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EXHIBIT I

EXPERT REPORT OF DAMON L. McCOY, Ph.D.

State of New Mexico v. Meta Platforms, Inc., et al.

State of New Mexico, First Judicial District Court, Santa Fe County

No. D-101-CV-2023-02838

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recommended)¹²⁷—and even then only after Meta had determined that it would not “lose users” as the result of the change.¹²⁸ According to Meta, only approximately 3.48% of age 13-17 users in the U.S. used the Hide Likes & Views settings to hide likes or views on their posts on Instagram between January 8, 2023, and March 23, 2025.¹²⁹ The internal Meta research provided evidence that the Pure Daisy design change to no longer make likes visible by default reduced negative social comparisons especially among teen girls. Meta’s choice to deploy a non-default opt-in version of Daisy is one among many examples of short-term user engagement being prioritized over improved safety design.

Meta’s handling of “likes” reveals a familiar pattern: despite years of internal research confirming the harms of visible like counts, especially for teens, and the development of viable design improvements like Project Daisy, the company repeatedly deprioritized user well-being in favor of preserving engagement and ad revenue. The decision to offer only a diluted, opt-in version of Daisy, against the recommendations of its own researchers, underscores Meta’s reluctance to implement meaningful changes when they might impact growth, even when it has knowledge of safer designs that reduce harms to its users.

Infinite Scroll & AutoPlay

Infinite scroll (sometimes also known as “endless scroll”) is a feature widely used on Meta’s platforms and, like push notifications and auto-play (discussed below), it is an example of an Attention Capture Damaging Pattern (“ACDP”) utilized on Meta’s platforms. ACDPs have

¹²⁷ See generally, Newton Dep. Tr. 249-257 (describing Project Daisy, which had multiple internal versions, as an Instagram test designed to make like counts private on posts, with the goal of reducing negative social comparison, especially among teens, by shifting focus away from popularity metrics and toward content and relationships, noting that external experts, including those consulted during testing, consistently recommended that Daisy be enabled by default for teens, because youth were more emotionally impacted by likes, and thus removing like counts could help mitigate those effects.)

¹²⁸ See, e.g., Horwitz, J., *Facebook, Instagram to Allow Users to Hide ‘Likes’*, The Wall Street Journal (May 26, 2021), <https://www.wsj.com/tech/facebook-instagram-to-allow-users-to-hide-likes-11622034000>; see also Horwitz, J., *Facebook Knows Instagram Is Toxic for Teen Girls, Company Documents Show*, The Wall Street Journal (Sept. 14, 2021), <https://www.wsj.com/tech/personal-tech/facebook-knows-instagram-is-toxic-for-teen-girls-company-documents-show-11631620739>; METANMAG-021-00558493 (Mosseri: “given we’re looking at single-digit percentages adopting Daisy I’m comfortable with our current plan for 5/26. Have we brought along the Facebook app team as well? I assume the risk [of opting into Daisy] there is lower, but I don’t have the latest.”); *id.* (“Yesterday, we rolled our Daisy Controls to the world... we are seeing some recovery in overall likes and feed revenue likely driven by the 65% of Daisy V1 [i.e., Pure Daisy] users that are now opting to ‘see likes.’”).

¹²⁹ See Defendants’ Sixth Supplemental Objections and Responses to Plaintiff’s First Set of Interrogatories to Defendants (Interrogatory 12), at 13.

been defined as designs adopted to manipulate users into spending attention in ways that often lead to a loss of sense of control and time, and feelings of regret.¹³⁰

Infinite scroll allows users to continuously scroll through a feed of content, including posts, photos, or videos (as well as, critically for Meta’s revenues, advertisements placed within that user-generated feed of content) without ever reaching a natural stopping point or “end” to the content. As users scroll, new content automatically loads, creating an endless stream of information designed to keep users engaged for longer periods.

Infinite scroll has been widely criticized for contributing to problematic or addictive use, especially among young people.¹³¹ The lack of natural stopping cues makes it easy to lose track of time, leading to excessive use and potential negative impacts on mental health. Prominent psychological organizations have highlighted that features like infinite scroll are “particularly risky” to the mental well-being of young people, as they can foster compulsive behaviors and make it difficult to disengage from the platform.¹³²

Infinite scroll is intentionally designed to maximize user engagement by making it easy to consume content for extended periods without interruption. Indeed, the individual widely credited with developing infinite scroll, Aza Raskin,¹³³ has stated that it was designed “deliberately to keep [users] online for as long as possible,” because “by taking away the stopping cue, I can make you do what I want you to do.”¹³⁴ He also likened the feature to “taking behavioral cocaine and just sprinkling it all over your interface and that’s the thing that keeps you like coming back and back and back,” and noted that “behind every screen on your phone, there are generally like literally a thousand engineers that have worked on this thing to try to make it maximally addicting.”¹³⁵

¹³⁰ See, e.g., Roffarello, et al., *Defining and Identifying Attention Capture Deceptive Designs in Digital Interfaces*, Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI ‘23), <https://doi.org/10.1145/3544548.3580729>; see also, e.g., Roffarello, R., et. al., *Attention Capture Damaging Patterns: Exploration of recurring patterns in digital interfaces that exploit psychological vulnerabilities and capture attention, often leading the user to lose track of their goals, lose their sense of time and control, and later feel regret*, <https://attentioncapture.com/>.

¹³¹ See, e.g., Mujica, A., et al., *Addiction By Design: Some Dimensions and Challenges of Excessive Social Media Use* (Feb. 24, 2024), <https://esmed.org/MRA/mra/article/view/2677/193546021>; Granda, M.F., et al., *Developing a Design Features Taxonomy of Human-Computer Interaction in Social Media that Affect User Engagement and Addictive Behaviors* (2025), https://doi.org/10.1007/978-3-031-92474-3_19.

¹³² See, e.g., American Psychological Association, *Potential Risks of Content, Features, and Functions: A Closer Look at the Science Behind How Social Media Affects Youth* (April 2024), <https://www.apa.org/topics/social-media-internet/psychological-science-behind-youth-social-media.pdf>

¹³³ Raskin Ex. 17.

¹³⁴ Raskin Ex. 12.

¹³⁵ Raskin Ex. 11.

out the app or put down the phone and effectively take a break.”¹⁴¹ “I would imagine -- and I also believe that there’s the data very likely in the company that shows, of the people that you show the [Take a Break] notification about turning it on, how many actually did turn it on?” “Because if the goal is to get teenagers to take a break, then you would measure the feature as to how good it is set getting teenagers to take a break. And so if the screen comes up and it gets dismissed rapidly, then it just becomes something that you’ve trained the teenager to click away from. Those teenagers that opted into the feature --which, again, you would want to know how many that is because when you look at the text that you just shared with me, it’s kind of cherry-picking the wrong statistics ... that’s not the number that matters. The number that matters is how many people adopted it.”¹⁴² According to Meta, approximately 0.45% of age 13-17 Users in the U.S. had Take a Break enabled on Instagram between January 8, 2023 and September 24, 2024.¹⁴³

Similarly, “autoplay” refers to a feature where videos (including in Meta’s Reel’s product, discussed below) and advertisements begin playing automatically as users scroll through their feed, without requiring them to tap a play button, which, like infinite scroll and other features discussed in this report, is another example of an ACDP (Attention Capture Damaging Pattern) utilized on Meta’s platforms.¹⁴⁴ “Similarly to Infinite Scroll, indeed, Neverending Autoplay ‘works by

following practice/designs/features” as “area[s] of focus:” “Low-friction variable rewards design features (e.g., endless scroll and autoplay with variable content,” “Endless scrolling” and “Infinite scroll.”); Bejar Dep. Tr. 571:14-578:10 (criticizing implementation of “Take a Break” function); id. 583:12-585:13 (describing “Quiet Mode” feature and criticizing decision to make it an opt-in feature).

¹⁴¹ Bejar Dep. Tr. 574:9-11.

¹⁴² Bejar Dep. Tr. 574:15-575:12.

¹⁴³ See Defendants’ Sixth Supplemental Objections and Responses to Plaintiff’s First Set of Interrogatories to Defendants (Interrogatory 12), at 11.

¹⁴⁴ See, e.g., Chen, B., *Autoplay Videos Are Not Going Away. Here’s How to Fight Them*, The New York Times (Aug. 1, 2018) (noting “[t]ech platforms like Facebook ... liked autoplay videos, too, because they were effective at getting people to stick around on their sites”), <https://www.nytimes.com/2018/08/01/technology/personaltech/autoplay-video-fight-them.html>; see also, e.g., METANMAG-002-00082640 (internal 2018 email thread amongst Communications executives flagging an interview in which researchers note that features including autoplay the perils of autoplay and other features were noted, with the transcript noting that “the truth about what’s happening on the other side of the screen is this is happening by design,” “there’s a whole bunch of techniques” including autoplay “that are deliberately used to keep... you [] watching or keep kids hooked,” urging “mark [zuckerberg] and sheryl sandberg get serious about this and change some of the practices on facebook and instagram ... based on [the] attention economy,” noting that “[F]acebook [has] an advertising business model ... they want you to stay there, that’s how they make money,” but “modify the business model” for the benefit of “society and kids are [far] more valuable than the business model.”).

continuously providing users with yet another film clip for them to watch after one finishes, allowing ‘endless’ video streaming sessions.”¹⁴⁵

Internal documents suggest that autoplay was a strategy implemented to help retain and grow users, particularly for teen users. For example, an internal Instagram “Explore team meeting” from mid-2017 regarding “H2 Strategy” described one goal as increasing time spent to “5 min[utes],” from 4.4 minutes, for each “Instagram DAP.”¹⁴⁶ It noted that, to achieve that and other growth goals, “a big bet” would be placed “on video, reinventing Explore,” explaining that “US Teen DAP is the most important goal for IG this half,” and that “Explore is uniquely positioned to help, through video products and sourcing / ranking.”¹⁴⁷ As one way to meet this goal, the document suggested using “auto play in [the Explore] grid,” and “push notifications at night.”¹⁴⁸ The reasons for such focus on autoplay to bolster user growth metrics is clear: as noted in external research, “videos on social networks are generally short and often consumed with little or no attention, e.g., while passively scrolling,” and thus “[n]everending Autoplay ... is used to attract the user and maximize the amount of (different) content the user interacts with,” with one research study participant noting “I often spend more time than I meant to because there is a good related video that seems worth watching so ya know, ‘Just one more’ which becomes a couple hours.”¹⁴⁹

Nevertheless, internal documents show that Meta safety researchers recognized the deleterious effects of autoplay, and called for its removal. For example, an internal 2018 “Well-Being Review” noted that “auto-play videos” (and others features, including News Feed and push notifications) were “features that are interruptive or distracting” which interfered with users “attention to match their intention,” and recommended “removing/rethinking” such features.¹⁵⁰ Those recommendations were not implemented.

Years later, in 2022, an internal briefing document regarding Instagram head Adam Mosseri’s meeting with then-U.S. surgeon general Dr. Vivek Murthy discussed “specific recommendations for how social media companies can prioritize the wellbeing of users above monetizing those users for profit,” which “include[d] banning ‘auto-play’ functions on videos or

¹⁴⁵ See Roffarello, et al., *Defining and Identifying Attention Capture Deceptive Designs in Digital Interfaces*, Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI ‘23) (describing “Neverending Autoplay” as an ACDP where a “new video is automatically played when the current one finishes,” meaning there “is never a point for the user to stop and reflect, and the option to turn of autoplay is hidden or non-existent.”), <https://doi.org/10.1145/3544548.3580729>.

¹⁴⁶ METANMAG-002-01846512.

¹⁴⁷ *Id.*

¹⁴⁸ *Id.* Push notifications, another type of ACDP, are discussed in more detail below.

¹⁴⁹ See Roffarello, et al., *Defining and Identifying Attention Capture Deceptive Designs in Digital Interfaces*, Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI ‘23).

¹⁵⁰ METANMAG-002-00678118.

limiting scrolling capabilities for youth users.”¹⁵¹ Again, no action was taken, and both Facebook and Instagram continue today to use autoplay features for video content, with videos in Facebook’s feed and Reels autoplaying by default and, on Instagram, no official setting to completely turn off autoplay in the Instagram app.

Based on my expert opinion, it does not appear that Meta made a good faith effort to make the infinite scroll feature safer. To the best of my knowledge there is no way to disable infinite scroll in the Facebook and Instagram apps which internal Meta research indicates plays a role in problematic usage, and limited ability to disable autoplay on Facebook (and with none on Instagram). I also did not find robust evidence that the “take a break” feature as implemented by Facebook or Instagram helps reduce problematic usage. It appears that Meta opted to implement a purported safety feature that was promoted in its PR blog instead of attempting to find scientifically supported methods and effectively designed features to improve the safety of infinite scroll.

Meta’s implementation of infinite scroll and autoplay features reflect a broader pattern of prioritizing engagement over user well-being, particularly for teens, and their utilization should be eliminated (or configurable and turned off by default on all apps) for minors. Despite internal awareness of their potential to lead to “problematic use,” these features remained largely unmitigated, with minimal and potentially ineffective safeguards like “Take a Break” reaching only a fraction of young users. These design choices, like others rooted in Attention Capture Damaging Patterns, underscore the need for more responsible product development that places user wellbeing above usage metrics.

Push Notifications

Both Facebook, Instagram, and WhatsApp employ “push notifications,” which are alerts sent to users of new or additional content within the platforms, such as new messages, “likes,” comments, events, invitations, or other types of content. When push notifications are designed to manipulate users, as appears to be the case for Meta products, they are a form of ACDP.¹⁵² Push notifications, when employed as an ACDP, are often designed to grab the user’s attention through visual cues, sounds, or vibrations, to lure the user back onto the platform.¹⁵³

While push notifications can be useful for keeping users informed, they also appear to have served a dual purpose as they were engineered by Meta to maximize user engagement and time

¹⁵¹ METANMAG-002-00701815.

¹⁵² See, e.g., Roffarello, et al., *Defining and Identifying Attention Capture Deceptive Designs in Digital Interfaces*, Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI ‘23), <https://doi.org/10.1145/3544548.3580729>.

¹⁵³ See, e.g., MT-IG-AG-NM-000096932 at -946 (noting “notifications” have “harmful effect on teen usage”); see also, e.g., Herman, J., *How Tiny Red Dots Took Over Your Life*, New York Times (Feb. 27, 2018).

spent on their platforms, especially among younger users.¹⁵⁴ For example, in an effort to invigorate “Teen Growth” on its Instagram platform, Meta employees noted that one “lever for teen growth” was to “leverage teen’s higher tolerance for notifications to push retention and engagement.”¹⁵⁵ Yet Meta’s own documents indicate internal awareness of numerous problematic aspects of its push notification systems.¹⁵⁶ Although users technically have the option to adjust or mute notifications, Meta’s platforms make these settings difficult to find and change.¹⁵⁷

Young users can receive hundreds of notifications per day—sometimes even thousands—which research indicates can disrupt daily activities, sleep, and concentration. For example, a publicly available 2023 study performed by Common Sense Media and the C.S. Mott Children’s Hospital confirms the ubiquity and intensity of push notifications among youth, finding that that young users (including many children under age 13) “received a median of 237 notifications” in a “typical day”; that “[n]otification frequency varied widely, with maximums of over 4,500

¹⁵⁴ See, e.g., METANMAG-005-01260941 (2023 Instagram “Growth Fundamentals” deck stating “our notifications strategy is to maximize the number of people” using Instagram “through timely and relevant updates,” and contained a section entitled, “What does success look like?” with one “objective” “Notifications Strategy,” which stated “Drive growth via notifications platform.”); Kilstein Dep. Tr. 100:19-101:01 (confirming that the first goal was to drive growth at Instagram using notifications directed at teen users); *id.* 101:02-14; 102:09-14 (confirming that the push notification strategy was targeting new users of Instagram and teens who do not use Instagram very often); Andrews Dep. Tr. 81:12-22 (confirming that sending push notifications at night was part of a roadmap to increase time spent on explore surface in the second half of 2017); METANMAG-002-01846512.

¹⁵⁵ MT-IG-AG-NM-000032206 at -214.

¹⁵⁶ See, e.g., METANMAG-002-00195950 at -951 (Internal research entitled “Problematic Facebook use: When people feel like Facebook negatively affects their life” which noted that problematic use was associated with those users who “[r]eceive more notifications and respond to a greater proportion of them”); *id.* at -957 (acknowledging “academic experiments” concluding that “smartphone notifications caused inattention and hyperactivity among teens, and they reduced productivity and well-being.”); METANMAG-002-00027126 (November 2019 presentation entitled “IG Notification Systems Roadshow” confirming that “We know notifications has a harmful effect on teen usage. We’ll spend H1 investigating further . . .” (emphasis in original); METANMAG-002-01321228 at 1422 (noting studies that revealed that people were turning off notifications to “regain control of their lives” and that “people feel like their mobile phones control them and often express a fear of increasing this addiction.”); METANMAG-005-00109398 at -99 (identifying “certain notifications” as among features “promot[ing] ‘addictive’-like/problematic behaviors” on Meta’s platforms); METANMAG-002-00752009 (noting “users with ‘extreme’ problematic use” “receive more notifications and respond to a greater proportion of them”).

¹⁵⁷ See, e.g., METANMAG-002-00027126 at -142 (“I was at the office and getting a lot of push notifications from IG... It was overwhelming to try and change my notification settings.”).