235.

³¹ See Opening Report, Sections VI-VIII.

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includes an analysis of the person, the stimulus, and the context. This framework has been used by marketing professors in my department and more broadly for decades (indeed, earlier versions of the slides my colleagues and I have adapted were created by other scholars more than thirty years ago). This framework includes a detailed examination of how consumers process information (both accurate and misleading); the persuasive techniques employed by the individuals and organizations communicating that information; and the contextual factors that shape how that information functions and might be interpreted by those consumers. In discussing such contextual factors, for example, I rely on a framework known by the acronym “PEST,” which traces back to the 1960s.³² According to PEST, marketing analyses should reflect prevailing political and legal conditions; economic conditions; social and cultural conditions; and technological conditions. In the present matter, the SIA ably captures these contextual conditions, and my analysis focuses on a relevant subset of the limbs of the PEST model as they apply to corporate communications within the social media industry.

B. A scientifically valid analysis in this case would not have been aided by, and did not require, a consumer survey

18. Dr. Isaacson further claimed that the absence of a consumer survey is a “serious limitation” of my analysis such that I “cannot reliably assess how consumers were likely to interpret or react to the statements by Meta.”³³ This criticism is invalid, both because I used alternative methodologies that were superior given my assignment and the nature of social media platforms as products, and because a consumer survey would have offered limited value in this

³² See Aguilar, F. J. (1967), *Scanning the Business Environment*, New York: Macmillan. Though Aguilar does not actually use the PEST acronym, his work is widely regarded as the origin of the PEST framework. See also Sammut-Bonnici, T., & Galea, D. (2015), “PEST analysis,” *Wiley Encyclopedia of Management*, <https://doi.org/10.1002/9781118785317.weom120113>.

³³ Isaacson Report, ¶ 30.

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context.

19. To begin, Dr. Isaacson was incorrect to state, peremptorily, that without a consumer survey my conclusions about how consumers understood Meta’s Statements were only “speculative.”³⁴ This dismissal ignores the importance of assessing the available evidence when selecting an appropriate methodology. As I do in every case, I examined the facts, evidence, and particulars relevant to Plaintiff’s allegations in this case *before* deciding on the optimal methodological approach. In this instance, the evidence required to form opinions on the effects of Meta’s Statements came from hundreds of the company’s internal documents, thousands of pages of deposition transcripts, a variety of third-party academic sources, and my own experience working on related issues over a long period of time. Of particular relevance, a number of internal Meta documents included in my Opening Report included survey results and other empirical data collected or commissioned by Meta itself.³⁵ These data, and the ways Meta used them to craft and disseminate its messaging, provide strong evidence of consumer understanding at the time the Statements were made. Additionally, as discussed in my Opening Report,³⁶ I have more than a decade of personal experience speaking with consumers about social media and their concerns about its effects on their children’s well-being. In aggregate, these conversations represent thousands of longitudinal data points that have allowed me to gauge consumer understanding across time, further reinforcing the opinions provided in my Opening Report.

³⁴ Isaacson Report, ¶ 30.

³⁵ See Opening Report, Section IX. As noted in my report, Meta relied on surveys that demonstrated consumers were concerned about negative health and safety impacts of social media (Opening Report, ¶¶ 109, 111-113); Meta emphasized the importance of communicating that it was a safe platform, particularly for young users (Opening Report, ¶¶ 114-122); and Meta researched the best ways to communicate the safety of its platforms (Opening Report, ¶¶ 125-129).

³⁶ See Opening Report, Section XI.C.

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20. Having performed this initial analysis, I used a combination of approaches to triangulate on a scientifically valid understanding of what reasonable consumers would have understood from Meta's Statements.³⁷ That combination of methodologies and approaches included: a) the application of a scientifically valid framework grounded in robust research to understand what consumers would have understood in this context;³⁸ b) the examination of numerous documents in evidence that described both what Meta's goals were in conveying its public messaging, and internal and third-party research capturing what consumers understood and believed at the time;³⁹ c) a number of internal Meta documents that included survey results and other empirical data collected or commissioned by Meta itself;⁴⁰ and d) my own experiences communicating with thousands of people who represent the audience of Meta's Statements over more than a decade to ascertain that they were uncertain about the nature of Meta's platforms, had been exposed to and were trying to understand Meta's communications about those platforms, and were frequently aware that Meta had reassured users that its platforms were safe and would not do harm. As such, this combination of theory, evidence, and longitudinal exposure to a large and diverse sample of relevant audience members converged to provide a reliable and valid picture of how reasonable consumers would understand Meta's Statements.

21. Second, I determined that this combination of methodologies was superior to a consumer survey in the present context in part because the majority of the Statements analyzed in my

³⁷ See Opening Report, ¶ 34 for discussion of convergent validity and triangulation.

³⁸ See Opening Report, ¶¶ 31-32, Sections VI-VIII.

³⁹ See Opening Report, ¶¶ 33, 35, Section IX and throughout Section X.

⁴⁰ See Opening Report, Section IX. As noted in my report, Meta relied on surveys that demonstrated consumers were concerned about negative health and safety impacts of social media (Opening Report, ¶¶ 109, 111-113); Meta emphasized the importance of communicating that it was a safe platform, particularly for young users (Opening Report, ¶¶ 114-122); and Meta researched the best ways to communicate the safety of its platforms (Opening Report, ¶¶ 125-129).

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Opening Report for their tendency to deceive were made by Meta or its representatives a number of years ago, between 2018 and 2022.⁴¹ As discussed in my Opening Report, relative to other industries and contexts, the social media industry is a particularly complex, unusually fluid, and rapidly-evolving product category.⁴² Across the many years during which I have examined this industry closely, both consumer understanding about the industry, and the nature of the industry and social media platforms themselves, have developed dramatically. A survey administered today about Statements made seven or more years ago would require that respondents strip away any information they have gleaned in those intervening years to furnish responses that capture their impressions at the time those Statements were made. Research in my field has shown repeatedly that humans are subject to hindsight bias and struggle to effectively “un-know” information they have processed and understood.⁴³ As such, I determined that a consumer survey was not the optimal methodology for understanding consumer impressions in this instance.

22. In sum, the combination of methodologies and approaches I used to interpret how reasonable consumers would understand Meta’s Statements in this context are superior to a consumer survey, which would provide limited value in this case.

C. Drs. Isaacson and Keller incorrectly argued that social media platforms are not credence goods

23. Dr. Isaacson and Dr. Keller both argued that social media platforms are not credence

⁴¹ See Opening Report, Tables 1-8, 10, 12, and 13.

⁴² See Opening Report, Section VI.

⁴³ See, e.g., Fischhoff, B. (1975), “Hindsight ≠ foresight: The effect of outcome knowledge on judgement under uncertainty,” *Journal of Experimental Psychology Human Perception and Performance* 1(3), 288-299; Hawkins, S. A. & Hastie, R. (1990), “Hindsight: Biased judgements of past events after the outcomes are known,” *Psychological Bulletin* 107(3), 311-327; Alter, A. L., Oppenheimer, D. M., & Zemla, J. C. (2010), “Missing the trees for the forest: A construal theory account of the Illusion of Explanatory Depth,” *Journal of Personality and Social Psychology*, 99, 436-451.

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goods.⁴⁴ However, their opinions rely on an excessively narrow misrepresentation of the essential features of credence goods.

24. Dr. Isaacson attempted to distinguish Meta’s platforms from other credence goods, such as oil changes and investment services, by noting that some aspects of social media platforms can be evaluated by consumers.⁴⁵ For example, he stated that “it is reasonable to expect that many consumers are able to tell whether using Facebook or Instagram makes them feel bad about themselves, whether they encounter harmful or disturbing content on either platform, or how much time they spend on social media.”⁴⁶ Importantly, this assertion conflates immediately harmful effects, such as encountering disturbing content, with harmful effects that may occur only after repeated exposure or long-term use, such as negative impacts on mental health. The latter category is much more difficult for consumers to identify or evaluate on their own. However, even taking Dr. Isaacson’s unsupported assumptions as true, this claim does not rule out the possibility that social media platforms are credence goods. Importantly, credence goods are not products that are not experienced *at all*—they are products that ordinary consumers are unable to accurately *assess* or *evaluate* prior to and while using those products.⁴⁷ The fact that a user has certain experiences and observations while using social media products does not mean those products are experience goods—just as, in the case of an oil change, experiencing one’s car breaking down and subsequently functioning again does not enable one to accurately evaluate the work performed by a mechanic.

25. Dr. Isaacson also noted that many consumers are likely to be highly motivated to

⁴⁴ Isaacson Report, Section 5; Keller Report, ¶ 25.

⁴⁵ Isaacson Report, ¶¶ 53-55.

⁴⁶ Isaacson Report, ¶ 55.

⁴⁷ Opening Report, ¶ 53.

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“evaluate the risks of using social media platforms, or to evaluate the risks of allowing others, such as a teen, to use social media platforms.”⁴⁸ I do not dispute this opinion, and as pointed out by Dr. Isaacson, I stated as much in my Opening Report.⁴⁹ However, again, that a consumer is highly motivated to seek out information about social media is tangential to the question of whether social media is a credence good. That consumers are motivated to seek answers does not guarantee that they will be successful in penetrating the opacity of social media technology and the internal workings of companies like Meta. Indeed, in this case, it is precisely consumers’ inability to properly evaluate the long-term safety implications of social media usage on their own that motivates them to seek answers from the many social media-focused researchers, books, and documentaries that have proliferated over the past decade.⁵⁰

26. Further, beyond consumers’ inability to evaluate the platforms themselves, consumers are unable to fully evaluate Meta’s own Statements and published metrics, such as its claims about its internal efforts to promote well-being, or its promotion of the so-called CSER “prevalence” metric as a proxy for the likelihood of harm on its platforms.⁵¹ Without access to internal discussions and decisions, and without the fuller context provided by the survey data from NETS, TRIPS, and BEEF⁵² that show that the CSER metric undercounts the likelihood of harm to consumers relative to other metrics, consumers are unable to conduct their own thorough,

⁴⁸ Isaacson Report, ¶ 55.

⁴⁹ Isaacson Report, ¶¶ 58-59; Opening Report, ¶¶ 83-84.

⁵⁰ Some recent books include: Haidt, J. (2024), *The Anxious Generation: How the Great Rewiring of Childhood is Causing an Epidemic of Mental Illness*; Shohet, N. (2023), *The Cyber-Safe Child: Parenting Responsible Children and Unlocking Online Safety in the Age of Social Media*; Lembke, A. (2022), *Dopamine Nation: Finding Balance in the Age of Indulgence*; Court, P. (2021), *Psychologist's Guide to Adolescents and Social Media*; Kang, S. K. (2020), *The Tech Solution: Creating Healthy Habits for Kids Growing Up in a Digital World*; McKnight, M. (2019), *Viral Parenting: A Guide to Boundaries, Building Trust, and Raising Responsible Kids in An Online World*. Notable documentaries include *The Social Dilemma* (2020), *Bloom* (2022), and *Can't Look Away: The Case Against Social Media* (2025). See also Opening Report, Section VI. D.

⁵¹ Opening Report, ¶¶ 164-166, 290.

⁵² See Opening Report ¶¶ 285, 308-326.

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informed evaluations of Meta’s platforms. In the context of these other survey results, it becomes clear that CSER is the outlier, both in its approach to measuring the frequency of harmful experiences and the scale of the harm it uncovers. Whereas CSER measures the “prevalence” of harm as the proportion of views of content that violate Meta’s community standards relative to all views of content on Facebook or Instagram,⁵³ NETS, TRIPS, and BEEF all measure harm by asking individual users how often they encountered a negative experience of some kind defined more broadly than viewing policy-violating posts.⁵⁴ As my Opening Report noted, NETS results from May 2019 found that 28% of respondents reported witnessing bullying or harassment in the previous seven days,⁵⁵ whereas BEEF results from 2021 found that number to be 28.3%.⁵⁶ Both of those figures are hundreds of times greater than CSER’s Q3 2021 metric of 0.05-0.06% of total page views being of content that violates Meta’s bullying and harassment standards.⁵⁷ Similarly, as explained in my Opening Report, one presentation estimated that the reach for witnessing bullying and harassment as measured by TRIPS was 100 times that of policy-violating impressions (the essence of which was captured by the CSER metric).⁵⁸

27. Because Dr. Isaacson did not engage in any depth with the categories of Statements outlined in my Opening Report, nor with the contextual factors that define consumers’ relationship to Meta and its platforms, his assessment that social media is not a credence good is unsupported and invalid.

28. In disputing my Opening Report’s opinion that social media platforms are a credence

⁵³ Opening Report, ¶ 276.

⁵⁴ See Opening Report ¶¶ 308-310, 314-315, 322.

⁵⁵ Opening Report, ¶ 310.

⁵⁶ Opening Report, ¶ 322.

⁵⁷ Opening Report, ¶ 329, Table 11.

⁵⁸ Opening Report, ¶ 317.

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good, Dr. Keller pointed to polling data I cited from 2020 that indicated that “a large share of parents...believed that their children had experienced negative impacts from social media.”⁵⁹ Dr. Keller took this as evidence that parents are, in fact, able to evaluate social media platforms. However, just as with Dr. Isaacson’s ill-founded criticism, the fact that consumers had—16 years after Facebook first launched—begun to suspect that social media use was leading to harmful experiences does not mean that social media platforms are not credence goods: Though parents may be able to observe and recognize effects in their children that they would describe as harms when asked in a survey, ordinary consumers have neither access to the information nor the expertise to construct a full understanding of the product and its wide-ranging effects on its users, and are therefore unable to evaluate it independently. Because of that inability, they are still unsure about how to direct their children and can still be influenced by Meta’s corporate messaging. Further, Meta’s own internal documents demonstrate that the company itself recognizes that it has a role to play in affecting how consumers perceive and understand its products. If social media platforms were truly experience goods—akin to, say, haircuts or feature films—Meta would expend substantially fewer resources in shaping how consumers perceive its products.

D. Dr. Isaacson incorrectly claimed that my definition of “reasonable consumer” is circular

29. Dr. Isaacson claimed that the definition of “reasonable consumer” provided in my Opening Report was circular, arguing that my Opening Report contended that “a consumer is reasonable only if the consumer acts in ways consistent with the literature that [I applied] to predict how consumers would have understood Meta’s statements.”⁶⁰ This criticism reflects

⁵⁹ Keller Report, ¶ 28.

⁶⁰ Isaacson Report, ¶ 43.

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confusion regarding how I applied psychological literature to elucidate the concept of the reasonable consumer in my Opening Report. In fact, my Opening Report drew on psychological literature to describe *modal* or *typical* consumer information-processing behavior, and noted that such behavior could be understood as “reasonable” consumer behavior from a psychological perspective. Then, those principles of reasonable consumer behavior were applied to derive particular assessments about what a likely consumer response would be in the circumstances under discussion. No part of that process is circular. Moreover, the identification of modal behavior as a means of understanding how ordinary, reasonable human beings will behave is at the core of consumer behavior research in general. The vast majority of studies in that field, and my own academic work, are defined by an attempt to examine and identify modal or reasonable consumer behavior across a range of contexts.

30. Dr. Isaacson also stated that my elucidation of the concept of a reasonable consumer from an information-processing perspective “does not match” other common definitions, such as the FTC’s definitions of a “consumer acting reasonably in the circumstances” or a “typical person looking at the ad.”⁶¹ However, these definitions require further elucidation, as they do not define reasonableness or provide a framework of what reasonableness actually entails in particular circumstances. Without these details, it is difficult to arrive at particular conclusions about what a reasonable consumer would do or understand. As such, the definition requires a substantive exposition of what “reasonable” means under the relevant circumstances. My Opening Report provided such detail by pulling from a robust psychological literature on consumer behavior.⁶²

⁶¹ Isaacson Report, ¶¶ 40-42.

⁶² Opening Report, Section VIII.

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E. Drs. Isaacson and Keller made unfounded criticisms of the list of persuasion tactics provided in my Opening Report

31. Dr. Isaacson and Dr. Keller both made unfounded criticisms of the persuasion tactics I provided in my Opening Report.

i. My Opening Report did not state that the tactics it discussed were inherently misleading or improper

32. First, both misrepresent my opinions regarding the nature of persuasion tactics. Dr. Isaacson asserted that the tactics mentioned in my report “are not inherently wrong or misleading per se.”⁶³ Dr. Keller similarly stated that “many of the five tactics are conventional marketing tools used by companies.”⁶⁴ Both of those claims are consistent with the opinions provided in my Opening Report, and I accept them as true. I did not claim that the tactics were inherently wrong, and I agree that communication strategies can be used in the service of transmitting messages that are neither false nor misleading, and that promote behaviors that enhance consumer well-being. For example, communications tactics might be used to encourage people to save for retirement, eat healthier foods, and exercise more regularly. They may also be used in situations where communicators decide they provide the most effective methods for transmitting information that is neutral in valence and not designed to encourage its audience to form particular conclusions or enact particular behaviors.

33. However, Dr. Isaacson’s and Dr. Keller’s focus on whether persuasion tactics are good or bad in the abstract ignores the question that actually matters in this context, which is what messages Meta was using those persuasion tactics to convey. As detailed in my Opening Report, the persuasion tactics that Meta employed are powerful forces that can be used to shape

⁶³ Isaacson Report, ¶ 108.

⁶⁴ Keller Report, ¶ 37.

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consumer perception and behavior.⁶⁵ The conclusion that I reached, and that Drs. Isaacson and Keller obscured in their respective discussions, is that Meta used those persuasion tactics improperly, by employing them to advance narratives that had a tendency to mislead consumers.⁶⁶ Whether the same tactics can also be used to spread truthful or helpful messages in other contexts is irrelevant.

ii. The tactics included in my Opening Report were selected based on Meta's own internal documents and reflect Meta's public relations strategy

34. Dr. Keller stated that my report did not “address numerous alternative tactics identified in the social influence literature” I relied upon.⁶⁷ This criticism is misguided, and asks me to provide information that is irrelevant to this case. My report focused on the specific tactics Meta used. In this case, based on my academic and professional experience, there would be no value in discussing a long list of persuasion tactics that have no relevance to Meta's actual communications strategy and behavior.

35. The tactics I examined appear in Meta's internal marketing and public relations materials. For example, Meta prepared several slide decks listing “proof points” for external communications, including one titled “CSN-7 Messages Tested” and another prepared by the Marketing Insights team that included a section dedicated to the subject, titled “Proofpoint Breakdown.”⁶⁸ The company also explicitly referenced “drumbeat” messaging, including in one document about synthesized research for the Core Supporting Narrative (CSN).⁶⁹ Meta's Core

⁶⁵ Opening Report, Sections VII.A.ii. and VIII.

⁶⁶ See Opening Report, ¶¶ 196, 259, 345, 383-384, 394-398.

⁶⁷ Keller Report, ¶ 37.

⁶⁸ See, e.g., META3047MDL-019-00057877, “CSN-7 Messages Tested,” and Deposition of Wendy Gross, PhD, January 28, 2025, Exhibit 18, which refer to “proof points.”

⁶⁹ See, e.g., META3047MDL-019-00056633, “[DRAFT/WIP] Research Synthesis for Core Supporting Narrative (CSN) on Well-being (#7),” May 31, 2022, at 635, which refers to “drumbeats.”

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Supporting Narrative is a clear example of deliberate agenda setting.⁷⁰ And in the case of side-stepping, Meta developed an internal document that advised against directly rebutting or discussing the topic of social media’s negative impact on teen mental health and well-being. Instead, it found that “Indirect rebuttals” that highlighted “Product proof pts [sic]” worked best to comfort and persuade consumers.⁷¹ Finally, when it comes to favorable metrics, the company specifically recommended using the selective data published in CSERs with “consumers” as “proof points” to change the negative external narrative regarding the platforms’ harmful content.⁷²

36. Dr. Keller also questioned whether the tactics I discussed could have different effects from the ones I described in my Opening Report, noting, for example, that, in some circumstances, repetition does not lead to increased persuasion.⁷³ However, this suggestion is another example of Dr. Keller’s failure to properly attend to relevant contextual factors: Meta’s own internal documents indicate that it was invested in drumbeat messaging as a strategy for persuasion, and, as I noted in my report, Meta conducted research on and tested the effectiveness of its communications strategies on consumers.⁷⁴ Dr. Keller’s speculations about what effects repetition might have in various circumstances are irrelevant to the issues under discussion.

F. Dr. Isaacson misconstrued the significance of Meta’s internal documents

37. Dr. Isaacson’s Report alleged that my Opening Report mischaracterized certain internal

⁷⁰ Opening Report, ¶¶ 127-128; META3047MDL-022-00059669, “Brand Strategy: Positioning Meta as an innovative company that the world roots for.”

⁷¹ Opening Report, ¶ 129; META3047MDL-035-00001376, “[DRAFT] Bad Science Rebuttals Mixed-Methods Study,” October 2022, at slide 2.

⁷² Opening Report ¶¶ 274-285; META3047MDL-003-00163297, “Company Narrative Audit,” March 2021, at 308.

⁷³ Keller Report, ¶ 39.

⁷⁴ Opening Report, ¶¶ 125-126.

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documents and research from Meta, including the BEEF and CSER data,⁷⁵ the Hard Life Moments study,⁷⁶ and the Teen Mental Health study.⁷⁷ Before responding to Dr. Isaacson's criticisms in more detail, it is important to note that, as I explained in my Opening Report, my purpose in reviewing internal Meta research such as the above studies was to understand the basis for certain assumptions provided to me by counsel, and to allow me to assess the contrast between Meta's external Statements and its internal information and actions.⁷⁸ My Opening Report did not claim that the studies I reviewed were generalizable to every Meta user, or that any one study in isolation established the harmfulness of Meta's platforms, or that the studies indicated that Meta's platforms produced only harmful consequences for their users. Thus, most of Dr. Isaacson's criticisms of my engagement with these documents are irrelevant to the role they played in my Opening Report, which was to illustrate that Meta had internal information of the harmful effects of its platforms, which was material to consumers, and which it either obscured or omitted from its public messaging.

i. Dr. Isaacson incorrectly claimed that I misused BEEF data in my report and inappropriately compared it to CSER data

38. Dr. Isaacson claimed that I misused the BEEF data in my Opening Report and argued that BEEF was "not designed to provide reliable and generalizable conclusions about the prevalence of harmful content,"⁷⁹ in particular because BEEF was not a representative survey.⁸⁰ However, I did not state in my Opening Report that BEEF was representative of the entire population of Instagram users, and, more importantly, its significance does not depend on its sample of data

⁷⁵ Isaacson Report, Section 6.C-D.

⁷⁶ Isaacson Report, Section 6.A.

⁷⁷ Isaacson Report, Section 6.B.

⁷⁸ See Opening Report, ¶ 294.

⁷⁹ Isaacson Report, ¶ 92.

⁸⁰ Isaacson Report, ¶ 93.

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representing some relevant population. BEEF is relevant to the analysis provided in my Opening Report because its results painted a grave picture of the prevalence of negative experiences that many Meta staff members took seriously, though these results were not communicated to the public.⁸¹ Despite the recognition that the BEEF data were highly informative, reliable, and used by Meta staff to set internal goals (just as CSER data was), Meta hid those data from the public and published only CSER data, a decision that functioned to minimize the appearance of harm on Meta's platforms.⁸² Further, Meta's own staff acknowledged that this selective publishing of data presented an "incomplete picture of the risks on the platform" that ultimately "tells a story in Meta's favor,"⁸³ that the difference between teens' own reports of their experiences in BEEF and the CSER metrics promoted by Meta presented "a material or critical gap,"⁸⁴ and that the findings provided by BEEF are "important things for parents to know" and "help provide a more complete and complimentary picture" of the risks to children.⁸⁵

39. Dr. Isaacson also criticized my comparison of BEEF and CSER metrics as "inappropriate" because, in his words, "CSER metrics are measured in a different manner than the BEEF survey results, and not in a manner that is misleading."⁸⁶ Dr. Isaacson argued that Meta's choice to measure prevalence as a rate of views of harmful content per 10,000 views, as CSER does, is reasonable given "the traffic on its platforms" and because users "vary in how often they visit social media platforms and how much time they spend in a session."⁸⁷

40. However, my Opening Report did not claim that the metrics were measured in the same

⁸¹ Opening Report, ¶¶ 321-333.

⁸² Opening Report, ¶ 325.

⁸³ See Opening Report ¶ 328; Deposition of Allison Lee, February 6, 2025, 259:6-18.

⁸⁴ See Opening Report, ¶ 332; Deposition of Arturo Béjar, April 7, 2025, 367:18-368:2.

⁸⁵ Deposition of Kang-Xing Jin, November 8, 2024, 527:16-21.

⁸⁶ Isaacson Report, ¶ 105.

⁸⁷ Isaacson Report, ¶¶ 100-101.

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way. In fact, my Report explicitly acknowledged that these metrics differed.⁸⁸ Instead, the comparison of these metrics is relevant because they were both recognized as significant measurements that captured two respective dimensions of the extent to which Meta’s platforms exposed users to harm.⁸⁹

41. My Opening Report also did not assert that the CSER prevalence measure on its own is “unreasonable” or misleading. Rather, Meta’s choice to present CSER data as a proxy for the prevalence of harm on its platforms—describing the CSER prevalence metric as “one of the most significant metrics [Meta] provide[s]”—was, and is, misleading.⁹⁰ As I explained in my Opening Report, “Meta created the impression that [the CSER] prevalence [metric] is a key indicator of the health and safety on its platforms, conveying [...] that a low prevalence of policy-violating content is an accurate gauge of the level of harm experienced by its users.”⁹¹ By only publishing these results and omitting others, like BEEF, “Meta selectively presented consumers with a sanitized picture of its platforms, selectively presenting data that omitted the alarming results of its internal research on the frequency of harms experienced by large numbers of users.”⁹² As such, the company’s decision to present CSER in this way is misleading, and omits critical data that indicated a far greater prevalence of harm on Meta’s platforms.

ii. Dr. Isaacson incorrectly asserted that my analysis of Meta’s Statement about its positive effect on “11 of 12” well-being issues is erroneous

42. In my Opening Report, I examined Meta’s Statement that research it conducted showed that “on 11 of 12 well-being issues, teenage girls who said they struggled with those difficult

⁸⁸ Opening Report, ¶ 330.

⁸⁹ Opening Report, ¶¶ 279, 321, 330.

⁹⁰ Opening Report, ¶¶ 279-282, Table 8, Statement C5.

⁹¹ Opening Report, ¶ 280.

⁹² Opening Report, ¶ 285.

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issues also said that Instagram made them better rather than worse.”⁹³ This “11 of 12” statistic was derived from research conducted by Meta as part of its Hard Life Moments study.⁹⁴ Dr. Isaacson claimed that my conclusion that Meta’s Statement tended to mislead consumers was “erroneous, as the underlying information that was conveyed by that statement was accurate.”⁹⁵ However, again, Dr. Isaacson failed to consider the context in which Meta made these Statements—context in the absence of which it is impossible to reliably evaluate the Statement’s tendency to mislead.

43. Dr. Isaacson asserted that a flaw in my criticism of Meta’s Hard Life Moments survey is that I used an incorrect denominator to calculate the percentages in my report.⁹⁶ He stated that I incorrectly noted that “31% of all survey respondents believed Instagram made ‘problematic use’ worse”⁹⁷ when in fact, the correct percentage is “31% of the 2,444 respondents... who answered the Impact Question on the issue... not 31%, of all 22,410 respondents.”⁹⁸ Additionally, he argued that I presented the findings of the survey in a “selective manner” by discussing the negative results.⁹⁹

44. Neither of these challenges substantively rebuts my opinion. As noted in my Opening Report, Meta’s use of this Statement is misleading because it ignored the significant percentage of respondents to the survey in question who believed that Instagram made these issues worse,

⁹³ Opening Report, Table 7, Statement C3.

⁹⁴ Nov. 2019, “Hard Life Moments – Mental Health Deep Dive,” *FB.com*, <https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-1.pdf>, at p. 14.

⁹⁵ Isaacson Report, ¶ 74.

⁹⁶ Isaacson Report, ¶ 70.

⁹⁷ Opening Report, ¶ 271.

⁹⁸ Isaacson Report, ¶ 70. Dr. Isaacson is correct that the sentence in my Opening Report is incomplete as stated; it should have read “31% of all survey respondents **who experienced ‘problematic use’** believed Instagram made ‘problematic use’ worse...” This correction does not impact my opinion that Meta’s drumbeat repetition of the “11 of 12” statistic—omitting context as well as other, more negative findings—tended to mislead consumers.

⁹⁹ Isaacson Report, ¶ 71.

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conveyed that *both* Meta’s internal research *and* external studies show that the platforms have an overall net positive, and represented just one statistic from one of many studies conducted or commissioned by Meta.¹⁰⁰ At the time that Meta was promoting this statistic, it had also collected internal data that showed “the average net effect of FB on people’s well-being is slightly negative” and that significant numbers of users experienced either mild or severe “problematic use,” negative social comparison, loneliness, or other negative outcomes.¹⁰¹ By omitting certain considerations that help to contextualize the “11 of 12” statistic, and by promoting this statistic rather than others, Meta misled consumers as to the actual negative impact of its platforms.

45. Finally, Dr. Isaacson seems to have opined that this, and other Statements, are not misleading because “the underlying information that was conveyed by that statement was accurate.”¹⁰² However, that position ignores a robust principle drawn from social and cognitive psychology: that statements can be both technically true *and* either used in a misleading fashion or subject to widespread misinterpretation by consumers.¹⁰³ Dr. Isaacson’s insistence that Meta’s Statement is not misleading because for the 11 issues in question, “higher percentages answered that using Instagram made the experienced issue better than answered that using Instagram made it worse” itself adopts Meta’s own deceptive framing of the relevant results.

¹⁰⁰ Opening Report, ¶¶ 271-273.

¹⁰¹ Opening Report, ¶ 273. META3047MDL-020-00230760, “Re: Background on Well-Being Contingency HC Ask,” April 17, 2019, at 761; META3047MDL-020-00263116, “Well-being Research: 10,000 Foot View,” March 6, 2019.

¹⁰² Isaacson Report, ¶ 74.

¹⁰³ See, e.g., Hastak, M., & Mazis, M. B. (2011), “Deception by implication: A typology of truthful but misleading advertising and labeling claims,” *Journal of Public Policy & Marketing*, 30(2), 157-167; Rogers, T., Zeckhauser, R., Gino, F., Norton, M. I., & Schweitzer, M. E. (2017), “Artful paltering: The risks and rewards of using truthful statements to mislead other,” *Journal of Personality and Social Psychology*, 112(3), 456-473.

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iii. Dr. Isaacson incorrectly claimed that my report misrepresented the Teen Mental Health study conducted by Creatures of Habit

46. Dr. Isaacson incorrectly claimed that I misrepresented this study, and inaccurately suggested that my Opening Report claimed that this research provided “statistically representative conclusions about causality.”¹⁰⁴ Notably, in this section of his Report, Dr. Isaacson’s criticism of my analysis reiterated many of Meta’s prepared talking points and annotations that were published following the leak of a presentation containing this study’s results to the *Wall Street Journal*.¹⁰⁵ For example, Dr. Isaacson claimed that I did not mention that “participants qualified for the qualitative study only if they were already experiencing a mental health issue,”¹⁰⁶ that “findings cannot be generalized to all teens, because teens who are not experiencing any mental health issues were a minority of those included in the research,”¹⁰⁷ that “harms such as negative social comparison, negative body image, and bullying may take place offline as well as on social media,”¹⁰⁸ and that the results of this study are meant to be “indicative,” not “definitive.”¹⁰⁹ As I noted in my Opening Report, these defenses were specifically designed by Meta to downplay its findings that suggested harm occurred on the platform,¹¹⁰ and Meta’s own researchers objected to the company’s defensive characterizations of the research and its implications.¹¹¹ In other words, regardless of whether this research was exploratory and relevant to only a subsample of Meta’s population of users, Meta minimized the importance of these studies despite evidence that the researchers who conducted those studies

¹⁰⁴ Isaacson Report, ¶¶ 75-76, 83.

¹⁰⁵ See Oct. 2019, “Teen Mental Health Deep Dive,” FB.com, <https://about.fb.com/wp-content/uploads/2021/09/Instagram-Teen-Annotated-Research-Deck-2.pdf>.

¹⁰⁶ Isaacson Report, ¶ 79.

¹⁰⁷ Isaacson Report, ¶ 79.

¹⁰⁸ Isaacson Report, ¶ 80.

¹⁰⁹ Isaacson Report, ¶ 83.

¹¹⁰ Opening Report, ¶¶ 340-344.

¹¹¹ See, e.g., Opening Report, ¶ 341; Deposition of Wendy Gross, PhD, January 28, 2025, Exhibit 26 at 4; Opening Report, ¶339; Deposition of Allison Lee, February 6, 2025, 139:12-140:7.

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understood them to provide valuable insights for and about the company.

G. Dr. Keller’s opinion that “Meta is incentivized to create positive and safe experiences for users of Facebook and Instagram” in order to sustain growth in the long term is fundamentally mistaken

47. Dr. Keller devoted a substantial portion of his report to the opinion that “market factors incentivize Meta to create positive and safe experiences for individuals, including youths, on Facebook and Instagram.”¹¹² More specifically, Dr. Keller stated that my Opening Report “...reveal[ed] a fundamental misunderstanding of how brands effectively generate long-term value for consumers,”¹¹³ that “[g]rowth and safety are not at odds with each-other,”¹¹⁴ and that, in general, the development of brand resonance¹¹⁵ and brand loyalty among Meta’s customers depends on Meta’s creation of positive, safe, experiences.¹¹⁶ On the basis of these claims, Dr. Keller suggested that my Opening Report’s assessment of Meta’s prioritization of growth and other business interests over user well-being was mistaken.¹¹⁷

48. Before responding to Dr. Keller’s assertions, it is important to note that, even if Meta’s incentives are to build a platform that creates positive experiences for people, as Dr. Keller says they are, that is consistent with Meta having made Statements that tend to mislead consumers. Indeed, Meta could have a long-term incentive to make its platform safe *and* intend to take actions in accordance with that incentive while still making public statements containing inaccuracies or material omissions. As such, Dr. Keller’s opinion that Meta is incentivized to create positive and safe experiences is strictly irrelevant to whether its Statements have a

¹¹² Keller Report, ¶ 58.

¹¹³ Keller Report, ¶ 55.

¹¹⁴ Keller Report, ¶ 55.

¹¹⁵ Dr. Keller states that “brand resonance occurs when customers feel they are “in sync” with the brand and have intense, active loyalty relationships with the brand.” See ¶ 56.

¹¹⁶ Keller Report, Section VI.

¹¹⁷ Keller Report, Section I, ¶ 3 & ¶¶ 53-58.

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tendency to deceive.

49. However, Dr. Keller's assessment of the market factors relevant to Meta's incentives and actions with respect to user safety is also fundamentally mistaken. In particular, it ignores the essential fact that Meta's social media platforms are *habit-forming*. While Dr. Keller's assertion that companies are incentivized to create positive experiences in order to sustain loyalty may be applicable to certain ordinary consumer products and services, social media platforms are not included within that set. Critically, users will continue to engage with products that are habit-forming even if their brands do not inspire loyalty or positivity in their users, and the success of those companies rest instead on how well their users *want* to use their products rather than how much those users *like* those products or the brands that produce them.¹¹⁸ Meta is one such company that rests on engagement and habitual use, and indeed company personnel recognized repeatedly in internal research and communications that the usage of its platforms can become "problematic" or "excessive."¹¹⁹ The habit-forming nature of social media means that many

¹¹⁸ See, e.g., Alter, A. (2017), *Irresistible*, pp. 87-89 on the distinction between *liking* and *wanting*. In the case of Meta's platforms, users may continue to *want* to use them even after they no longer *like* to do so. See also research by Kent Berridge: Berridge, K. C., Venier, I. L., and Robinson T. E. (1989), "Taste reactivity analysis of 6-Hydroxydopamine-Induced Aphasia: Implications for Arousal and Anhedonia Hypotheses of Dopamine Function," *Behavioral Neuroscience*, 103(1): 36-45.

¹¹⁹ Opening Report, ¶¶ 113, 195, 236, 240, 244, 246-247, 295-296, 300-301. See also META3047MDL-087-00030017, "Problematic Use of Facebook: User Journey, Personas & Opportunity Mapping," March 2020, at 043; META3047MDL-074-00027496, "Problematic Use On-Platform Measurement: Concentration survey results for IG," December 2022-January 2023; META3047MDL-136-00013164, "IG Mental Well-being: Multi-half Strategy," November 17, 2022, at 172; META3047MDL-019-00032957, "Problematic Use Note (Draft)," 2018, at 958; META3047MDL-087-00030017, "Problematic Use of Facebook: User Journey, Personas & Opportunity Mapping," March 2020, at 041; META3047MDL-020-00563113, "Facebook Addiction: A response to the public narrative based on clinical and neuroscience research," June 2018, at 116; META3047MDL-003-00166569, "[WIP] Problematic Use Product Strategy Brief," 2021; META3047MDL-113-00003044, "Problematic Use Major Concepts"; META3047MDL-019-00004797, "[WIP] What we Know About Social Media Problematic Use"; META3047MDL-040-00210633, "Re: CDS-Policy Pre-read," September 25, 2020; META3047MDL-020-00005380, "Problematic Use Overview: Past Product Investment and Future Opportunities," October 2020; Deposition of Kang-Xing Jin, November 8, 2024, Exhibit 35 at 1; META3047MDL-004-00003641, "Facebook's Measurement Strategy for Problematic Use [Well-Being]: Survey & First Results [October 2019]" November 14, 2019, at 644, 645, 646; META3047MDL-044-00111865, "Problematic Use POV," 2020; Deposition of Jennifer Guadagno, PhD, November 14, 2024,

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consumers will continue to use Meta's products even in the absence of brand resonance, and even if they are not having the positive and safe experiences Dr. Keller assumes are universal features of the consumer-brand relationship. Indeed, there are many examples of sectors and products in which such "brand resonance" is peripheral or even completely unrelated to product engagement and financial performance, including, for example, tobacco companies, e-cigarette companies, casinos, sports-betting companies, other companies that profit from gambling, oil and gas companies, payday loan companies, and other financial services companies that cater to financially-distressed consumers. These examples illustrate that companies and brands are capable of growing and achieving financial success even as consumers are harmed by their products, and even as the brand itself antagonizes rather than generates resonance with at least some of its users.¹²⁰ This is particularly true of Meta and other companies that attract young users to their products, as, relative to adult users, young users tend to be more impulsive, less capable of exerting self-control resources, more susceptible to habit formation, and more sensitive to social pressure. These developmental characteristics coax them to continue using

Exhibit 37 at 261; *see also* Deposition of Jennifer Guadagno, PhD, November 14, 2024, 310:21-311:6; META3047MDL-035-00005017, "Late Night Use: IG Mental Well-being, Problematic Use - Strategy and Design," August 4, 2022.

¹²⁰ For tobacco and e-cigarettes, *see* Jan. 23, 2018, "How Big Tobacco made cigarettes more addictive," *truthinitiative.org*, <https://truthinitiative.org/research-resources/harmful-effects-tobacco/how-big-tobacco-made-cigarettes-more-addictive>; Oct. 16, 2024, "E-cigarettes: Facts, stats and regulations," *truthinitiative.org*, <https://truthinitiative.org/research-resources/emerging-tobacco-products/e-cigarettes-facts-stats-and-regulations>. For companies that profit off of gambling, *see, e.g.*, Brown, Karen, Oct. 25, 2024, "Report: Most casino revenue in Massachusetts comes from problem gamblers," *nepm.org*, <https://www.nepm.org/regional-news/2024-10-25/report-most-casino-revenue-in-massachusetts-comes-from-problem-gamblers#>; Kiros, Hana, June 5, 2025, "I'm Treating Guys Who Would Never Be Caught Dead in a Casino," *TheAtlantic.com*, <https://www.theatlantic.com/health/archive/2025/06/sports-betting-gambling-addiction/683042/>; Vrentas, Jenny, Sep. 30, 2025, "Sports Betting Apps Have a Powerful New Tool to Keep Users Gambling," *NYTimes.com*, <https://www.nytimes.com/2025/09/30/business/live-in-game-sports-betting.html>. For oil and gas, *see* McGreal, Chris, June 30, 2021, "Big oil and gas kept a dirty secret for decades. Now they may pay the price," *TheGuardian.com*, <https://www.theguardian.com/environment/2021/jun/30/climate-crimes-oil-and-gas-environment>. For payday loans, *see* June 7, 2023, "What Does the Research Say About Payday Loans?" *Pew.org*, <https://www.pew.org/en/research-and-analysis/articles/2023/06/07/what-does-the-research-say-about-payday-loans>.

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certain habit-forming products even as they become alienated by the brands and companies behind those products.

50. Additionally, Dr. Keller appears to assume that corporate decision-making is always conducted with long-term growth in mind, and accordingly that companies universally avoid strategies that contradict their long-term interests. This assumption is baseless. Companies routinely prioritize immediate goals over long-term brand-building, frequently focusing on immediate profit, appeasing investors, and quelling public relations concerns, over enduring brand concerns and long-term strategy. Broadly, similar recent examples include Volkswagen's Diesel-gate, Wells Fargo's fake accounts in 2016, and Boeing's 737Max crisis.¹²¹ Indeed, as internal Meta documents demonstrate, the company routinely made decisions that were focused more on responding to immediate crises or other short-term public relations goals.¹²² Dr. Keller's baseless assumption that Meta will always act in accordance with its purported long-term incentives is exemplified by his discussion of various "features and tools that Meta develops that are consistent with promoting well-being,"¹²³ such as the time-spent dashboard which features the Daily Limit and Mute Notifications tools, Take a Break reminders, teen accounts, and hiding likes.¹²⁴ Because Dr. Keller has not examined any of Meta's internal documents that pertain to the features and tools he mentions—all of the sources Dr. Keller cites in describing these tools

¹²¹ See, e.g., Hotten, Russell, Dec. 10, 2015, "Volkswagen: The scandal explained," *BBC.com*, <https://www.bbc.com/news/business-34324772>; Sep. 8, 2016, "Consumer Financial Protection Bureau Fines Wells Fargo \$100 Million for Widespread Illegal Practice of Secretly Opening Unauthorized Accounts," *consumerfinance.gov*, <https://www.consumerfinance.gov/about-us/newsroom/consumer-financial-protection-bureau-fines-wells-fargo-100-million-widespread-illegal-practice-secretly-opening-unauthorized-accounts/>; George, Bill, Jan. 24, 2024, "Why Boeing's Problems with the 737 MAX Began More Than 25 Years Ago," *Harvard Business School*, <https://www.library.hbs.edu/working-knowledge/why-boeings-problems-with-737-max-began-more-than-25-years-ago>.

¹²² See, e.g., Opening Report, ¶¶ 169-195, which outlines Meta's decisions to lift the ban on cosmetic surgery filters, keep like counts visible, delay and weaken Private By Default, deny requests for additional resources for well-being initiatives, and generally deprioritize well-being initiatives in favor of growth concerns.

¹²³ Keller Report, ¶ 130.

¹²⁴ Keller Report, ¶¶ 124-129.

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are either popular press articles or Meta’s own publications—he has no basis on which to evaluative whether, in fact, these features “are consistent with promoting well-being,” nor whether they were consistent with promoting well-being at the time Meta’s Statements about them were made. Specifically, Dr. Keller has not engaged with any internal evidence pertaining to how these various tools were developed or implemented.¹²⁵ Dr. Keller appears to assume that, because Meta has described its tools as promoting well-being, they must in fact do so.

51. In sum, Dr. Keller’s discussion of Meta’s purported “incentives to create positive experiences” is largely an exercise in abstract theory that does not apply to Meta’s conduct, or the company’s ongoing strategic decision-making. Meta can—and, as its internal documents show, routinely did—sacrifice user well-being for the sake of its own business interests.

H. Dr. Keller’s claim that my Opening Report did not address whether consumers were exposed to, paid attention to, or understood Meta’s Statements, ignored key dimensions of my analysis.

52. In addressing whether and to what extent consumers were likely exposed to the content of Meta’s Statements, my Opening Report identified a number of factors that increased the likelihood of message diffusion,¹²⁶ and provided several examples of news media articles in which various Meta Statements were re-published. Dr. Keller claimed that those considerations did not constitute “adequate evidence of exposure and attention,”¹²⁷ and twice raised the possibility that consumers may not have been exposed to congressional testimony containing Meta’s Statements, or may have understood that testimony without being misled.¹²⁸ He also speculated that some consumers who were more educated, more interested, or more invested in

¹²⁵ See Opening Report, ¶¶ 177-179 (hiding like counts), 180-184 (Private By Default), 248-258 (Daily Limit, Mute Notifications, Take a Break, and Quiet Mode).

¹²⁶ Opening Report, Section XI.A.

¹²⁷ Keller Report, ¶ 46.

¹²⁸ Keller Report, ¶¶ 45, 47.

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issues related to social media might “conduct their own external research,” thereby affecting whether they were misled by Meta’s Statements.¹²⁹

53. Beyond failing to elaborate about why the factors I described, or the news media examples I gave, are not evidence of message diffusion, Dr. Keller’s criticism ignored essential dimensions of my original analysis. In particular, as my Opening Report explained, consumers need not be exposed to the verbatim Statements themselves in order to be exposed to them through informal transmission of message gists that capture the main claims expressed by those Statements.¹³⁰ That relatively few consumers may have watched Meta personnel delivering congressional testimony live, or read it verbatim, is therefore compatible with wide dissemination of, and exposure to, Meta’s claims among the consumer public. Moreover, the examples I provided of news media articles that re-published Meta’s claims were merely a sample of articles demonstrating that claims across the four Statement categories I identified had diffused throughout popular media. Except for one local news station, each of the media outlets that published those articles is popular among either the general public or the technology consumer segment, and each is known to have a substantial audience.¹³¹ Dr. Keller also neglected to acknowledge that my Opening Report provided evidence of wide exposure to Mr. Zuckerberg’s October 5, 2021 Facebook post denying that Meta prioritized profits over user well-being,¹³² as well as evidence that Meta itself was aware that its messaging tended to diffuse throughout various consumer segments.¹³³

54. Finally, Dr. Keller’s criticism completely ignored an additional strand of evidence

¹²⁹ Keller Report, ¶¶ 49-51.

¹³⁰ See Opening Report, ¶¶ 96-97, 386.

¹³¹ See Opening Report, ¶ 387.

¹³² See Opening Report, ¶ 388.

¹³³ See Opening Report, ¶¶ 389-391.

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indicating wide diffusion of Meta's messages, which is my own personal experience talking to consumers about these issues for more than a decade. As I explained above in Section V.B, the experience of communicating directly with thousands of people across time furnished me with a significant quantity of longitudinal data about the extent to which consumers had been exposed to and were attempting to interpret claims that Meta and its personnel had made about the company's platforms. As I explained in my Opening Report,¹³⁴ at numerous events across the United States, I encountered audience members raising many of the issues addressed by Meta's Statements. My personal experience discussing these issues with diverse audiences across the United States has allowed me to gauge understanding among ordinary, reasonable consumers, and, in particular, is far more representative of consumer understanding than is Dr. Keller's speculation regarding a fictional sliver of outlier consumers who were not theoretically misled because they did their own research.

I. The Isaacson and Keller Reports ignored the substantial body of evidence underpinning my opinion that Meta's Statements tended to deceive

55. Both the Isaacson Report and Keller Report suggest that I relied primarily on assumptions from counsel to reach the conclusion that Meta's Statements had a tendency to mislead consumers.¹³⁵ This criticism ignores that my Opening Report examined each of those assumptions carefully, and found that they were supported by a substantial body of evidence.¹³⁶ This underlying evidence played a considerable role in shaping and supporting my opinion that Meta's Statements tended to deceive its consumers.

56. For example, Dr. Isaacson suggested that my opinions regarding Statements A3-A6 and

¹³⁴ Opening Report, ¶ 392.

¹³⁵ Isaacson Report, ¶¶ 47-52; Keller Report, ¶¶ 53-55.

¹³⁶ See Opening Report, ¶¶ 167-195, 231-258, 293-344, 362-382.

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B3-B7 from my Opening Report were “undermined” by “their reliance on a series of assumptions provided to [me] by counsel.”¹³⁷ However, the discussion of those assumptions and the evidence that supported them spans multiple pages of my Opening Report.¹³⁸ Dr. Isaacson’s assertion that my opinions “rely” on the assumptions provided by counsel in a way that undermines their validity is simply a misrepresentation of my Opening Report.

VI. THE VENKATARAMAN REPORT IS FUNDAMENTALLY FLAWED IN ITS ASSESSMENT OF MY OPINIONS ON CHILD-DIRECTEDNESS

57. The Venkataraman Report exhibits several fundamental flaws, including its attempt to examine social media using analyses that fail to adequately address the questions at issue in this case, its application of the wrong standard of child-directedness, and its failure to appreciate evidence demonstrating the presence of millions of children on Meta's platforms, as well as Meta's intention to attract children to its platforms.

A. Dr. Venkataraman’s examination of the child-directedness of Meta’s platforms was fundamentally flawed, and in contrast to my analysis failed to consider critical evidence

58. Dr. Venkataraman criticized my approach to assessing the child-directedness of Meta’s platforms, arguing that it “disregards a substantial body of academic research in marketing and product development that demonstrates consumers exhibit heterogenous preferences for product and service features.”¹³⁹ In fact, my analysis was grounded in, among other foundations: a substantial body of academic research; two decades of academic experience in the domains of consumer psychology, social, and cognitive development; expertise in social media platforms and the social media industry; and a broad range of evidence that Dr. Venkataraman’s analysis

¹³⁷ Isaacson Report, ¶¶ 47, 49-52.

¹³⁸ For Statements A1-A9, *see* Opening Report, ¶¶ 167-195. For B1-B9, *see* Opening Report, ¶¶ 231-258.

¹³⁹ Venkataraman Report, ¶ 1.a.i.

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ignored entirely.

59. A valid analysis of whether a product is directed to a particular audience requires an examination of all available and relevant sources of theory, data, and evidence. Accordingly, the methodology I applied in my Opening Report considered multiple sources of convergent evidence to triangulate on the conclusion that Instagram and Facebook, and portions thereof, are directed to children. These sources of evidence included, among others: a) data capturing the actual presence of U13s on Meta’s platforms;¹⁴⁰ b) internal Meta documents describing the benefits of attracting an audience of U13s;¹⁴¹ c) internal Meta and third party documents and research projects studying children and tweens and the features or content they would find particularly appealing;¹⁴² d) internal Meta documents recognizing that tweens and teens overlap substantially such that a platform that targets teens necessarily targets tweens;¹⁴³ e) competitive analysis evidence indicating that Meta recognized its platforms needed to attract young users before they were captured by competing platforms including Snapchat and TikTok;¹⁴⁴ and f) considerable literature in cognitive and social psychology demonstrating that certain content is appealing to tweens¹⁴⁵ and demonstrating that tweens view teens with aspiration such that products designed for teens necessarily target tweens.¹⁴⁶

¹⁴⁰ See, e.g., Opening Report, ¶¶ 508-512, 570-574.

¹⁴¹ See, e.g., Opening Report, ¶¶ 458, 534.

¹⁴² See, e.g., Opening Report, ¶¶ 433, 444-447, 459, 537-539.

¹⁴³ See, e.g., Opening Report, ¶¶ 457, 538.

¹⁴⁴ See, e.g., Opening Report, ¶¶ 470, 473-474, 544, 548.

¹⁴⁵ See, e.g., Opening Report, ¶¶ 416-421. For broad discussions of content appealing to tweens, see, e.g.: Bulger, M., Madden, M., Sobel, K., & Davison, P. (2021), “The missing middle: Reimagining a future for tweens, teens, and public media,” *Joan Ganz Cooney Center at Sesame Workshop*, retrieved from: https://joanganzcooneycenter.org/wp-content/uploads/2021/05/jgcc_missingmiddle.pdf; Livingstone, S. (2002), *Young people and new media: Childhood and the changing media environment*, London: SAGE Publications; Common Sense Media (2022), “The common sense census: Media use by tweens and teens, 2021” *Common Sense Media*, retrieved from <https://www.commonsensemedia.org/research/the-common-sense-census-media-use-by-tweens-and-teens-2021>.

¹⁴⁶ See, e.g., Opening Report, ¶¶ 408-409, 411-415. See also Brown, B. B., & Larson, J. (2009), “Peer

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60. In contrast to my comprehensive examination grounded in both theory and evidence, Dr. Venkataraman relied on only a sliver of the available evidence. His analysis, which centered on engagement and advertising revenue data, was both flawed and insufficient to support any claims about which audiences Meta stated that it intended to target and actually targeted. To begin, Dr. Venkataraman acknowledged that he did not perform an analysis of Instagram or Facebook's use by, or revenue from, children.¹⁴⁷ As such, on that basis alone, Dr. Venkataraman's claims that Meta's advertising revenue data were relevant to a directedness analysis are fundamentally flawed. Moreover, as my analysis illustrated, there were many other sources of data in this case that *did* demonstrate both the number of U13s on Meta's platforms, and the company's intentions to direct Instagram and Facebook to that audience, which Dr. Venkataraman ignores in his analysis. Similarly, an examination of the platforms' features and content indicates that Instagram and Facebook were directed to children and tweens. Dr. Venkataraman's analysis notably failed to engage with these highly diagnostic sources of evidence, resting instead on the shaky foundation provided by tangential advertising revenue data that were designed explicitly so they could not capture the presence of U13-targeted advertising content, and similarly unreliable data concerning a number of accounts I did not even *assess* in my report, much less rely upon.¹⁴⁸ As such, Dr. Venkataraman's criticisms of my conclusion that Instagram and

relationships in adolescence," in R. M. Lerner & L. Steinberg (Eds.), *Handbook of Adolescent Psychology: Contextual Influences on Adolescent Development* (3rd ed., pp. 74-103); McArthur, B.A., Madigan, S., & Korczak, D. J. (2021), "Tweens are not teens: the problem of amalgamating broad age groups when making pandemic recommendations," *Canadian Journal of Public Health*, 112:984-987; Sørenssen, I.K. (2018), "Disney's *High School Musical* and the construction of the tween audience," *Global Studies of Childhood*, 8(3):213-224; Sørenssen, I. K. (2012) "Tweens as a commercial target group: children and Disney filling the category," in *Situating Child Consumption: Rethinking values and notions of children, childhood and consumption* (pp.177-193), Nordic Academic Press, retrieved from https://www.academia.edu/1976557/Tweens_as_a_commercial_target_group_children_and_Disney_filling_the_category.

¹⁴⁷ See Venkataraman Report, ¶¶ 60, 63, 76.

¹⁴⁸ See Venkataraman Report, ¶¶ 65-67, 76.

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Facebook are directed to U13s are invalid.

61. The importance of a comprehensive treatment of Meta’s platforms is reinforced by Dr. Venkataraman’s inapposite counterexamples. For example, Dr. Venkataraman claimed that my analytic framework would classify LinkedIn as “child-directed” because it incorporates certain features (emoji reactions, short-form video) and content (occasional appearance of animated characters).¹⁴⁹ Tellingly, however, Dr. Venkataraman noted that LinkedIn is “expressly designed and marketed as a professional networking platform,”¹⁵⁰ demonstrating that, even if the platform’s animations or short videos might attract the attention of children, the platform’s focus on work and professional life renders it far less likely to appeal to children.¹⁵¹ This facile analysis illustrates the importance of applying the kind of comprehensive framework that I applied in my Opening Report: a valid review of whether a platform is child-directed should assess the company’s stated purpose, its target audience, key platform features, site content, and the actual audience captured by the platform. These components *converge* to produce the conclusion that Meta’s platforms are directed to children.

62. Beyond its reliance on inapt and incomplete evidence, Dr. Venkataraman’s analysis was also flawed because it rests on the fundamentally unsound claim that products cannot be directed to both a general audience and to what Dr. Venkataraman calls “niche audiences.” For example, he stated that, “The breadth of appeal across consumer segments is fundamental to determining whether a product or service should be classified as targeting **a niche (directed) or a broad**

¹⁴⁹ Venkataraman Report, ¶ 50.b.

¹⁵⁰ Venkataraman Report, ¶ 50.b.

¹⁵¹ Dr. Venkataraman also offered other, equally shallow, assessments of content that he asserted would qualify as directed to children using my framework. For example, he erroneously suggested that I would assess any use of emoji or animation as being directed to children regardless of the context and intent of that use (*see, e.g.,* Venkataraman Report, ¶¶ 128, 130, 133).

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(general) audience [emphasis added].”¹⁵² He similarly titled Section V of his report: “From a Marketing and Product Development Perspective Facebook and Instagram Are Platforms Targeted to a General Audience, Not U13 [emphasis added].” This dichotomous classification of strategies as “either niche or general” is artificial, and it fails to reflect both how many companies pursue individually targeted consumer segments, and the way Meta specifically targets desirable consumer segments. Moreover, this dichotomous classification is particularly unsuited to an analysis of social media. As discussed in my Opening Report, social media platforms generally, and Meta’s platforms specifically, present a personalized experience to each user, exposing different segments of consumers to a materially different content experience within the same platform.¹⁵³

63. My analysis of the child-directedness of Meta’s platform was grounded in a thorough examination of multiple sources of evidence and theory. These sources illustrated Meta’s intention to direct Instagram and Facebook to U13s, the fact that such users used and continue to use both platforms, and the tendency for product content and features that appeal to teens to also appeal to tweens.

B. Dr. Venkataraman applied an inapposite standard when assessing whether Meta’s platforms were directed to children, asserting that a platform must “exclusively or predominantly” appeal to children

64. Dr. Venkataraman dedicated much of his Report to arguing that, because Meta’s platforms are targeted to a general audience, they are necessarily not directed to children as well.¹⁵⁴ At its core rests a disagreement on definitions: Dr. Venkataraman asserted that “directed

¹⁵² Venkataraman Report, ¶ 1.a.i.

¹⁵³ See, e.g., Opening Report, ¶¶ 491, 558.

¹⁵⁴ See, e.g., Venkataraman Report, ¶ 1.b.

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to children” or “targeted to children” must mean that a service “either exclusively or predominantly” appeals to U13s,¹⁵⁵ whereas I defined those phrases as meaning that “based on an assessment of the totality of the circumstances, children are a target audience of the service or portions of the service.”¹⁵⁶ Relying on his different definition, Dr. Venkataraman asserted that his analysis “demonstrates that Facebook and Instagram are general-audience platforms, and not child-directed platforms as Professor Alter erroneously claims.”¹⁵⁷ Dr. Venkataraman is incorrect that his definition is required, or that my definition is inappropriate, invalidating his criticism of my Opening Report.

65. A platform and its features may still be appealing to, and indeed targeted to, U13 users without being “either exclusively or predominantly” appealing to those users.¹⁵⁸ By adopting this unjustifiably narrow test, Dr. Venkataraman dismissed the notion that Meta’s marketing strategy involves attracting child and tween consumers. Further, Dr. Venkataraman failed to engage with evidence in Meta’s internal documents demonstrating that young users represent desirable targets because they have higher rates of long-term retention,¹⁵⁹ and evidence that acknowledges that a user’s “presence at [a] younger age can impact usage at older age.”¹⁶⁰ He also failed to address the significant extent to which Meta adopted tween-centric product features that various Meta personnel had observed on TikTok and Snapchat.¹⁶¹ Moreover, Dr. Venkataraman failed to address evidence indicating that Instagram and Facebook, and portions of both platforms, are

¹⁵⁵ See, e.g., Venkataraman Report, ¶ 1.a.ii.

¹⁵⁶ Opening Report, ¶ 399.

¹⁵⁷ Venkataraman Report, ¶ 2.

¹⁵⁸ This is a point that Dr. Venkataraman himself appears to accept, as his section reviewing academic literature is titled “In the Field of Marketing and Product Development, Products Targeted to a General Audience May Also Appeal to Specific Audiences.” Venkataraman Report, Section 4.A.

¹⁵⁹ META3047MDL-047-00544632, “M&A and Market Landscape Review: Long Term Retention and its Implications,” December 2018, at slide 4 and 5 (Chen Deposition Exhibit #13).

¹⁶⁰ Opening Report, ¶ 432. See META3047MDL-003-00134648, “2017 Teens Strategic Focus,” October 27, 2016, at 677.

¹⁶¹ See Opening Report, ¶¶ 467-476, 543-549.

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appealing to, and in fact include a significant audience of, child and tween users.

C. Dr. Venkataraman focused on the proportion of Facebook and Instagram users who identified themselves as teens and adults, ignoring third-party data and Meta’s own internal evidence that millions of tweens and teens actually use the company’s Platforms

66. To illustrate his view that Meta’s platforms are targeted to a general audience, Dr. Venkataraman considered a series of analyses that measure the *portion* of young users on the platform as a share of the overall user base. This approach falls short in at least two ways.

67. First, it rests on the invalid assumption that a product cannot be directed to a specific segment of the population if the majority of its audience is not captured by that segment. As I demonstrated in my Opening Report, there is reliable evidence that millions of children use Meta’s platforms.¹⁶² The absolute presence of child users is captured in Meta’s own documents (which Dr. Venkataraman did not consider in his analysis), and in third-party surveys and estimates. I reported several estimates from Meta’s own documents, including a finding in 2021 that a majority of 11- and 12-year-olds use Instagram,¹⁶³ and a finding in 2020 that 44% of 10- to 12-year-olds used Facebook.¹⁶⁴

68. Dr. Venkataraman downplayed the presence of young users by reporting that about 2% and between 5% and 7% of Facebook and Instagram’s monthly active users (MAUs),

¹⁶² Opening Report, ¶¶ 508-512, 570-574. See META3047MDL-003-00135848, “Re: Instagram Teens HPM 0 23 Jan 2017,” at 851; META3047MDL-047-00608197, “Project Neo Understand: IG-Relevant Data,” 2017, at 197-198; META3047MDL-014-00133662, “H2/H1 2018 Youth Team Review,” 2018, at 666; META3047MDL-003-00124140, “Messenger Kids: Next Steps App Profile,” October 2020 at 4191; META3047MDL-003-00124140, “Messenger Kids: Next Steps App Profile,” October 2020 at 4207; META3047MDL-003-00124140, “Messenger Kids: Next Steps App Profile,” October 2020, at 191; and META3047MDL-003-00016725, “Youth Landscape and Opportunities for IG,” July 2021, at 741.

¹⁶³ Opening Report, Table 15; see META3047MDL-172-00000001, “Damian Valdes's post in Youth Team needs approval,” Direct Messages, August 31, 2021, at 001.

¹⁶⁴ Opening Report ¶ 573; see META3047MDL-003-00124140, “Messenger Kids: Next Steps App Profile,” October 2020, at 191.

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respectively, are teens under the age of 18.¹⁶⁵ Notably, he reported this share of users in millions—around 4 million MAUs on Facebook and 13 million on Instagram—without appearing to recognize that a product with millions of users from a particular demographic (representing one-third or more of that demographic overall) necessarily appeals to that audience.

69. Second, Dr. Venkataraman’s reliance on quantifying the portion of overall users who are young users fails to appreciate the vast number of young users, in absolute terms, that use Meta’s platforms. For example, Dr. Venkataraman noted that “only” 14.5% of the followers of Kim Kardashian’s Instagram account report being teen-aged,¹⁶⁶ ignoring that in absolute terms this proportion represents more than 51,000,000 users. Indeed, my decision to introduce Kim Kardashian in my Opening Report was inspired by an internal Meta document that identified Kim Kardashian among a list of celebrities who Meta sought to utilize as part of initiatives to attract tweens and young teens.¹⁶⁷ Dr. Venkataraman’s analysis therefore contradicts Meta’s own internal assessment of Kim Kardashian’s appeal, and downplays the substantial number of teens that follow her account. Further, based on Dr. Venkataraman’s own estimate that teens account for less than 10% of all Instagram users, this example validates Meta’s internal documents by indicating that Ms. Kardashian is disproportionately attractive to tween and teen audiences, even if they are not her exclusive or predominant followers.

70. Dr. Venkataraman employed a similar argument to attempt to refute my claim that Nickelodeon advertises to children on Meta’s platforms. Specifically, he asserted that the

¹⁶⁵ Venkataraman Report, ¶ 61.

¹⁶⁶ Venkataraman Report, ¶ 149.

¹⁶⁷ Opening Report, ¶ 559. *See* META3047MDL-003-00084997, “Rob’s Youth Update,” September 2018, at 022.

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example of Nickelodeon “says little about whether the platforms (in whole or in part) target or appeal to children” because my Opening Report “does not (and cannot) show that Nickelodeon is in any way representative of all advertisers on the platform[s]” and because “the vast majority of ad impressions, clicks, and advertising revenue [on Nickelodeon’s Meta ads are] from users that are 18 or older.”¹⁶⁸ He analyzed ad revenue and impressions by age group, focusing on Nickelodeon’s success with audiences of 18- to 35-year-olds, but failed to address the fact that while teens make up between 5-7% of users on Instagram, 15% of impressions for Nickelodeon ads on the platform are generated by teens.¹⁶⁹ He similarly finds 4% of impressions on Facebook are from teens, double the 2% share of users teen users of the platform.¹⁷⁰ As such, Nickelodeon ads disproportionately target young users on Meta’s platforms by a factor of at least two (and since Meta does not collect data regarding users under the age of 13, this weighting may be higher among U13 users). Further, Dr. Venkataraman ignored the underlying evidence I discussed in my Opening Report indicating that Nickelodeon explicitly intended to reach children when it advertised on Meta’s platforms. Nickelodeon’s *Warped* marketing deck, for example, discussed the company’s strategy for advertising to 6- to 11-year-olds on Instagram and Facebook.¹⁷¹

71. Dr. Venkataraman cited another Nickelodeon marketing deck from 2022 to claim that the brand both distinguished between adults and children, and focused its targeting efforts on users aged 13 and over. He asserted that the 2022 marketing deck expressed “best practices for paid

¹⁶⁸ Venkataraman Report, ¶ 91.

¹⁶⁹ Venkataraman Report, ¶¶ 61, 94, Table 17.

¹⁷⁰ Venkataraman Report, ¶¶ 61, 94, Table 17.

¹⁷¹ Opening Report, ¶ 501. See AG-MDL3047-105164, “Warped: Media Recommendation,” November 2021 at 116. He also ignores Nickelodeon’s *Kids’ Choice Awards* slide deck from 2022 which observed that “Instagram Stories and Reels,” features Meta itself identified as popular with tweens, provided “a hot spot for engagement” among tween girls through Brat TV. See Opening Report, ¶ 506, AG-MDL3047-105579, “Kid’s Choice Awards Wrap Report 2022,” 2022 at 594.

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social advertising which highlight the needs to appeal to older audiences,”¹⁷² and that it “corroborat[es] his empirical findings” that “Nickelodeon primarily targets” the 18-24 and 25-24 age groups, not teens or tweens.¹⁷³ Critically, however, his interpretation of the document failed to note that Nickelodeon was acknowledging that its existing strategy involved targeting U13 users, and the company was now considering the need to respond to changes in the regulatory landscape (see Figure 1, below).¹⁷⁴

Figure 1. The Nickelodeon deck focuses on the need to shift its strategy given regulations around children on social media¹⁷⁵

Landscape Update

- Regulatory landscape in the US is changing; social platforms (FB, IG, Snap, Twitter, TikTok, ...) users are no longer considered to be definitively 13+
 - Predictions that minimum age to create an account may even increase
- Using kid-centric content is now viewed as targeting kids ANYWHERE that it is posted, regardless of actual targeting
- This shift creates a need to refine our social presence, with a firmer focus on aged-up offerings and differentiated content

72. While Dr. Venkataraman concluded that Nickelodeon’s content holds broad appeal across multiple age groups, his analysis disregarded clear evidence that Meta’s child and tween users represented one such group. Again, this argument rests on Dr. Venkataraman’s erroneous claim that Meta’s platforms must be “predominantly” directed to children to be considered child-

¹⁷² Venkataraman Report, ¶ 97.

¹⁷³ Venkataraman Report, ¶ 96.

¹⁷⁴ AG-MDL3047-105950, “Nickelodeon Paid Social Approach 2022,” at slide 2.

¹⁷⁵ AG-MDL3047-105950, “Nickelodeon Paid Social Approach 2022,” at slide 2.

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directed.¹⁷⁶ As discussed in my Opening Report,¹⁷⁷ evidence indicates that Nickelodeon personnel identified Meta's platforms as viable channels for targeting children, indicating both that the platforms were directed to children, and that children were sufficiently present on those platforms to attract Nickelodeon's interest.

D. Dr. Venkataraman did not consider evidence indicating that Meta acted to attract tweens to Facebook and Instagram

73. Dr. Venkataraman claimed that Meta's platforms are not child-directed without addressing the company's stated intentions to attract young users. As internal Meta documents demonstrate, Meta perceived great value in attracting children to its platforms,¹⁷⁸ and recognized that users were more likely to remain on its platforms if they joined when they were children rather than teens or adults.¹⁷⁹

74. For example, Dr. Venkataraman's discussion of Messenger Kids and Instagram Youth ignored Meta's internal documents indicating that these initiatives were designed to attract young users to Meta's family of applications, frequently driving them to Facebook and Instagram before they were 13-years-old, and before they were captured by competing social media platforms¹⁸⁰ Meta documents explicitly noted that the "point-of-market entry for smartphone and app adopting in our landscape is [under] 13,"¹⁸¹ and, in 2016, celebrated making "huge inroads into [the tween] space."¹⁸² Further, Meta's internal documents indicate that it analyzed the

¹⁷⁶ See Opening Report, ¶ 501.

¹⁷⁷ See Opening Report, ¶¶ 501-506, 563-568.

¹⁷⁸ See, e.g., Opening Report, ¶ 441 ("We...aren't as strong as we once were' with tweens who 'spend as much as three times more time on TikTok and YouTube' than on Instagram."). See also META3047MDL-003-00161086, "Instagram 2020 H2/ 2021 H1," 2020, at 086.

¹⁷⁹ See META3047MDL-047-00544632, "M&A and Market Landscape Review: Long Term Retention and its Implications," December 2018, at slide 4 and 5 (Chen Deposition Exhibit #13).

¹⁸⁰ Opening Report, Section XVI.

¹⁸¹ META3047MDL-003-00134443, "US Teens & Growth," October 6, 2016, at 465.

¹⁸² META3047MDL-047-00730463, "Teen Outreach XFN H1 2017 Goals," at 464.

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interests, needs, activity, and behavior of tween and teen users, assessing how it could best appeal to that subset of the general population.¹⁸³ Those efforts to understand tweens, and to compete with apps popular with tweens, led the company to identify certain product features as particularly appealing to children, including face filters, stickers, and short-form videos that the company then incorporated into Instagram and Facebook.¹⁸⁴

75. The company's deliberate efforts to study the interests, needs, activity, and behavior of children, and to replicate features from competing apps that it identified as successfully capturing younger users, illustrate Meta's efforts to attract young teens and tweens (whom it recognized had overlapping interests) to sustain its platforms over time. Moreover, Dr. Venkataraman's opinion that Meta does not appeal to children ignores evidence that Meta recognized that tween users were more likely to remain on the platform than users who joined several years later, and that such users would in turn generate greater long-term value for the company.¹⁸⁵ Dr. Venkataraman's failure to engage with Meta's affirmative efforts to attract children to its platforms, and his systematic failure to consider Meta's own documents that contradict his opinions, demonstrate why his methodology is unhelpful in assessing whether Instagram or Facebook, or portions thereof, are directed to children.

VII. CONCLUSION

76. The Rebuttal Reports submitted by the Defendants in this case do not alter the opinions I expressed in my Opening Report, and their analysis and conclusions are rendered invalid because

¹⁸³ See, e.g., META3047MDL-207-00034678, "Digital Me: Exploring Tweens Social Media Habits," October 2017; META3047MDL-003-00134648, "2017 Teens Strategic Focus," October 27, 2016.

¹⁸⁴ See, e.g., Opening Report, ¶¶ 473-475, 477-486, 543-549.

¹⁸⁵ See, e.g., META3047MDL-047-00995641, "Long Term Retention: The Young Ones are the Best Ones and Other Learnings," 2018; META3047MDL-003-00084997, "Rob's Youth Update" at 998; META3047MDL-047-00544632, "M&A and Market Landscape Review: Long Term Retention and its Implications," December 2018, at slide 4 and 5 (Chen Deposition Exhibit #13).

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they fail to engage with critical evidence, adopt improper methodologies, and demonstrate a lack of engagement with specific features of social media platforms that are critical to evaluating the issues relevant to this case. Moreover, many of the analyses these Reports present are so broad and untethered to facts and evidence that they are rendered wholly unreliable, and other analyses rely on inappropriate methods that focus on a combination of irrelevant data sources, misapplied literature, and theoretical frameworks that are not designed to apply to habit-forming products like social media platforms.

The undersigned hereby certifies their understanding that they owe a primary and overriding duty of candor and professional integrity to help the Court on matters within their expertise and in all submissions to, or testimony before, the Court. The undersigned further certifies that their report and opinions are not being presented for any improper purpose, such as to harass, cause unnecessary delay, or needlessly increase the cost of litigation.



Adam L. Alter, Ph.D.

November 21, 2025

Date

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APPENDIX A: MATERIALS CONSIDERED

Production Documents

- AG-MDL3047-105164
- AG-MDL3047-105579
- AG-MDL3047-105950
- META3047MDL-003-00016725
- META3047MDL-003-00084997
- META3047MDL-003-00124140
- META3047MDL-003-00134443
- META3047MDL-003-00134648
- META3047MDL-003-00135848
- META3047MDL-003-00161086
- META3047MDL-003-00163297
- META3047MDL-003-00166569
- META3047MDL-004-00003641
- META3047MDL-014-00133662
- META3047MDL-019-00004797
- META3047MDL-019-00032957
- META3047MDL-019-00056633
- META3047MDL-019-00057877
- META3047MDL-020-00005380
- META3047MDL-020-00230760
- META3047MDL-020-00263116
- META3047MDL-020-00563113
- META3047MDL-022-00059669
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- META3047MDL-113-00003044
- META3047MDL-136-00013164
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Legal Filings, Depositions, and Correspondences

- Deposition of Allison Lee, February 6, 2025
- Deposition of Arturo Béjar, April 7, 2025
- Deposition of Jennifer Guadagno, PhD, November 14, 2024
- Deposition of Jennifer Guadagno, PhD, November 14, 2024, Exhibit 37
- Deposition of Kang-Xing Jin, November 8, 2024
- Deposition of Kang-Xing Jin, November 8, 2024, Exhibit 35
- Deposition of Wendy Gross, PhD, January 28, 2025, Exhibit 18
- Deposition of Wendy Gross, PhD, January 28, 2025, Exhibit 26
- Expert Rebuttal Report of Dr. Bruce Isaacson, October 17, 2025
- Expert Rebuttal Report of Kevin Lane Keller, Ph.D., October 17, 2025
- Trial Rebuttal Report of Sriraman Venkataraman, Ph.D., October 17, 2025
- Trial Report of Adam L. Alter, Ph.D., August 1, 2025

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