

Exhibit G

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

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

THIS DOCUMENT RELATES TO:

ALL ACTIONS

MDL No. 3047

Case No. 4:22-03047-YGR

Judge: Hon. Yvonne Gonzalez Rogers

Magistrate Judge: Hon. Peter H. Kang

**REBUTTAL EXPERT REPORT OF DR.
NASIR MEMON**

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taken over long periods, ideally decades, which are largely unavailable. (Banerjee et al., 2015). In another report, *Kids on the Phone! Towards Automatic Detection of Children on Mobile Devices*, I evaluated behavioral differences in children's and adults' touch characteristics and sensor readings to distinguish their usage of mobile devices. (Nguyen et al., 2018). I am the most cited researcher on Google Scholar in the area of media forensics, and most of my research in media forensics has been related to image forensics. I was also elected as the president of the IEEE Biometrics Council for the period of 2022 to 2024.

6. I also have industry experience related to image forensics and image-based age estimation, and I hold a dozen patents in image compression and security. I founded Digital Assembly (in operation between 2011-2015), which developed an image forensics product, Adroit Photo Forensics. Customers of Adroit included law enforcement and intelligence agencies from around the world, including the Federal Bureau of Investigation, Central Intelligence Agency, Department of Homeland Security, and Department of Defense Cyber Crime Lab. Adroit also utilized image-based age estimation algorithms.

7. My curriculum vitae is attached as **Exhibit A** to this report. My hourly rate is \$650. I have no financial interest in the outcome of this litigation. My compensation does not depend on the outcome of this litigation or the opinions that I provide. I have no prior relationship with any Defendant in this litigation or, to my knowledge, any other party.

II. ASSIGNMENT

8. As relevant for purposes of this opinion, Plaintiffs allege that between January 1, 2012 and April 1, 2024 (the "relevant period"), Meta failed to prevent individuals under 13 from creating accounts on, and using, Facebook and Instagram.⁴

⁴ See Pls.' Master Compl. (Local Gov't & Sch. Dist.) ¶130, *In re Soc. Media Adolescent Addiction/Pers. Inj. Prods. Liab. Litig.*, No. 4:22-MD-03047-YGR (N.D. Cal. Dec. 18, 2023), ECF No. 504 [hereinafter "School

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Plaintiffs claim that Meta chose not to use feasible alternative age verification methods “even though they are technologically feasible, used by many companies across the Internet, and could be employed at relatively low cost.”⁵ Plaintiffs further allege that Meta both failed to exclude individuals under 13 from using its platforms and declined to remove the accounts of individuals under 13, choosing to ignore reports of individuals under 13 on these platforms.⁶ Plaintiffs allege that Meta had actual knowledge of individuals under the age of 13 on its platforms and that Meta targeted individuals under 13 to join its platforms.⁷ Plaintiffs conclude that Meta routinely violated COPPA by collecting personal information from individuals under 13 on Facebook and Instagram without obtaining verifiable parental consent.⁸

9. In connection with these claims, I have been asked to review expert reports submitted on behalf of Plaintiffs on May 16, 2025, and respond to the opinions regarding Meta’s age verification systems.⁹

10. A list of all materials considered in reaching my opinions is attached as **Exhibit B** to this report.

District Complaint”]; Pls.’ Second Am. Master Compl. (Pers. Inj.) ¶¶59, 332, *In re Soc. Media Adolescent Addiction/Pers. Inj. Prods. Liab. Litig.*, No. 4:22-MD-03047-YGR (N.D. Cal. Dec. 15, 2023), ECF No. 494 [hereinafter “Personal Injury Complaint”]; Pls.’ Second Am. Compl. for Injunctive Relief & Other Relief ¶¶699-702, 819, *In re Soc. Media Adolescent Addiction/Pers. Inj. Prods. Liab. Litig.*, No.4:23-cv-05448-YGR (June 9, 2025), ECF No. 207 [hereinafter “Attorney Generals’ Complaint”].

⁵ See Personal Injury Complaint ¶328; see also School District Complaint ¶¶132, 351; Attorney Generals’ Complaint ¶725.

⁶ See Personal Injury Complaint ¶¶327, 338; see also School District Complaint ¶¶131, 133, 353; Attorney Generals’ Complaint ¶675.

⁷ Attorney Generals’ Complaint ¶¶634, 644, 812, 824.

⁸ Attorney Generals’ Complaint ¶¶632, 812.

⁹ The term “age verification” can refer, narrowly, to the process used to verify a person’s age as reflected in their account information, while the term “age assurance” more broadly encompasses the many purposes and methods for determining a person’s age. See, e.g., (Shaffique & van der Hof, 2024). Throughout this Report, the term “age verification” is used as an umbrella term to refer to the broader set of systems that make up age assurance.

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III. METHODOLOGY AND SUMMARY OF OPINIONS

11. In reaching my conclusions, I reviewed academic literature relevant to age verification issues between 2012 and 2024, as well as extensive documentation and deposition testimony describing and evidencing age verification measures on Facebook and Instagram throughout the relevant period. In conducting my analysis, I also reviewed and considered third-party frameworks that have been proposed to evaluate age verification measures.¹⁰

12. I analyzed Plaintiffs' experts' reports and developed my opinions in this matter by considering several key criteria related to the development and implementation of age verification processes: (i) the limitations of age verification technologies; (ii) the imperative to safeguard user privacy; (iii) the complexities of ensuring regulatory compliance across jurisdictions; (iv) the importance of inclusivity; (v) the scalability and operational feasibility required to support a large global user base; and (vi) prevailing age-gating practices across the social media industry. These considerations have informed my opinion.

13. In assessing whether Meta's age verification practices met or exceeded industry standards in this report, I also considered applicable regulatory guidance. Specifically, I am aware that the Children's Online Privacy Protection Act ("COPPA") "does not require operators of general audience sites to investigate the ages of their site's visitors." (64 Fed Reg. 59888, 59892 (Nov. 3, 1999)). I also understand that the Federal Trade Commission ("FTC"), which enforces COPPA, has informed industry through guidance that "an operator of a general audience site or service that chooses to screen its

¹⁰ See, e.g., IEEE (2024). *IEEE Standard for online age verification* (IEEE Standard No. 2089.1). <https://standards.ieee.org/ieee/2089.1/10700/> (proposing a multi-factor framework for age assurance).

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users for age in a neutral fashion may rely on the age information its users enter, even if that age information is not accurate.”¹¹

14. Based on information provided by Meta, my own independent analysis and observations, and my expertise in the subject matter, I conclude that Meta’s implementation of measures designed to prevent the use of Facebook and Instagram by children under 13 has been reasonable and has met or exceeded prevailing industry practice throughout the relevant period (2012 through 2024).¹² My opinions are based on the information available to me at the time I drafted this report. In the event that I receive new or conflicting information, I reserve the right to revise or supplement these opinions.

15. **Opinion 1:** Like in the broader field of security, where a strong cybersecurity program depends on a layered approach to safeguard information and systems, no single age verification approach online is sufficient, standing alone. As a result, age verification online necessitates a layered approach. Meta uses such a layered approach, relying on a combination of user reporting, date of birth changes, cross-platform checks, content reviews, checkpointing, and appeals. **Opinion 2:** While Plaintiffs’ experts claim that Meta’s age verification practices are ineffective due to the presence of underage users on Meta’s platforms, Meta’s practices met or exceeded industry practices during the relevant period. **Opinion 3:** Further, Plaintiffs’ experts’ specific criticisms of Meta’s implementation of its neutral age gate and user reporting system are misguided and fail to account for the overall system design, which relies upon layered defenses to prevent, identify, and remove underage users while balancing privacy needs, regulatory limitations, and the technology available for age verification.

¹¹ See <https://www.ftc.gov/business-guidance/resources/complying-coppa-frequently-asked-questions>.

¹² The opinions offered in this report relate to Plaintiffs’ School District Complaint, Personal Injury Complaint, and Attorney Generals’ Complaint.

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platforms, including Meta, have advocated for verification off-platform (e.g., by App Stores), these proposals have, to date, not been widely adopted.

VI. META’S PRACTICES IN CONTEXT

A. Industry Practices relating to Age Verification on Online Platforms

51. In order to avoid providing motivated individuals with a roadmap for circumvention, online platforms generally do not make the details of their age verification systems public. As a result, public information—particularly relating to systems to identify and remove underage users who have accessed the service—is relatively rare, and where such information exists, it is often high level. Accordingly, even if limited in scope, surveys of the age verification practices of multiple online services, like those described below, provide helpful context for evaluation.

52. In 2024, the FTC published a report, *A Look Behind the Screens: Examining the Data Practices of Social Media and Video Streaming Services* (“FTC Report”), based on an industry-wide inquiry issued to a group of 9 companies the FTC defined as “social media and video streaming services” (“SMVSSs”). The report presented its findings collectively, without assigning the conduct described to any specific SMVSSs evaluated in the report. Among other topics, the report describes how these platforms approached age-related privacy, access, and data use issues. While there was variation across services, the report provided a snapshot of prevailing industry practices, and the factors influencing them, between 2020 and 2024.

53. With respect to age assurance, most SMVSSs reported having systems in place to prevent or block children from creating accounts on their platforms. (FTC Report at 74). For SMVSSs that used age gating, if an individual entered an age or date of birth indicating they were younger than 13, the SMVSS blocked the individual from creating an account. Some SMVSSs took additional measures to prevent children from circumventing

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their age gate, such as placing a cookie on the browser to restrict repeat registration attempts. If a child managed to create an account, most SMVSSs provided other users with a means to report the underage user. A few SMVSSs employed additional methods to identify underage users, such as having content reviewers flag content that appeared to come from an underage user or tracking when a user changed their date of birth to under 13 years old. (*Id.*).

54. Regardless of how SMVSSs identified a child user, a common policy was to disable or lock these accounts when they became aware of a potential underage user. Some SMVSSs offered the user an opportunity to prove they were not a child. Most, but not all, SMVSSs ultimately deleted the account, while a few SMVSSs also reported banning the user or directing them to the SMVSS's child-directed platform. (*Id.*).

55. The FTC report also discusses the age-related information that the SMVSSs possessed about their users, more broadly. As noted above, most SMVSSs collected some age-related data, such as date of birth, either through age gating, as part of the registration process, or as an optional component of account creation. (*Id.* at 73). While the report noted that several SMVSSs inferred users' age ranges using algorithms, data analytics, or AI, or through third-party analyses, only a few reported inferring a user's age range below 13 years old.³⁸ The remaining SMVSSs inferred age ranges above 13 years old. While certain SMVSSs stated that their algorithms, data analytics, or AI could detect if a user was between 13 and 14 years of age, for users under 13, "they had to rely on other means (*e.g.*, self-reporting) to determine that a user was a child." (*Id.*).

56. A 2020 study conducted at University College Dublin, which examined age verification practices across 10 major online platforms in 2019, provides another data

³⁸ While the Report does not identify which participant companies reported inferring ages under 13, it is notable that a few of the services included in the study allow users under 13 (*e.g.*, TikTok, YouTube).

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61. A layered strategy allows platforms to apply low-friction, low-cost methods to most users while escalating to more stringent checks only when needed, based on context or risk. This graduated model improves usability and resource efficiency while maintaining strong protections for vulnerable populations. It also supports long-term adaptability: as new threats, technologies, or compliance requirements emerge, new layers can be added or existing ones refined without redesigning the entire system. In this way, defense in depth is not only a principle of robust protection, but also one of operational flexibility and regulatory resilience.

62. Plaintiffs' experts claim that Meta's age verification practices are ineffective because of the presence of underage users on Meta's platforms.³⁹ This criticism is misguided: in the cybersecurity field, it is accepted that no system is foolproof. No system, however well-designed, operates without exceptions, and the existence of exceptions does not mean that the system is inherently inadequate or poorly conceived. (Schneier, 2000 ("Security does not have to be perfect, but the risks have to be manageable.")). One of Plaintiffs' experts, Dr. John Chandler, asserts that Meta's approach to excluding underage individuals, including looking at the individual's self-reported age, was "imperfect,"⁴⁰ which applies an impossible standard, rather than evaluating whether the system is designed with all component considerations in mind, is fit for purpose, and comports with industry practices.

63. Meta's multi-layered age verification processes, designed to enforce its platforms' age restrictions, are reasonable and met or exceeded prevailing industry practices throughout the relevant period. The first layer is age gating and age collection at

³⁹ See generally Estes; Gray; Expert Report of Minette Drumwright, Ph.D., Case No. 4:22-03047-YGR, Multi-District Litigation No. 3047, *In re: Social Media Adolescent Addiction* (N.D. Cal., May 16, 2025) [hereinafter "Drumwright"]; Expert Report of Dr. John Chandler, Ph.D., Case No. 4:22-03047-YGR, Multi-District Litigation No. 3047, *In re: Social Media Adolescent Addiction* (N.D. Cal., May 16, 2025) [hereinafter "Chandler"].

⁴⁰ Chandler ¶167.

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registration. The second layer is identifying potential underage users through a multi-channel detection framework including the following: (1) online reporting; (2) internal reviews; (3) user self-reporting; and (4) cross-platform checks. The third layer is the review and evaluation of potential underage users' accounts using automations and human reviewers. The fourth layer is implementing underage checkpoints and appeals to suspend accounts suspected of belonging to users under 13, notify such users, and allow users to appeal this decision by providing documentation that they are 13 or older.

C. Meta's Policies

64. Meta's Terms of Service and Instagram's Terms of Use prohibit individuals under the age of 13 from using either Facebook, or Instagram. (META3047MDL-091-00080707; META3047MDL-208-00003308). This age restriction has been in place on both platforms throughout the relevant period. (META3047MDL-037-00118789; META3047MDL-012-00000096; META3047MDL-190-00000001; META3047MDL-091-00080707; META3047MDL-208-00003308; META3047MDL-208-00003310; META3047MDL-146-00072800).⁴¹

D. Account Registration & Age Collection

65. Meta's age gating and age collection at registration aims to prevent children under 13 from creating accounts on Facebook or Instagram. Consistent with its "real name" policy, which has always required Facebook users to create an account reflecting their true identity, Facebook has enforced its age restriction using an age gate

⁴¹ Specifically, the 2013 Facebook Statement of Rights and Responsibilities requires users to make the following commitment: "You will not use Facebook if you are under 13." (META3047MDL-091-00080707). The 2013 Instagram Terms of Service likewise states that users must be 13 years or older to use the site. (META3047MDL-208-00003308). More recently, the Instagram Terms of Use require that users make the commitment that they must be at least 13 years old to be part of the Instagram community. (META3047MDL-146-00072800). Instagram's Help Center post for "Confirming your age on Instagram" also outlines that Meta "require[s] people to be at least 13 years old to sign up for Instagram." (META3047MDL-040-00000350). See also <https://www.facebook.com/terms/>.

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for Instagram or Facebook.⁴⁶ Specifically, Gray states that Meta’s account registration flow “lacks meaningful friction when verifying a prospective user’s age.”⁴⁷ This criticism fails to consider the many challenges, discussed in detail above, inherent to requiring verification via methods like government ID or biometrics at the point of registration. As discussed above, there is no one-size-fits-all answer to the multidimensional problem posed by online age verification. Effective solutions must navigate the trade-offs between privacy, regulatory compliance, usability, accuracy, and scalability. Balancing the likely efficacy of identification-based and biometric verification against the drawbacks and risks identified above, Meta’s collection of date of birth information as the first step of a layered approach is reasonable in light of the need for low-friction onboarding, the importance of accessibility, and the avoidance of early privacy intrusions, especially across a global, diverse user base, when considered as part of its broader approach to age verification.

E. Identification of Potential U13 Users

70. Building on the foundation of age gating, the next layer of Meta’s age verification process focuses on identifying users who may be under 13 on its services. Meta employs a well-reasoned, multi-channel framework to identify and remove users who may be under 13 who are already on the platform, and Meta is constantly evolving its systems and technology.⁴⁸ The vectors Meta uses to monitor existing accounts for potential underage users include online reporting, internal reviews, user self-reporting, and cross-platform checks. (META3047MDL-012-00000001).

⁴⁶ Estes ¶190.

⁴⁷ Gray ¶84.

⁴⁸ Rothschild Dep. Tr. at 140:15-141:15 (Jan. 21, 2025); *see also* Hartnett Dep. Tr. at 130:15-25 (June 16, 2025).

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1. Online Reporting

71. Both Facebook and Instagram offer webforms (and related publicly accessible instructions) that allow anyone using a web browser, regardless of whether they use any of Meta's services, to report a potentially underage account to Meta. (META3047MDL-040-00000322; META3047MDL-040-00000323). Plaintiffs' experts take issue with the fact that, during parts of the relevant period, user reporting was not available inside the four corners of the Facebook or Instagram app.⁴⁹ This criticism overlooks that the publicly accessible webforms were nonetheless available, providing the broadest possible set of individuals—anyone with access to the internet—the ability to report potential underage users. This broad access has allowed individuals like parents, guardians, and teachers to make these reports since at least 2013 (for Instagram) or 2012 (for Facebook).⁵⁰ (META3047MDL-012-00000096; META3047MDL-012-00000001; META3047MDL-040-00000327; META3047MDL-208-00003306; META3047MDL-208-00003307). On both Facebook and Instagram, users can also access these reporting forms via an in-app browser, directly from the mobile applications. (META3047MDL-053-00012657).⁵¹

72. Notably, online reporting forms of this kind are vulnerable to abuse and harassment, and a large number of underage reports are false; that is, the user is found to be 13 or older upon checkpoint or appeal.⁵² For example, individuals can report others' accounts as underage or as spam accounts as methods of online harassment or cyberbullying.⁵³ Further, because platforms like Meta want to encourage reporting of problematic or violative content or accounts, these reporting mechanisms often do not

⁴⁹ Gray ¶90; Drumwright ¶340.

⁵⁰ Hartnett Dep. Tr. at 119:19-120:4 (June 16, 2025).

⁵¹ Hartnett Dep. Tr. at 136:1-137:5 (June 16, 2025).

⁵² Hartnett Dep. Tr. at 210:2-19 (June 16, 2025).

⁵³ Hartnett Dep. Tr. at 245:24-246:7 (June 16, 2025).

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require verification and can easily be falsified. The underage review flow is particularly vulnerable to abuse because bad actors understand that this flow may result in the reported account being taken down entirely (where reporting specific pieces of content may not). Internal reports at Meta indicate that there are a significant number of underage reports filed that are obvious harassment, such as over 1 million reports of the Israeli Defense Force, as well as inauthentic reports of adult public figures such as Emmanuel Macron and Kim Kardashian, who were reported thousands of times. (META3047MDL-208-00003249).⁵⁴ Accordingly, Meta has implemented evaluation and review processes, described in further detail below, to conduct diligence of accounts reported by third parties to be underage. Meta's choice not to offer "one-touch" in-app reporting is reasonable in light of the history of, and potential for, abuse. This is supported by the fact that a small-scale test of such in-app reporting on Instagram resulted in double the number of false underage reports submitted.⁵⁵

73. Plaintiffs' experts also express concern about the friction involved in the user reporting form, noting that the report involves "7 screens" to complete.⁵⁶ This criticism is also misguided. These screens are designed to guide the reporter through the process, and request information to assist Meta in determining the identity of the user and whether the user may be underage. (META3047MDL-037-00088546; META3047MDL- 037-00088547). This flow is particularly reasonable in light of the impact of the action being requested (*i.e.*, where Meta may checkpoint the user's account, requiring identification to regain access).⁵⁷ Rate-limiting applied to these screens further helps to protect the integrity

⁵⁴ See also Hartnett Dep. Tr. at 210:7-19; 246:11-18 (June 16, 2025).

⁵⁵ Hartnett Dep. Tr. at 145:9-14 (June 16, 2025).

⁵⁶ Gray ¶90; Drumwright ¶340.

⁵⁷ Hartnett Dep. Tr. at 336:1-337:1 (June 17, 2025).

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of the reporting form against malicious actors who might misuse the reporting form.⁵⁸ Gray also criticizes the specific fields in the form, alleging that the form requests “username, full name, and birthdate” of the individual being reported.⁵⁹ This is not only inaccurate (the form does not require a full birthdate), but fails to consider that requesting this information likewise helps to prevent abuse of the form by substantiating the reporter’s knowledge of the user. (META3047MDL-040-00000321; META3047MDL-040-00000327).⁶⁰

2. Internal Reviews

74. Meta trains thousands of human reviewers to review accounts that are reported by other users for potential violations of the Facebook or Instagram Terms of Service, as well as content guidelines unrelated to age. When reviewing accounts in response to any type of report, reviewers are instructed to proactively monitor for details suggesting that the user may be a child under 13 (for example, photos posted to the account reflecting age or text in the account bio stating an age under 13). (META3047MDL-012-00000001; META3047MDL-040-00000365). In the event that details suggesting the user is under the age of 13 are present, the reviewer will escalate the account for underage review. Meta may also identify potential underage users through other review processes including, for example, where Meta requires users to provide identification to access certain features, *e.g.*, Meta Verified. (META3047MDL-012- 00000001; META3047MDL-040-00000365).

⁵⁸ Hartnett Dep. Tr. at 245:18-246:7 (June 16, 2025) (Confirming that Meta’s underage reporting form has been the subject of scripting attacks and inauthentic reports of child users, by malicious actors).

⁵⁹ Gray ¶89.

⁶⁰ See also Hartnett Dep. Tr. at 120:2-19; 245:18- 246:16 (June 16, 2025).

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3. User Self-Reporting

75. On Facebook and Instagram, Meta may also learn that a user is underage directly from the user, if the user attempts to change the date of birth on their account to a date that would make them under 13.⁶¹ (META3047MDL-053-00012657).

4. Cross-Platform Checks

76. As of December 2021, when a user's Facebook account is placed in an age checkpoint (described *infra* at 83), Meta will simultaneously suspend any Instagram accounts that have been added to the same Accounts Center, and vice versa. (META3047MDL-012-00000001; META3047MDL-146-00072824).

F. Review and Evaluation of Potential U13 Accounts

77. Another element of Meta's layered age verification process is review and evaluation of accounts that are flagged as potentially underage through the methods identified above. These accounts, identified through the processes and channels outlined above, are evaluated for the likelihood that they represent a user under 13 by automated processes, human review, or in some cases, both.

1. Automated Evaluation Processes

78. In some cases, Instagram and Facebook users are automatically placed in an age checkpoint without additional review from a manual reviewer. (META3047MDL-053-00012709; META3047MDL-146-00072824). This most commonly occurs when users self-report that they are under 13 by changing the date of birth on their account. (META3047MDL-146-00072824). Because these users themselves have indicated they are under 13, Meta places them in an age checkpoint and requires

⁶¹ Prior to February 2021, existing Instagram users were prevented from changing their date of birth to a date under 13 years old.

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additional proof of age to stay on the platforms. (META3047MDL-053-00012709; META3047MDL-040-00000356).

79. Where Meta has indicia that the user is over the age of 13, Meta may automatically permit the user who has been flagged as potentially underage to continue using Facebook or Instagram. (META3047MDL-053-00012709; META3047MDL-040-00000365). The use of these automations to triage the large volume of accounts identified through the various channels discussed above—particularly in light of the susceptibility of user reporting to abuse—is what makes Meta’s approach scalable, allowing Meta to narrow its focus and more effectively deploy human resources to review those most likely to be actual underage users.

2. Manual Evaluation Processes

80. Flagged accounts that cannot be resolved through the automated processes described above are directed to human reviewers for further evaluation. Meta employs tens of thousands of human reviewers whose duties include reviewing these flagged Facebook and Instagram accounts to manually look for signs that an account has violated the applicable terms of service or content guidelines, including accounts suspected as belonging to users under 13. (META3047MDL-053-00012709; META3047MDL-040-00000365). All potentially underage accounts identified for manual review are reviewed using Meta’s content review platform, which is specifically designed for large-scale manual review efforts. The content review platform standardizes the underage user review process and allows Meta to track and properly document decisions made. To ensure that the human review process is consistent and that reviewers evaluate each profile using the proper criteria, Meta’s content review platform provides reviewers with a “decision tree” or standardized flow that they must follow for each flagged account. Reviewers are also able to include notes and provide additional context for why they made a particular decision.

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(META3047MDL-012-00000001; META3047MDL-040-00000365; META3047MDL-040-00000356).

81. On Instagram, reviewers first evaluate the account's bio for contextual information or self-admission about a user's real age, including a written statement of the user's age, birth date, or grade in school. (META3047MDL-053-00012709; META3047MDL-040-00000365). Reviewers are also trained to look for additional signals that indicate whether the user is or is not underage (*e.g.*, the bio indicates that the account in fact belongs to a parent or guardian). (META3047MDL-040-00000365). Bio information is viewed as more reliable and is therefore evaluated first. An account that contains information that explicitly states or contextually implies that the user is under 13 will be checkpointed, and the user will be required to provide Meta with proof of age. (META3047MDL-053-00012709; META3047MDL-040-00000365). Because Facebook accounts do not have comparable "account bios," on Facebook, reviewers first evaluate the date of birth on the account and then go directly to the second step, as detailed below.

82. Next, on both Facebook and Instagram, the reviewer will evaluate the photos contained in the account. (META3047MDL-040-00000365). Reviewers are trained to look for physical characteristics indicating that the user is underage. (META3047MDL-053-00012709; META3047MDL-040-00000365; META3047MDL-040-00000356). If a human reviewer finds sufficient signals that the user may be under 13, the user will immediately be placed in an age checkpoint. (META3047MDL-040-00000365; META3047MDL-040-00000356). Reviewers who are unsure of whether a user is under 13 based on a review of the account are instructed to default to a finding that the user is underage. (META3047MDL-040-00000365; META3047MDL-040-00000356). Reviewers are instructed to identify whether the account has no written indication of age and whether the photos do not permit an inference that there is an underage account owner.

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(META3047MDL-040-00000356). Meta has taken steps to ensure that accounts flagged as potentially underage are reviewed as quickly as possible after they are reported. While manual review is a labor- and time-intensive process, the function responsible for this process works to make a determination on accounts that are flagged as potentially underage within 48 hours of receiving the report. (META3047MDL-012-00000001).

G. Age Checkpoint & Appeals

83. When, either via automated evaluation or manual review, a user's Facebook or Instagram account is "checkpointed," the user's account is suspended: this means that the user is prevented from accessing the account and that the user's profile is not visible to other users. When an account is placed in an age checkpoint on either platform, the user is notified of the challenge to their age. (META3047MDL-146-00072824). A user whose Facebook account is checkpointed for being underage receives a notification stating, "We suspended your account" and "It looks like you're not old enough to be on Facebook." (META3047MDL-065-00017555). The notification also provides that the user has "30 days left to disagree with this decision" to suspend the user's account and that the account was suspended because "it does not follow [Facebook's] terms of service." (META3047MDL-065-00017555). A user whose Instagram account is checkpointed for being underage receives a notification stating, "You're not old enough to use Instagram." (META3047MDL-065-00017555). Like on Facebook, the notification informs the user that they can appeal the decision.

84. Both Facebook and Instagram offer the checkpointed user the opportunity to appeal and recover access to their account if they can provide adequate documentation that they are at least 13 years old. (META3047MDL-065-00017555).

- On Facebook, a user who wants to appeal the decision to delete their account for being underage must provide documentation that shows a photo or date of

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birth that matches the details on the user's Facebook account. Users may submit several different documents to confirm their age, including photo IDs issued by the government, certain IDs from non-government organizations,⁶² and official certificates or licenses. Users who want to use non-government IDs must submit two different non-government IDs; both must show the same name (which must match the name on the user's profile) and at least one must include the user's date of birth and/or photo. (META3047MDL-040- 00000333).

- On Instagram, users must submit their full name, email address, Instagram username, date of birth, and a photo ID that includes their face and date of birth. (META3047MDL-065-00017555). Instagram encrypts the ID upon submission and stores it securely, deleting it 30 days later. (META3047MDL- 065-00017555). The platform accepts various types of IDs for identity verification, allowing users to present either one form of a specific type of ID,⁶³ or two forms of another type.⁶⁴ (META3047MDL-040-00000354). Meta provides reviewers with a protocol for reviewing appeals for users on Instagram who are checkpointed after changing their own date of birth. This protocol asks whether a legitimate ID was provided, whether the user wrote in using the sign-up email, whether the ID puts the user under the age of 13, whether the date of birth in the

⁶² The non-government IDs that Facebook accepts include student cards, library cards, refugee cards, employment verification, diplomas, or loyalty cards. (META3047MDL-040-00000333).

⁶³ Users may provide one of the following forms of ID to verify their identity: birth certificate, driver's license, passport, marriage certificate, official name change paperwork, personal or vehicle insurance card, non-driver's government ID (example: disability, SNAP, or national ID card), green card, residence permit or immigration papers, tribal identification or status card, voter ID card, family certificate, visa, national age card, immigration registration card, or tax identification card. (META3047MDL-040-00000354).

⁶⁴ Users may provide any two of the following forms of ID to verify their identity: bank statement, transit card, check, credit card, employment verification, library card, mail, magazine subscription stub, medical record, membership ID (example: a pension card, union membership, work ID, professional ID), paycheck stub, permit, school ID card, school record, social security card, utility bill, yearbook photo (actual scan or photograph of the page in your yearbook), company loyalty card, contract, family registry, diploma, religious documents, certificate of registration for accreditation or professional, professional license card, polling card, health insurance, address proof card, or social welfare card. (META3047MDL-040-00000354).

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ID matches the request, and whether there is a match between the photo, name, or text on the ID. (META3047MDL-040-00000356).

85. Users who successfully appeal the suspension recover access to their Facebook or Instagram account. (META3047MDL-012-00000001; META3047MDL-053-00012657; META3047MDL-065-00017555). If they are unable to provide adequate proof of age within the time provided, their accounts are scheduled for deletion. (META3047MDL-065-00017555).

H. Proactive Use of Age Prediction Models

86. Finally, Plaintiffs' experts contend that Meta should have implemented predictive age models to detect and remove users under 13 from Facebook and Instagram.⁶⁵ These criticisms ignore that, as with face-based age prediction models, any model that would be capable of accurately predicting whether a user is over or under 13 would need to be trained on significant data reflecting users under 13 as a source of ground truth.⁶⁶ This places Meta in a paradoxical situation: Plaintiffs' experts claim that Meta should have developed a model to predict and remove users under 13, but regulatory limitations on the collection and use of data relating to users under 13, like COPPA, mean that Meta does not and cannot retain or use data to create and train such a model with any level of accuracy.

87. One of Plaintiffs' experts, Dr. Minette Drumwright, asserts that Meta "fail[s] to meet standards of care regarding designing for safety" by not employing such a model and that Meta is "not consistent with its own and industry standards of care for corporate responsibility."⁶⁷ However, the FTC found that SMVSSs generally did not use algorithms, data analytics, or AI to determine if a user was under 13, instead relying on

⁶⁵ Estes ¶188; Drumwright ¶335.

⁶⁶ Hartnett Dep. Tr. at 341:3-342:21 (June 17, 2025).

⁶⁷ Drumwright ¶344.

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other means, including self-reporting. (FTC Report, 2024). This supports that it was not industry practice to leverage age prediction models for age verification during the relevant period. In the same FTC Report, the FTC underscored how the surveyed companies did not have a full understanding of AI and did not have safeguards in place to provide users with recourse for AI-based decisions, such as account removal, in the event that results were inaccurate, unreliable, or biased. (*Id.* at 60). These issues further explain why the use of such models was not standard industry practice during the relevant period.

VII. ANALYSIS

88. Age verification is a long-standing challenge on the internet. Traditional methods—like self-declared age, credit card checks, and document-based verification—have proven inadequate, standing alone, because they can be easily bypassed, fail to reflect the realities of youth digital behavior, and exclude legitimate users without formal credentials. While methods like third-party verification, facial age estimation and device or IP inference began to emerge during the relevant period, they remain limited in adoption, accuracy, fairness, and reliability when applied in real-world conditions.

89. Plaintiffs’ experts’ critique that self-reporting of age at registration is “imperfect”⁶⁸ overlooks the profound technical, operational, and privacy challenges associated with alternative approaches. Given these constraints, a layered approach to age verification—beginning with self-declared age during registration, and continuing through the user experience through proactive monitoring, user reporting channels, cross-platform reconciliation, and escalation to stronger verification measures when concerns arise—is not only reasonable, but preferable. It strikes a necessary balance between safeguarding

⁶⁸ See Chandler ¶167.

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children, respecting user privacy, maintaining platform accessibility, and ensuring operational scalability across a global user base.

90. Within this technological and societal landscape, Meta uses exactly that kind of layered, escalated, and user-transparent enforcement approach—seeking to balance privacy, safety, and fairness to users. While Plaintiffs’ experts criticize certain aspects of Meta’s layered approach to age verification, these criticisms overlook that age verification is a multi-faceted challenge, and effective solutions must balance considerations like privacy, regulatory compliance, usability, accuracy, and scalability.

91. The system begins with lower-friction methods appropriate for a low-stakes context—such as behavioral signals or user-declared information—to prohibit the creation of potential underage accounts without requiring sensitive data from most users. In cases where there are indicia that a user is underage, Meta checkpoints the account and escalates to the next layer of age verification through document-based review. This method of age verification has typically been used in isolation for higher-stakes contexts, such as gambling or adult websites. Importantly, throughout Meta’s age verification process, users are offered choices where possible and are informed about what data is being collected and how it will be used. This structure allows Meta to apply stronger measures only when warranted, aiming to limit unnecessary data collection while addressing safety concerns. Overall, the approach reflects an effort to navigate the trade-offs involved in age verification in a way that is consistent with evolving expectations around transparency and proportionality.

92. Importantly, such an approach was fully consistent with prevailing industry norms during the relevant period (2012-2024), a period of significant technological and societal change. Plaintiffs’ experts contend that Meta could have implemented other means of age verification, such as credit card and payment verification,

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document-based verification, third-party verification, face-based age prediction, or device or IP inference. However, as discussed above and as acknowledged by Plaintiffs' expert Tim Estes,⁶⁹ these methods each fall short in the context of Meta's diverse global user base. Further, these methods were not standard industry practice for age verification during the relevant period.

93. As confirmed by independent studies (*e.g.*, Pasquale et al., 2020) and regulatory surveys (*e.g.*, FTC SMVSS Report, 2024), major social media platforms overwhelmingly relied on self-declared age during registration and reserved higher-friction verification only for cases of suspected noncompliance. Some social media companies even only contractually prohibited children from creating accounts, such that there was no actual mechanism to identify whether a child was using that website or mechanism to stop a child from creating an account.

94. In contrast, Meta's adoption of layered safeguards and rigorous manual review protocols places it ahead of most peers during the timeframe in question. Meta's implementation of multiple channels used to proactively monitor for and identify potential underage accounts, as well as its scalable automated and manual review processes, go beyond many peer platforms' practices by conducting age verification throughout a user's interaction with the service. Meta's strategy also appropriately reflects technological evolution and social expectations by adopting a risk-based model that recognizes legitimate privacy concerns by minimizing data collection at the earliest point of interaction and ensuring deletion of sensitive data after use.

⁶⁹ Estes ¶¶227, 233, 237, 241, 246.

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VIII. CONCLUSION

95. In sum, Plaintiffs' experts' opinions are flawed and do not alter my conclusion that Meta's layered, scalable, privacy-respecting approach to age verification is not only reasonable in the context of the technology and regulatory landscape, but also equals or goes beyond that of other global platforms during the relevant period. These conclusions are informed by my technical expertise in biometrics, cybersecurity, and platform security, my current research and publications relevant to age verification issues, and by a comprehensive evaluation of Meta's processes against key industry benchmarks.

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Certification:

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.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "N. Memon", with a long horizontal flourish extending to the right.

Dr. Nasir Memon, PhD.
July 9, 2025