

Discussion Paper: Case Study on Online Youth Harms – Project Daisy

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Please also note this paper makes several references to appendices. Though these appendices are not essential to the narrative, they are helpful to refer to for additional context.

Case Study Goals:

- Examine internal governance around product development and integrity processes at tech companies
- Understand the extent of internal research and evidence available at tech companies including Meta, and how this can be used to address evidence gaps around social media and mental health harms to teens
- Understand the extent internal research and evidence, and how this can be used to generate solutions to address risks / harms related to youth mental health
- Understand where they may be conflicts between commercial interests and integrity objectives, and how these play out in internal governance
- Generate discussion on models to better use internal research and evidence at tech companies, and the extent to which it should be brought into the public domain

Executive Summary

In September 2021, Frances Haugen, a former Facebook employee and whistleblower, revealed "The Facebook Papers" to Congress and global news outlets.ⁱ These disclosures, accompanied by eight whistleblower reports to the SEC, emphasized concerns about teenagers' mental and physical health.ⁱⁱ While media coverage provided an overview of these findings, there remains a lack of comprehensive evidence in the public domain concerning the relationship between technology use and mental health concerns among teenagers. The US Surgeon General, in their May 2023 Advisory, identified gaps in public knowledge and urged tech companies to share their data with independent researchers.ⁱⁱⁱ

The Public Interest Tech Lab and the Shorenstein Center at the Harvard Kennedy School have created FBarchive, a curated collection of "The Facebook Papers."^{iv} Using this archive, we provide detailed insights into all 19 studies contained within the documents accompanying the SEC whistleblower report, their methodologies, and findings (Appendix A). Additionally, we present a comprehensive list of the harms mentioned in these studies and map their findings to the Surgeon General's evidence gaps (Appendix B). We also outline 70 distinct recommendations from these studies, outlining the key themes (Appendix C).

Among these studies is a thorough examination of the product development process for "Project Daisy," an internal initiative at Facebook and Instagram designed to reduce the public visibility of like counts on user posts.^v Project Daisy was introduced by Facebook and Instagram in November 2019 to alleviate the stress and anxiety that teenagers often experience due to the number of likes their

posts receive. The internal Meta documents also suggested that it was intended to improve the company's reputation and demonstrate a commitment to teen well-being.^{vi} The prototype featured an option to hide like counts from viewers while still allowing post creators to see their own likes.

Extensive user testing was conducted across both Facebook and Instagram.^{vii} Results indicated reductions in commercial metrics related to revenues, ads and user engagement. However, Project Daisy also reduced the importance of likes for teens and had positive effects on their well-being. Project Daisy also faced challenges in identifying popular posts, which was seen as a drawback.

The decision to launch Project Daisy on Instagram and discontinue it on Facebook was made, partly influenced by positive feedback from policy makers, press, and academics.^{viii} Despite similar test results for teens across both platforms, teens were a much smaller proportion of the Facebook user base. However, the launch was delayed until May 2021, and in the final version the feature was turned off by default, allowed users to opt-in to hide like counts.

This case study underscores the flexibility tech companies have in designing interventions to mitigate potential harms without removing existing benefits. It also highlights potential issues in the product development process and the prioritization of commercial interests over product integrity, particularly the decisions to have the feature turned off by default, and the discontinuation of the Facebook project. Project Daisy is a relatively small intervention in the context of the array of product updates and content moderation decisions at Facebook's disposal. It appears to have been strategically chosen to preserve commercial goals while being seen to tackle integrity issues. Moreover, recent coverage by CNN suggests that this prioritization of commercial interests is enforced by decision-makers at the most senior levels, including Mark Zuckerberg, despite considerable internal support for integrity initiatives.^{ix} To address these concerns and potential harms to teenagers, collaboration between tech companies and external regulators is crucial. Tech giants possess the technical expertise and data needed to identify and address platform risks, while external regulators can ensure accountability and transparency. An inclusive approach, involving regulators, academics, and impacted communities, is essential to navigate and mitigate online platform risks effectively. Evidence from "The Facebook Papers" can serve as a blueprint for such collaboration and inform future efforts to protect the well-being of platform users, particularly teenagers.

Background Context – The Facebook papers

In September 2021, Frances Haugen, a former Facebook employee and whistleblower, disclosed internal Facebook documents, "The Facebook Papers" to Congress and news outlets around the world.^x This was followed by eight whistleblower disclosures made to the SEC in 2021.^{xi} Teenagers' mental and physical health was a key topic of these disclosures, which contained documents containing 19 internal Meta research studies on this topic.^{xii}

Coverage of the disclosures by the Wall Street Journal^{xiii} and other press outlets provides a broad overview of findings from these studies, but it is not comprehensive. Consequently, there is insufficient evidence in the public domain on the links between technology use and mental health concerns. Recent studies by researchers at Oxford University,^{xiv} UC Irvine,^{xv} the UK Medical Research Council,^{xvi} and the Stanford Media Lab^{xvii} find little evidence of links between social media use and mental health.

The US Surgeon General presented the evidence gaps in current public knowledge in their May 2023 Advisory and called for tech companies to share their data with independent researchers.^{xviii} This

was echoed by the Oxford research team, who called for more transparency from the tech sector, urging them to unlock their data for “neutral and independent investigation.”^{xxix}

Our team at the Public Interest Tech Lab and the Shorenstein Center at the Harvard Kennedy Schools have used “The Facebook Papers” to establish FBArchive, a curated, searchable, indexed collection of the documents.^{xx} Informed by the FBarchive, we provide:

- Further details on all 19 studies, including findings and methodologies (Appendix A)
- A comprehensive list of the harms cited in these studies, and an illustrative mapping of study findings to the evidence gaps put forward by the Surgeon General (Appendix B)
- Key themes and details from 70 distinct recommendations made in these studies, including product features, content moderation policies, and education & outreach initiatives (Appendix C)

Contained within these studies is a detailed review of the product development process for “Project Daisy”, an internal project at Facebook and Instagram to reduce public visibility of like counts on user posts.^{xxi} In this discussion paper, we review this process and the implications for broader governance efforts to mitigate harms to youth at tech companies.

Project Daisy Product Development and Testing

“Project Daisy” was announced by Facebook and Instagram in November 2019 as a feature to reduce public visibility of “like counts” on user posts.^{xxii} It aimed to address concerns of teens feeling stressed or anxious over likes received on their posts, depressurize sharing and reduce negative social comparison.^{xxiii} Internal Meta documents also reveal intent for the project to signal the company “cares about wellbeing” and improve “reputation and positioning”. The prototype features, presented in Figures 1 and 2, included hiding like counts from viewers while still allowing post creators to view their own likes.

Project Daisy underwent user testing for Instagram and Facebook, with more extensive testing on Instagram. Testing on Facebook was limited to the Australian market. Full results for these tests can be found in Appendix D.

Table 1 Impact of Project Daisy Prototype on Revenue Metrics for Instagram (key findings) ⁴

Affected metric	% change	Confidence interval (CI)
Instagram event based revenue	-1.0%	+/- 0.9%
Ad impressions, feed (for 12/11 to 12/25)	-0.060%	+/- 0.189%
Ad clicks (for 12/11 to 12/25)	-0.923%	+/- 0.295%
Ads click-through-rate (CTR), feed	-0.612%	+/- 0.317%

Figure 1 – Project Daisy Prototype for “The Author Experience”

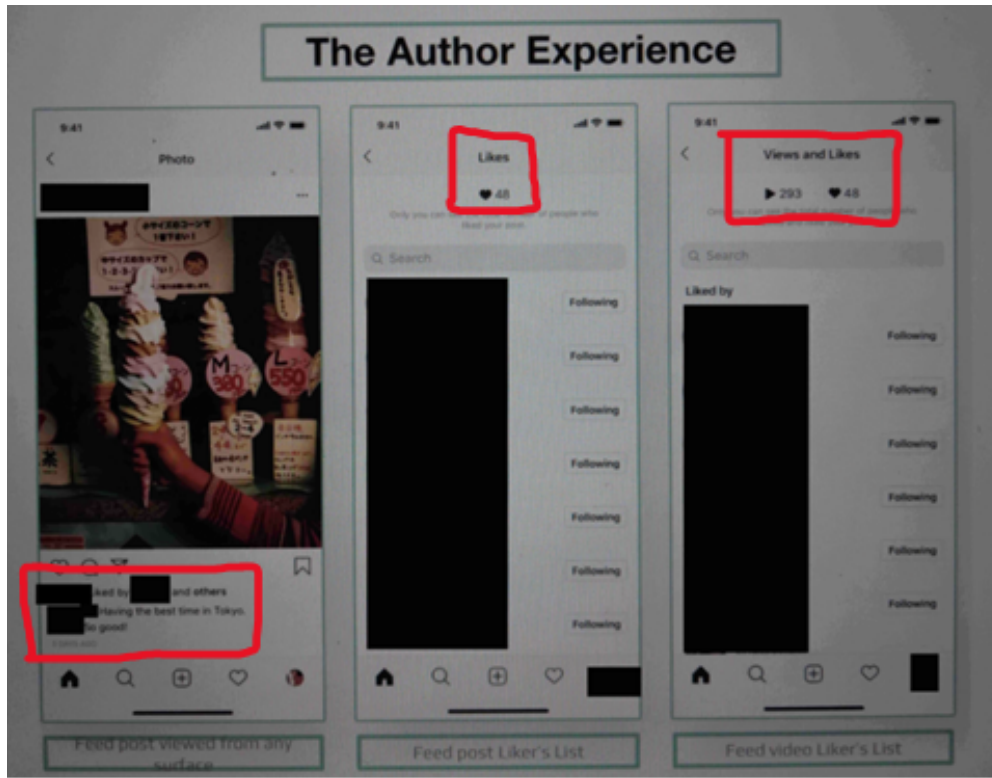
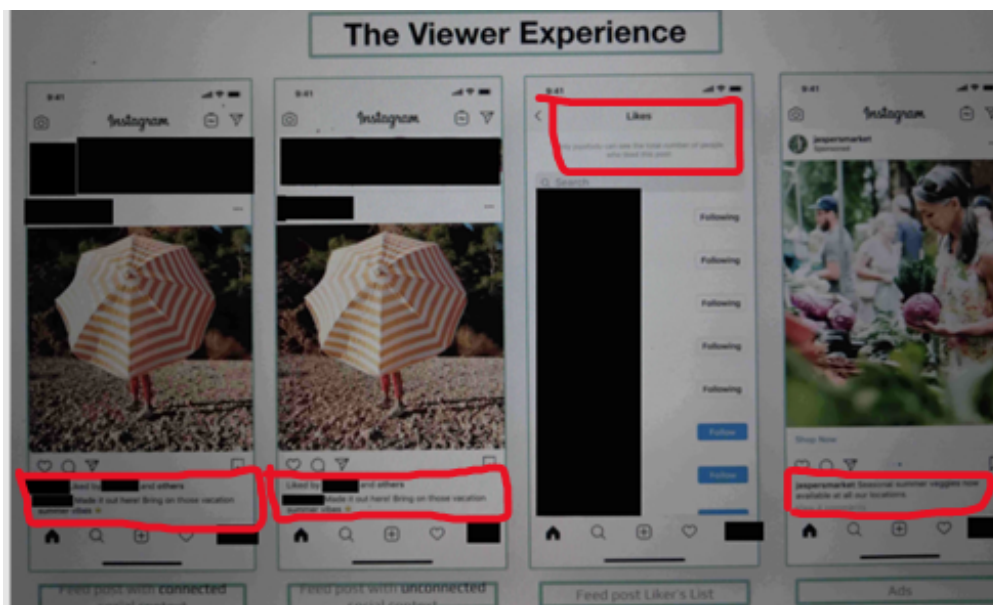


Figure 2 – Project Daisy Prototype for “The Viewer Experience”



Results reveal that for Instagram:

- Revenues and ads-related metrics decreased significantly, with average revenue loss of 1%
- Engagement metrics decreased significantly for both teens and the overall user base
- Project Daisy reduced the importance of likes for users
- Users who tested the product observed “positive impacts on themselves, and on others” from reducing visibility of likes

Feedback from Instagram user survey:

“It's pretty simple, it's not a big change. I don't think a lot of people will notice it. Besides those big celebrities with those big numbers” Survey participant #1 (redacted)

“It basically means that my post flop thing won't happen anymore because I'll be the only one that will notice if it flopped. Everybody else will just see that I posted, which is pretty lit.” Survey participant #2 (redacted)

However, Project Daisy also made it more challenging for users to identify popular posts on Instagram, which was viewed as a negative, as likes served as a signal of post quality.

Feedback from Instagram user survey:

“Right so for like the meme's up here... I would just scroll through it. I wouldn't read it but let's say it had a lot of likes, like a hundred thousand, then maybe I might actually read through it. So it will affect how long I would stay on a certain post.” Survey participant #3 (redacted)

“See for something like this, I don't really care about the like count because it's just a friend of mine. A skateboarding video. This is a brand new video that came out and see this is where / would like to see the like count because I'd want to see how big this would get just to see how interesting it really is.” Survey participant #4 (redacted)

Table 2 Impact of Project Daisy Prototype on Revenue Metrics for Facebook (key findings) ⁷

Affected metric	% change	Confidence interval (CI)
Instagram event-based revenue	-0.23%	+/- 2.29%
Ad impressions, feed	-0.29%	+/- 0.27%
Ad clicks	-0.43%	+/- 0.31%
Ads click-through-rate (CTR), feed	-0.20%	+/- 0.27%

Results for Facebook were comparable to Instagram for teens, but differed for older users:

- Revenues were not significantly affected, but other commercial metrics were, including ad impressions, clicks, user sessions, newsfeed views, and posts
- Internal notes at Meta assess the impact on revenue and engagement metrics to be “directionally aligned between Facebook and Instagram”
- Teens observed “positive impacts on themselves, and on others” from reducing visibility of likes, and reduced concerns about being judged

- For older users, Project Daisy “did not reduce concern about receiving likes and reactions”, and “slightly reduced concerns about others seeing how many likes / reactions [the user] received”, with overall concern about this was very low
- As with Instagram Project Daisy also made it more challenging for Facebook users to identify popular posts on the platform.

Project Daisy – Internal Recommendations and Outcomes

The internal research team at Meta tentatively recommended launching Project Daisy on Instagram, with the caveat that the research findings didn't strongly support this decision, leaving “the case for shipping” as “a judgment call”.^{xxiv} In favor of shipping, the cited “overwhelmingly positive responses from policy makers, press, and academics”, and believed it could help define Instagram's values moving forward.

However, they recommended not launching Project Daisy on Facebook, citing that it was “not a top concern for people” and that Daisy did not “meaningfully move the concern”.

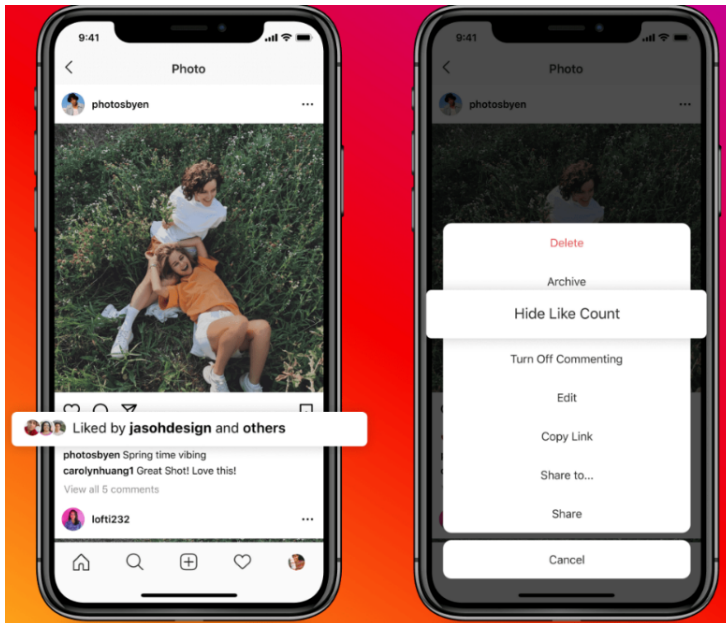
The next steps were to ship Daisy on Instagram from March 3rd, 2020, and to discontinue the Facebook project. There was a go-to-market strategy to “ensure credit ladders up to the Facebook company”, minimize negative reactions, and provide evidence-backed explanations for the decision.

However, the Instagram product launch did not go ahead in March 2020 as recommended. Another follow-up internal Meta document shows that two options were considered: a tentative recommendation to launch Daisy with further research and feature adjustments, or to block the launch based on failure to meet commercial metrics including revenue targets. The team also considered product mitigations for issues related to ad performance, content evaluation, and concerns from creators.

Project Daisy was eventually launched on Instagram in May 2021, 14 months after the initially proposed launch date.^{xxv} In the launch version, presented in Figure 3, the feature to hide like counts on others’ posts was opt-in citing mixed user feedback.

“We heard from people and experts that not seeing like counts was beneficial for some, and annoying to others, particularly because people use like counts to get a sense for what’s people, so we’re giving you a choice.” Instagram Blog, May 2021

Figure 3 User interface for Project Daisy on Instagram at launch



Project Daisy – Commentary

The opt-in nature of the launched version of Project Daisy reflects an important point – given that social media ostensibly brings with it benefits as well as harms, interventions that reduce access or product efficacy correspondingly also the potential to do harm as well as good. Tech companies have flexibility in designing interventions, particularly those related to product features, to mitigate potential harms without removing existing benefits. As Verge noted, Project Daisy highlighted “a lesson that social networks are often too reluctant to learn: rigid, one-size-fits-all platform policies are making people miserable.”^{xxvi}

However, the case also highlighted potential issues in the product development process, particularly in how evidence was treated. The opt-in nature of the launched product means it is switched off by default, reducing its impact. This decision discounts evidence of the positive impacts of Project Daisy observed by teens on themselves and those around them, some of whom would not have opted into it.^{xxvii} Furthermore, the decision to discontinue the Facebook project should be questioned, given evidence from user testing was comparable across both platforms for teens, if not for older users. As teens only constitute c.5% of Facebook, a worrying implication is that concerns for a vulnerable minority group, teens, were not considered as seriously as concerns for the majority.

Moreover, while the research behind this initiative is extensive, the Project Daisy proposal in all its forms is a relatively small intervention in the context of the array of product updates and content moderation decisions at Facebook’s disposal, highlighted by the 70 distinct recommendations we identify in the SEC disclosure documents (presented in Appendix C). Project Daisy appears to be strategically chosen to preserve commercial goals while being seen to tackle integrity issues. Public announcements and strategic commentary indicate that it was meant to signal a directional change for Facebook, showing their commitment to addressing platform harms. However, as Verge noted, it seemed “like a remarkable anticlimax” and missed potential for a more “fundamental transformation.”^{xxviii}

Recent coverage by CNN suggests the decisions made during Project Daisy are part of a broader pattern of insufficient investment in integrity initiatives, and the blocking of those initiatives where

they impeded commercial objectives from the most senior internal stakeholders.^{xxix} For example, another 2019 product proposal to disable beauty filters, was by senior executives including Instagram’s CEO Adam Mosseri, Instagram’s Policy Chief, Karina Newton, the Head of Facebook, Fidji Simo, and Meta’s Vice President of Product Design, Margaret Gould Stewart. Mark Zuckerberg rejected the plan despite this internal support and recommendations from academics and outside advisors.

Furthermore, requests for “additional investment” to address addiction, self-harm, and bullying on the platform in August 2021 were rebuffed, again by Zuckerberg, on the grounds that staffing was “too constrained” to meet the request.^{xxx} A former Facebook employee notes that “Nothing like Project Daisy with its implications for ad revenue would pass without approval from the [senior team], namely Mark.”^{xxxi}

The breadth of recommendations we find in the disclosure documents demonstrate an appetite to mitigate product harms amongst internal stakeholders, and the recent coverage also suggests support from certain senior stakeholders. Nevertheless, decisions appeared to be finalized at the very top, and those decisions protected commercial interests.

The Path Forward

“The Facebook Papers” and the 2021 SEC disclosures shed light on the concerns surrounding online safety, especially for children and teens. The potential harms cited in these documents became a focal point of coverage, even though, as stated by the Surgeon General and several academics, the true impact of online platforms on youth mental health remained under-researched. Furthermore, a clarity in solutions to these potential harms has yet to emerge in ongoing discussions.

A closer inspection of these studies can fill in some of the evidence gaps highlighted by the Surgeon General’s Advisory. While media outlets have covered headline statistics, an in-depth look is crucial, particularly to understand the mechanisms through which social media can cause harm to teens. One ongoing piece of research in this area is from a team at Oxford University that is reviewing the papers to rigorously assess these studies for associations between Meta’s platforms and impacts on teen well-being.

Furthermore, the studies can shed light on how tech companies can deliver the solutions to address these harms, as evidenced by the 70 distinct recommendations identified. However, product development and integrity initiatives may be hindered by internal governance. Commercial motivations, like those seen in Project Daisy, may obstruct substantive changes, especially if such changes threaten revenue or demand high costs without clear returns. The SEC’s inaction post-disclosure underlines this, as tech companies prioritize advertiser interests over user safety.^{xxxii}

Recent coverage by the Wall Street Journal suggests that failure to handle integrity issues is shortsighted even on a commercial basis.^{xxxiii} Their investigation into Instagram Reels demonstrated that its algorithm not only recommended inappropriate sexual content to teens, but it placed ads from major brands adjacent to these videos. By not addressing this integrity issue, Instagram not only failed to address serious ethical and safety concerns but also jeopardized future ad revenue streams.^{xxxiv}

Effective resolutions will likely require collaboration between tech giants and external regulators. Without the tech companies, external regulators will not have the requisite technical expertise or access to internal data and testing to identify harms and mandate appropriate solutions without the

risk of unintended consequences. It is therefore essential for tech companies to provide access to internal data to facilitate informed oversight. For instance, the Twitter Developer Platform, which provided API access to internal Twitter data for academics, was a 'best-in-class' example of data sharing before access was paywalled.^{xxxv}

Furthermore, data made public through the Facebook Papers, including the recommendations we have highlighted, could provide the impetus for renewed internal integrity initiatives, similar action taken by competitors, or informed regulations. Moreover, though there is potential for them to develop these practices as a voluntary industry standard, given increased public pressure to act on harms, alongside lawsuits,^{xxxvi} short-term commercial incentives are powerful.

External regulation may therefore be required for meaningful action. This regulation could involve creating an external 'regulatory watchdog' with whom tech companies share their data.

Representatives in this watchdog should encompass a diverse range of professionals, from regulators to academics and impacted communities, ensuring a comprehensive review and representation. Effective use of evidence from the Facebook Papers could provide a blueprint for a joint, inclusive approach between the tech industry and regulatory agencies in navigating and mitigating online platform risks.

Discussion questions

- To what extent are harms / risks related to social media and youth mental health a priority issue?
- To what extent is the evidence presented in the SEC disclosure documents in the public domain?
- To what extent does the evidence presented in the SEC disclosure documents strengthen stated evidence gaps?
- In the case of Project Daisy, where were internal governance and product development processes effective / ineffective?
- How can the evidence contained in the SEC disclosure documents **on risks and harms** arising from social media be best used to empower stakeholders? What are the benefits, barriers and risks to suggested approaches?
 - Increased public awareness of harms results in **social media users advocating for change, and/or reducing use of the platforms**
 - Increased public awareness of harms results in **social media users changing their behavior** when using the platforms
 - Justification for **regulatory changes / enforcement**
 - Impetus for **legislative changes**
- How can the information contained in the SEC disclosure documents on **recommendations** (product features, moderation and/or outreach) be best used to empower stakeholders? What are the benefits, barriers and risks to suggested approaches?
 - Allows **regulators to make more precise recommendations and/or regulations**
 - **Internal impetus** within tech companies for increased focus and activity related to governance and integrity
- What are potential unintended consequences of legislation, regulations, company policy changes and/or product changes?

- Reducing access to services which deliver user and/or community benefits
- Non-consideration or marginalization of vulnerable groups
- What are the full set of levers available to the following groups to address harms / risks related to social media and youth mental health?
 - Social media technology companies
 - Regulatory agencies (FCC, FTC, SEC, HHS)
 - Legislative bodies (Congress and state)
 - NGOs and advocacy groups

Appendix A – List of Studies Contained in the SEC Disclosure Documents

There are 19 studies included in the SEC disclosure documents, Within the FBarchive, these studies are presented across four documents:

- Teen Mental Health SEC Disclosure Set 1, Part 1^{xxxvii}
- Teen Mental Health SEC Disclosure Set 1, Part 2^{xxxviii}
- Teen Mental Health SEC Disclosure Set 2, Part 1^{xxxix}
- Teen Mental Health SEC Disclosure Set 2, Part 2^{xl}

Table 3. Findings from studies contained in the SEC disclosure documents on teen mental health

Study	Key Findings	Methods
Headline statistics contained in letter to SEC	<ul style="list-style-type: none"> ● 13.5% of teen girls on Instagram say the platform makes thoughts of “Suicide and Self Injury” worse ● 17% of teen girl Instagram users say platform makes “Eating Issues” (e.g., anorexia and bulimia) worse ● “We make body issues worse for 1 in 3 teen girls” 	N/A these are headline statistics from other studies
#1: “Problematic Facebook use: When people like Facebook negative affects their life” (July 2018)	<ul style="list-style-type: none"> ● 3.1% of Facebook users in the U.S. experience serious problems with sleep, work performance, or relationships that they attribute to Facebook and find difficult to change ● Teens and young adults are most likely to have this problem (4-6% vs 2% for 40+ year olds) ● Proposed solutions include giving users greater control over notifications (Do Not Disturb), thinking about how Facebook can create expectations to respond quickly, e.g., to 	Paired a survey of 20,000 US Facebook users measuring perceptions of problematic use with demographic and behavioral data for the prior month; adapted questions from literature on

	<p>messenger, prompts to break people out of “a flow they feel out of control”</p>	<p>internet addiction and problematic use cases</p>
<p>#2: “Beyond the Individual User: Understanding our products through the Household ecosystem”¹</p>	<ul style="list-style-type: none"> • Eldest child plays a pivotal role in rest of the family adopting Instagram • Children feel “their parents are addicted to their phones” • While the new user experience felt easy and straightforward for these youth participants, there's deeper guidance and coaching missing from onboarding that's currently being fulfilled by older siblings 	<p>Ethnographic study over time of 13 families which contained at least one pre-teen , an active teen Instagram user and parent/guardian. Prioritized a sample that was geographically and demographically diverse, with a mix of single and two-parent households, with varied understanding and acceptance of the product.</p>
<p>#3: “Proactive risk investigation request – eating disorders [2-min update]”</p>	<ul style="list-style-type: none"> • If you are seeking out eating disorder type content, you will be served more of it over time • Instagram Stories can be named / labeled with terms that violate eating disorder policies, allowing users to spotlight violating content in their profiles • They have not launched account level proactive detection. However, there are legal limitations from proactively detecting content and accounts in the EU (privacy?) • No mechanism in place to prevent user from titling their stories with violating terms 	<p>Not provided – this was a “2 minute update” of high-level findings</p>
<p>#4: “Teen Mental Health Deep Dive” (October 2019)</p>	<ul style="list-style-type: none"> • 82% of teens on the platform have felt at least one emotional issue in the past month. 1 in 5 has thought about suicide or self-injury • Most teens said Instagram has a positive impact on mental health, but those who are unsatisfied with their lives are more negatively affected by the app • Harm falls into three major categories – social comparison, social pressure, and negative interactions with others • Teens with mental health issues want help, but often do not ask for it • Product suggestions include personalized Explore and Feed, better time spent tools, and opting out of personally triggering ad categories. • Outreach suggestions include a page about feeling good about yourself, content to help teens talk 	<p>40 in-person 2-hour focus groups in LA and London, with 8 follow-up 1-hour calls for 13-17 years who reported issues with body image, self-esteem, negative mood, depression, loneliness or isolation; and online survey across 2,503 people in the UK</p>

	about these issues, and parents education on how they can support	
#5: “Foundational research on overall teen wellbeing” (October 2019)	<ul style="list-style-type: none"> • Teens who use Instagram at least monthly report being generally satisfied with their lives • Teen users report experiencing benefits of social media more than drawbacks. The top benefit is connecting with friends, whilst the largest drawback is to look perfect • Teens are receptive to communication about well-being from Instagram, but communications need to center on the connection with friends to resonate 	Qualitative research conducted in the US and France, and an online survey conducted in five markets (US, UK, Germany, France, and Japan) - further detail not provided
#6: “Signal Boosting New Teen Model” (September 2020)	<ul style="list-style-type: none"> • New Instagram teen / non-teen predictions for analytics are available for US accounts, with additional markets in second half of year (priority on India, UK, Japan) • Legacy teen model is not accurate so Facebook should not use it, core dimension team is planning to deprecate the legacy model by the end of the year • The new model should be used for teen/non-teen analyses, experimentation analysis (teen user attribute, teen metrics once built) and integrity use-cases 	Unclear but based on internal datasets
#7: “Hard Life Moments – Mental Health Deep Dive” (November 2019)	<ul style="list-style-type: none"> • Work stress affected most users, followed by sleep, body image, sadness/depression, anxiety, FOMO, loneliness, social comparison and EDs • Most issues had higher reach amongst teens • Teens generally thought that it was somewhat important for Instagram to support people going through a hard time, irrespective of experience • Instagram makes body issues worse for 1 in 3 teen girls • Social comparison identified as key issue based on reach, intensity of experience, and role of Instagram in worsening experiences, for both teens and adults • For teens, body image, loneliness, SSI and problematic use should also be key areas of focus 	Survey of 22,410 users across the US, Japan, Brazil, Indonesia, turkey and India, between ages 13 and 65+; asked questions on 23 topics ranging from mental health to interpersonal issues and life events, with reporting in the document focused on mental health; Some questions had a deep dive on multiple lenses (intensity of negative experience, impact of Instagram on negative experience, usage of

		Instagram during negative experience, expectation for Instagram to support during experience)
#8: “The Role of the Teen in Shaping a Household’s Experience of Instagram”	<ul style="list-style-type: none"> • Teens were often the reason other household members joined IG – one member within a household has a power to influence acquisition and retention for others • Teens strongly influenced preteens’ understanding of what and how frequently to share on Instagram, even discouraging them from sharing due to permanence or content context – teens could create barriers to sharing for future generations including that being spontaneous and/or authentic doesn’t belong on the platform – need to understand myths circulating amongst teens to inform comms and shift the perception of sharing on the platform • Teens indirectly impacted a household’s perception of Instagram through their behavior on and off platform 	<p>Household Ecosystem Study:</p> <p>Six-month primary research study with 18 rural and urban families from across 12 cities in the US.</p> <p>64 remote interviews with family members (mom, dad, teen, preteen, occasionally grandparents), 14 remote dyad interviews, 8 in-home ethnographies, 7 remote ethnographies.</p>
#9: “Sizing negative social comparison on Instagram: Baseline data from Daisy Controls Wave 1” (April 2020)	<ul style="list-style-type: none"> • While the average teen experiences negative social comparison on Instagram “rarely” to “sometimes”, at least 20% said they experienced it “often” or “very often” • Teen girls & non-binary teens consistently reported more negative social comparison than teen boys • Feeling worse about one’s appearance or body because of Instagram was even more common than feeling worse about “yourself” generally. This was especially true for teen girls - 37% said they “Often” or “Very often” felt worse about their appearance or body because of other people’s Instagram posts, vs. 26% for feeling worse about themselves generally 	Survey of 36,000 teens in the US, UK and India
#10 “Appearance-based social comparison on Instagram” (February 2021)	<ul style="list-style-type: none"> • Appearance-based comparison is common on Instagram. 33% of people say they compare their appearances to others’ often or always. 48% of teen girls do. • It causes people to feel bad about themselves: 26% report often or always seeing posts that make 	Surveyed 50,590 people in 10 countries (Australia, Brazil, France, Germany, Great Britain, India, Japan, Korea, Mexico, United States);



	<p>them feel worse about their bodies or appearances. 37% of teen girls do.</p> <ul style="list-style-type: none"> • 23% of people on Instagram feel a lot or extreme pressure to look perfect on Instagram, and 34% of teen girls do. • Appearance-based comparison is worse for teens, women of all ages, and people in globally western countries (US, GB, AU, France) 	<p>respondents answered questions adapted from the literature about their experiences with appearance comparison on Instagram as well as their body image and weight more generally</p>
<p>#11: “How topics people see are linked to appearance comparison on Instagram” (March 2021)</p>	<ul style="list-style-type: none"> • Some topics are likely to make viewers, esp. teen girls feel worse about their bodies (e.g., fashion and beauty, relationships, Western pop stars who emphasize their bodies, images that emphasize women’s bodies) • These topics collectively comprise ¼ of what is seen on Instagram (1/3 for teen girls) • Seeing content that emphasizes a collective identity or activity is associated less with appearance comparison • Appearance comparison driven by top accounts, rather than from friends • For every piece of friend content a teen girl sees she sees 5x as many pieces of content from top accounts 	<p>Surveyed 50,590 people in 10 countries (Australia, Brazil, France, Germany, Great Britain, India, Japan, Korea, Mexico, United States) in Dec 2020 – follow-on from prior survey</p> <p>Questions on how often you see posts on Instagram that make you feel worse about body or appearance, how often you compare appearance to those on Instagram, how much pressure to look perfect on Instagram</p>
<p>#12: “Teen Girls Body Image and Social Comparison on IG – an exploratory study in the US” (March 2020)</p>	<ul style="list-style-type: none"> • Social comparison is worse on Instagram than other apps – it is perceived as real life, but based on celebrity standards (e.g., TikTok has lower standards, VSCO is known to be edited / not real life) • Body image comparisons are formed by trifecta of factors – body standards, flawless skin and fashion • Social comparison mimics grief cycle – pre-existing moods are a pre-cursor to a downward emotional spiral • Confidence building rooted in combination of reality, accessibility and attainable aspiration 	<p>In-person focus groups – sample size 15, San Ramon, US, regionally representative third-party panels, 2-hours, with 5 people per group, monthly Instagram users aged 13-21 with low body image and self-esteem</p> <p>Online 5-day diary study, sample size 10,</p>

		<p>US, nationally representative third-party panels, monthly Instagram user</p> <p>In-depth interviews, sample size 7, US, participants from online diary study, 30 minute video call conversation</p>
<p>#13: “Social comparison: Topics, celebrities, like counts, selfies” (January 2021)</p>	<ul style="list-style-type: none"> • Controlling for demographics, people feel more negative comparison after exposure to fashion posts, high like counts on others posts, celebrities polished content in Feed and selfies • Social comparison is worse for women in most countries, and more common amongst teens • They feel better after seeing posts about gratitude, community, vulnerability and pride • Inspired by workout posts and less polished celebrity content • Project Daisy (i.e., hiding like counts from public view) reduced the negative impact of seeing posts with many Likes, and reduced negative social comparison overall by 2% 	<p>Survey of 100k people, March & April 2020 Countries: Australia, US, Brazil, Korea, Japan, India, Germany, France, Great Britain</p> <p>Joined responses with behavioral data Time spent by surface, like counts seen, keywords in caption text, celebrities seen, use of filters.</p> <p>Collected data longitudinally from same people; about 100k took first wave and 15k returned for a second wave</p>
<p>#14: Project Daisy - “Instagram Experiment Results”</p>	<p>Prior research showed that :</p> <ul style="list-style-type: none"> • 32% of people (37% of teens) says a reason they abandoned the Instagram Feed creation flow is “Won’t get enough likes of comments” • 70% of teens who abandon the create flow say they have felt “anxious or stressed” when deciding whether to post • Of “early work” & younger users who reported feeling stressed while posting (and report ever posting), 35% say “People will see how many likes I get” is a reason for feeling that stress • In qualitative studies many teens and young adults felt stress about the number of likes their posts 	<p>A six-week global network test, where the prototype was sent to 12% of Instagram monthly active users to test its impact on metrics related to revenue, app usage, content consumption, content interaction, and sharing (from November 14th to December 25th 2019)</p>

	<p>received, and would feel bad and delete posts that got a low number of likes</p> <p>Experiment results:</p> <ul style="list-style-type: none"> • Negative and statistically significant impact on revenues, ad clicks and ad click-through-rate, with average revenue loss of 1%+/-0.9% • Statistically significant reductions in daily active users, number of sessions and time spend on the app for overall user base (though not for teens) • Overall likes, comments and outbound follows activity reduced by the statistically significant margin for teens and overall user base • Those exposed to Project Daisy were less likely to care about likes, less likely to compare the number of likes their posts received with others, and more likely to observed positive impacts “on self” and others by reducing visibility of likes 	<p>A six-week “standard” global A/B test comparing the prototype with the existing user experience. This took the form of a survey, segmented by teens and older users, comparing the prototype’s impact on metrics for wellbeing and user activity relative to the control of the existing user experience (three waves of data collection include a pretest survey from November 8th –13th 2019, a week 3 survey from December 6th-9th 2019, and a week 7 survey from January 3rd – 7th 2020)</p> <p>Qualitative research was conducted with users in the US, Canada, Brazil and Japan “through various stages of product development</p>
<p>#15: Project Daisy - “Facebook Experiment Results”</p>	<ul style="list-style-type: none"> • Revenue not statistically significantly affected, though there are statistically significant reductions in ad impressions and ad clicks • Statistically significant reductions in users sessions, views on the newsfeed, overall posts including reshares, and likes, reactions and comments • “Blue Daisy” (Project Daisy for Facebook) addresses concern of judgment when sharing posts for both teens and adults to a statistically significant extent • Teens exposed to Blue Daisy more likely to observe a positive impact “on self” and on others from reducing like visibility 	<p>Two 90/10 tests were conducted in October 2019 and January 2020, with sample sizes of 20,732 (of which 6,464 are in the control group) and 8,275 users (of which 2,768 users are in the control group) respectively.</p> <p>These tests were limited to Australia,</p>

	<ul style="list-style-type: none"> • Both teens and adults exposed to Blue Daisy found it more difficult to assess popularity of content (statistically significant) • Both teens and adults exposed to Blue Daisy found it more difficult to assess how users feel (statistically significant) 	<p>with an internal note stating that “social comparison varies widely between countries”</p>
<p>#16: “Power of identities – why teens and young adults use Instagram”</p>	<ul style="list-style-type: none"> • Instagram well positioned to resonate with young people, particularly 13-17 yo and 18-24 yo • Core needs of teens and young adults – identity development, interest and entertainment – are areas where Instagram excels • Competition introduced new social behaviors beyond Instagram’s core strengths – especially true for close comms and some entertainment jobs • Market dynamics and brand perceptions also making an impact on Instagram use – teens have specific concerns about Instagram including fear of judgment and social comparison 	<p>Not provided – though this is a commercial analysis</p>
<p>#17: “What we know about body image (literature review)” (March 2020)</p>	<ul style="list-style-type: none"> • Body image issues are common, affect women more than men, don’t stop at adulthood, and may be worse in East Asia and among vulnerable populations • 33% of Instagram and 11% of Facebook users think platform makes their own body issues worse • Interventions for reducing body image issues are likely to be more effective for certain populations; their potential unintended negative impact should also be considered • The Instagram Mental Health team is working to better understand specific concerns within social comparison and body image, especially amongst teenage girls, to inform product changes 	<p>Literature review of 85 sources, including both external research and internal Facebook documents</p>
<p>#18: “Expression and authenticity”</p>	<ul style="list-style-type: none"> • Young people have three selves relevant to social media (authentic, ideal and emotionally honest) • Even though young people say they are comfortable of Instagram, they strive to present an aspirational version of themselves • Teens, young adults and creators think Instagram is a game to be played, and has unwritten rules they must follow - violating these rules results in judgment, which constrains further expression, especially for those who have lower levels of subjective well-being • Being more open requires strong social capital • “Instagram is about sharing, not getting likes” • Opportunity for Instagram to encourage more authentic expression (E.g., by downplaying 	<p>3 staged research:</p> <ul style="list-style-type: none"> - Consumer qualitative study, n=36 across Tokyo, LA, and Paris, sourced from regionally representative third-party panels, monthly Instagram users, 13-25. They were given mobile ethnography homework, 90-minute in-person conversations



	<p>prominence of likes, segmenting close friends from main feeds, developing teen mode to put guardrails on the experience of younger users)</p>	<p>- Creator qualitative study, n=6 in the US, sourced from Facebook Inc, Creator Incubator, 45 minute VC conversation</p> <p>- Consumer survey – sample size of 5,989 from the US, UK, France, Japan, South Korea and Brazil (each approx 1,000 people), sourced from regionally representative third-party panels, monthly Instagram users aged 13-25</p>
<p>19: “Teen communication jobs to be done 13 year old analysis” (March 2019)</p>	<ul style="list-style-type: none"> • Younger teens (13 yo) are similar to older teens in many ways – in terms of the activities and roles they play on the platform • Handful of key differences – co-viewing and content creation rank higher, notably higher sum for roles related to doing things together in different locations (e.g., playing games, watching videos or watching live events), entertaining others and content creation • 13 yos less engaged in roles around sharing (content, opinions, feelings), earning potential or getting advice 	<p>Survey with n=271, 20-minute online survey, mobile-enabled, US-only, for 13 yo, current in school, who own a smartphone with a gender mix</p> <p>Supported by a data cut from a larger report</p>
<p>Social comparison research reports</p>	<p>Note a study, but references other internal “notes / research”:</p> <ul style="list-style-type: none"> • Positive and negative social comparison on Instagram (May 2020) • Which topics are associated with changes in social comparison on Instagram? (July 2020) • How does seeing content from celebrities on Instagram affect social comparison? (Aug 2020) • Likes and social comparison on Instagram (Oct 2020) • Social comparison, like counts and Project Daisy (June 2020) • Teen Girls Body Image and Social Comparison (March 2020) 	<p>N/A - not a study but a citation of other studies</p>



	<ul style="list-style-type: none">• Selfies, filters, and social comparison on Instagram (Aug 2020)• Has social comparison decreased because of COVID-19? (May 2020)• Social comparison on Instagram (qual, survey in US/UK, Oct 2020)• Hard life moments survey: COVID edition (May 2020)• Country differences in social comparison (FB) (June 2019)• Social comparison on Facebook, on Instagram, and in everyday life (cross-platform comparisons) (April 2019)• Social comparison on Facebook (content-level survey/interviews) (Feb 2016)• Social comparison and Facebook: Feedback, positivity, and opportunities for comparison (Academic paper, CHI 2020)• Country differences in social comparison on social media (Academic paper, CSCW 2020)	
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Appendix B – Findings on harms from studies cited in the SEC disclosure documents

Table 4 Findings on harms from studies cited in the SEC disclosure documents

Finding(s)	Supporting study	Prior coverage
<ul style="list-style-type: none"> 82% of teens faced at least one emotional issue over the past month 1/5 teens say IG makes them feel worse about themselves 1/5 thought about suicide or self-injury Feelings of not being attractive (c.40%), not having enough friends (33%), not having enough money (c.40%) and creating the perfect image (c.40-50%) originated on Instagram 	<p>“Teen Mental Health Deep Dive”</p> <ul style="list-style-type: none"> 40 in-person 2-hour focus groups in LA and London 8 follow-up 1-hour calls for 13-17 years who reported issues with body image, self-esteem, negative mood, depression, loneliness or isolation Online survey across 2,503 people in the UK 	<ul style="list-style-type: none"> Stats presented in WSJ article Full document published by the WSJ
<ul style="list-style-type: none"> Mental health issues have greater reach amongst teens than adults Instagram makes things worse in 5% (work stress) to c.23% (social comparison) of issues Instagram makes body issues worse for 1/3 teens girls At least 20% of teens feel negative social comparison “often or very often” 	<p>“Hard life moments - Mental Health Deep Dive”</p> <ul style="list-style-type: none"> Survey of 22,410 users across the US, Japan, Brazil, Indonesia, turkey and India, between ages 13 and 65+ Questions on 23 topics ranging from mental health to interpersonal issues and life events, with reporting in the document focused on mental health 	<ul style="list-style-type: none"> Stats presented in WSJ article Stats presented in the headline SEC letter Full document published by the WSJ
<ul style="list-style-type: none"> Appearance-based comparison is common on Instagram – 1/3 of people say they compare appearances to others often or always, 48% of teen girls do c.26% report often or always seeing posts that make them feel worse 	<p>“Appearance-based social comparison”</p> <ul style="list-style-type: none"> Survey of 50,590 people in 10 countries (Australia, Brazil, France, Germany, Great Britain, India, Japan, Korea, Mexico, United States) Respondents answered questions adapted from the literature about their experiences with appearance comparison on Instagram as well as their body image and weight more generally 	<ul style="list-style-type: none"> Full document published by the WSJ

<p>about their bodies (37% for teen girls)</p> <ul style="list-style-type: none"> • 23% of people of IG feel extreme pressure to look perfect of IG (34% of teen girls) 		
<ul style="list-style-type: none"> • Fashion & beauty, relationships, images that emphasize women’s bodies, and celebrities who emphasize their bodies are the topics which make viewers, especially teen girls feel worse about their bodies • These topics collectively comprise ¼ of what is seen of IG (1/3 for teen girls) • Appearance comparisons are driven by ‘top accounts’ rather than friends’ – for every piece of friend content a teen girl sees, she sees 5x content from top accounts 	<p>“How topics people see are linked to appearance comparison on IG”</p> <ul style="list-style-type: none"> • Survey of 50,590 people in 10 countries (Australia, Brazil, France, Germany, Great Britain, India, Japan, Korea, Mexico, United States) • Follow-up to “appearance-based social comparison” study 	<p>No</p>
<ul style="list-style-type: none"> • Social comparison is worse on IG than other apps, as it is perceived as ‘real life’ but content follows celebrity standards • Body image comparisons informed by body standards, flawless skin and fashion • Confidence building is rooted in reality, accessibility and aspiration • 66% of teen girls and 40% of teen boys experience negative social comparison 	<p>“Teen Girls Body Image and Social Comparison on IG – an exploratory study in the US”</p> <ul style="list-style-type: none"> • 3 in-person focus groups (sample size of 15, 5 people per group) sourced from regionally representative-panels of monthly Instagram users aged 13-21 with low body image and self-esteem • Online 5-day diary study (sample size of 10) sourced from nationally-representative panels of monthly Instagram users • In-depth interviews (sample size of 7) with participants from the diary study 	<ul style="list-style-type: none"> • Stats presented in WSJ article • Full document published by the WSJ • Full document published by Gizmodo

<ul style="list-style-type: none"> Controlling for demographics, people experience more negative comparisons after exposure to fashion posts, high like counts on other posts, celebrities polished content Social comparison is worse for women and more common amongst teens 	<p>“Social comparison: Topics, celebrities, like counts, selfies”</p> <ul style="list-style-type: none"> Survey of 100k people in 7 countries (Australia, Brazil, Korea, Japan, India, Germany, France and Great Britain) Joined responses with behavioral data on time spend by surface, like counts seen, keywords in caption text, celebrities seen and use of filters 	<ul style="list-style-type: none"> Full document published by the WSJ
<ul style="list-style-type: none"> Teen girls and non-binary teens consistent reported more negative social comparison – 37% said they “often or very often” felt worse about their appearance or body because of Instagram 	<p>“Sizing negative social comparisons”</p> <ul style="list-style-type: none"> Survey of 36k teens in the US, UK, and India 	<p>No</p>
<ul style="list-style-type: none"> Body image issues are common, affect women more than men, don’t stop at adulthood and may be worse in East Asia and amongst vulnerable populations 33% of Instagram and 11% of Facebook users think these platforms makes their own body issues worse 	<p>“What we know about body image (literature review)”</p> <ul style="list-style-type: none"> Literature review of 85 sources, including both external research and internal FB documents 	<p>No</p>
<ul style="list-style-type: none"> 3.1% of FB users in the US experience serious problems with sleep, work performance or relationships attributed to FB use These users are more likely to be men and either teens or people in their 20s 	<p>“Problematic Facebook use”</p> <ul style="list-style-type: none"> Survey of 20,000 US Facebook users measuring perceptions of problematic use with demographic and behavioral data for the prior month Adapted questions from literature on internet addiction and problematic use cases 	<p>No</p>
<ul style="list-style-type: none"> If users are seeking out eating disorder-related content, they will be 	<p>“2 minute update” of high-level findings on this issue (not a full study)</p>	<p>No</p>

served more of it over time		
<ul style="list-style-type: none"> • Young people strive to present an aspirational version of themselves on Instagram • They see the platform as a game to be played with unwritten roles than can be violated (e.g., showing emotional vulnerability) • Violating these rules has consequences of judgment and constrained further expression 	<p>“Expression and authenticity”</p> <ul style="list-style-type: none"> • Consumer qualitative study (sample size of 36) across Tokyo, LA, and Paris, sourced from regionally representative third-party panels of monthly Instagram users aged 13-25 • Mobile ethnography homework and in-depth conversations • Creator qualitative study (sample size of six) in the US sourced from Facebook Inc, a creator incubator • In-depth conversations • Consumer survey (sample size of 5,998) across the US, UK, France, Japan, South Korea and Brazil (each sample with approximately 1,000 people) sourced from regionally representative third-party panels of monthly Instagram users aged 13-25 	No

Notable additional harms or supporting information on harms not presented in prior coverage are as follows:

- Instances of negative social comparison on Instagram are more frequent for teen girls and non-binary teens, of whom 37% experience it “often” or “very often” (relative to 20% of teens as a whole group)
- Fashion & beauty, relationships, celebrities, and images that emphasize womens bodies are the topics that make viewers, especially teen girls feel worse about their bodies – these topics collectively comprise 25% of viewed content on Instagram, and 1/3rd of content viewed by teen girls
- 33% of Instagram users and 11% of Facebook users think these platforms make their own body issues worse
- Body images issues are more common amongst women than men, do not stop at adulthood, and may be worse in East Asia and amongst vulnerable populations
- 3.1% of Facebook users in the US experience serious problems with sleep work performance or relationships which is attributed to Facebook use. These users are more likely to be men, and in their teens or 20s
- If users are seeking out eating disorder-related content, they will be served more of it over time (due to the algorithms)

Moreover, sharing the findings of these studies addresses the ‘call-to-action’ of the Surgeon General’s Advisory, to “share data with share data with independent researchers to increase our collective understanding of the impacts”, and to provide indicative data on “the impact of their products on children”.

The table below provides examples of findings which can address the stated evidence gaps. It is intended to provide an illustration and not provide comprehensive coverage of these findings.

Table 5 Examples of stated evidence gaps from the Surgeon General addressed by internal Facebook studies

Evidence area	Finding(s)	Supporting Studies
1a. Differences between in-person vs online interactions in health impact	<ul style="list-style-type: none"> • Friends and family are reported by teens to have the most positive impact on mental health, with social media having less positive impacts • One in five teens in the UK and US say Instagram makes them feel worse about themselves, with results being most negative for UK girls • The boundary between social media and in-real life are blurred; feelings and boundaries cross between the two • Underlying emotional states determine resilience to cope with content teens see online (i.e., teens having a bad day know they are more vulnerable to what they see online) 	#4 Teen Mental Health Deep Dive
1a.	<ul style="list-style-type: none"> • Independent of Instagram, many people feel bad about their appearances (25%, including 32% of teen girls) or weight (40%) more generally (44% of teen girls) 	#10 Appearance-based social comparison on Instagram
1a.	<ul style="list-style-type: none"> • Pre-existing moods are a precursor to a downward emotional spiral driven by negative social comparison • This downward spiral is exacerbated by Instagram as a platform, which can create a pressure to look perfect or reinforce a perception of high standards through highlight reels • External factors impact whether users go down a downward spiral – for instance, working on internal confidence, companionship, or spending time on offline activities can prevent this spiral, whereas emotional isolation, emotional exhaustion, negative life events, or body dysmorphia can reinforce it 	#12 Teen Girls Body Image and Social Comparison on IG
1b. Unique contributions of social media behavior to social connectedness, social isolation, and mental health symptoms	<ul style="list-style-type: none"> • Instagram shapes daily lives and moods, according to feedback from UK and US teens • Teens' sensitivity to content on Instagram creates a relationship between the platform and their daily state of mind -- a mental connection that frames the platform in a positive or negative light • Teens unprompted blame Instagram for increases in the rates of anxiety and depression amongst teens, with constant comparison "the reason" for anxiety and depression 	#4 Teen Mental Health Deep Dive

	<ul style="list-style-type: none"> Teens specifically call out the following as ways Instagram harms their mental health – pressure to conform to social stereotypes, pressure to match the money and body shapes of influencers, the need for validation, friendship conflicts, bullying and hate speech, oversexualization of girls, and inappropriate advertisements targeted to vulnerable groups 	
2a. Pathways to harm - Social comparison	<ul style="list-style-type: none"> Survey results show that “the perfect image, feeling attractive, and having enough money” are the most likely to have started on Instagram for teens in the US and UK Due to the “proliferation of new and different ways to compare themselves to others”, social comparison and perfectionism are being dealt with by young people on “an unprecedented scale” Social comparison creates a negative feedback loop – as users compare themselves to others, feelings of self-doubt grow, which in turn increases the attention they give to these feelings, causing low mood, and further increasing vulnerability to content related to social comparison 	#4 Teen Mental Health Deep Dive
2a.	<ul style="list-style-type: none"> Social comparison has high reach, moderate intensity, and Instagram is making the issue worse for 1 in 4 people Their research separates general body image concerns vs. IG-specific appearance comparison. For teens and young adults, both dimensions are high. However, around age 30, the role of IG begins to diminish: even though people still have high levels of body image concern, they don't compare themselves to others on IG as much, and don't report as many of the negative outcomes 	#7 Hard life moments - mental health deep dive
2a.	<ul style="list-style-type: none"> 45% of teen girls and 46% of non-binary teens said they “often” or “very often” felt they were not as successful, attractive, or popular as others on Instagram 27% of teen girls said they “often” or “very often” felt discouraged about their own life after seeing other peoples' posts on IG 26% of teen girls “Often” or “Very often” felt worse about themselves because of other people's posts on IG 37% of teen girls said they “often” or “very often” felt worse about their appearance or body because of other people's IG posts 27% of teen girls said they “often” or “very often” felt worse about themselves because of other people's like counts 	#9 Sizing negative social comparison on Instagram



2a.	<ul style="list-style-type: none"> • 33% of people say they compare their appearances to others often or always; 48% of teen girls do • 26% report often or always seeing posts that make them feel worse about their bodies or appearances; 37% of teen girls do. • 23% of people feel a lot or extreme pressure to look perfect on Instagram; 34% of teen girls do 	#10 Appearance-based social comparison on Instagram
2a.	<ul style="list-style-type: none"> • Body image comparisons are formed by a trifecta of factors – body standards, flawless skin, and fashion. Other social comparisons include influencer "money for nothing" lifestyles, relationships (family and romantic), travel, experiences, and talents • Social comparison journeys mimic the grief cycle. Pre-existing moods are a precursor to a downward emotional spiral, encompassing a range of emotions from jealousy to self-proclaimed dysmorphia • This downward spiral is exacerbated by the platform through a pressure to look perfect, and highlight reels reinforcing perceptions of high standards as the norm • Interview feedback suggests this results in mental health outcomes including eating disorders, body dysmorphia, body dissatisfaction, depression, and loneliness 	#12 Teen Girls Body Image and Social Comparison on IG
2b. Pathways to harm - Addiction	<ul style="list-style-type: none"> • Problematic use (i.e., issues with sleep, work or relationships, and with concerns or preoccupations about how they use Facebook) is highest amongst teens and people in their 20s, consistent with “previous findings that younger people generally have more problems with self-regulation” and “research on time control” • Associations between major life events (e.g., breakup or divorce) and reporting problematic use • People with problematic use report much lower well-being overall (in relation to questions on support, loneliness, happiness, and negative affect) • People with problematic use say the time they spend on Facebook is more valuable, compared to people who do not report problematic use 	#1 Problematic Facebook use
2c. Which types of content, and at what frequency and intensity, generate most harm?	<ul style="list-style-type: none"> • Users with problematic use see a greater proportion of posts and comments about social media and phones (terms like “Facebook, Instagram, follow, viral” and “cell, text, mobile”) • They also see a greater proportion of posts about Christianity (terms like “biblical, worship, pray, heavenly”) - users are not more likely to write about religion, just to read about religion 	#1 Problematic Facebook use
2c.	<ul style="list-style-type: none"> • Some topics are likely to make viewers, especially teen girls, feel worse about their bodies – fashion and beauty, 	#11 How topics people see are



	<p>relationships, western pop stars who emphasize their bodies, and images that emphasize women’s bodies generally</p> <ul style="list-style-type: none"> Collectively, these topics comprise ¼ of what people see on Instagram (1/3 for teen girls) 	<p>linked to appearance comparison on Instagram</p>
<p>2d. Through which modes of access (e.g., smartphone) and design features is harm generated?</p>	<ul style="list-style-type: none"> Product features (Messenger) create pressure to respond immediately, reducing feelings on control Users with problematic use receive more push notifications and respond more quickly to them Academic experiments showed “smartphone notifications caused inattention and hyperactivity among teens” and reduce productivity and wellbeing 	<p>#1 Problematic Facebook use</p>
<p>2d.</p>	<ul style="list-style-type: none"> Appearance comparison is being driven by top accounts and content from non-friends. When friends post about problematic topics (e.g., beauty), it doesn't trigger appearance comparison the same way content from non-friends and celebrities does For every piece of friend content a teen girl sees, she sees 5x as many pieces of content from top accounts 	<p>#11 How topics people see are linked to appearance comparison on Instagram</p>
<p>2e. For which users is most harm caused, and why?</p>	<ul style="list-style-type: none"> Facebook users in the US who experience problematic use are more likely to be men, and either teens or people in their 20s They spent about 19 minutes more per day, and have 15 more sessions per day, spending a greater proportion of sessions on the platform at night They receive more notifications, and respond to a greater proportion of them, spend a smaller proportion of their time in the New Feed, and a greater proportion of time on Messenger and hopping between profiles They read more posts and comments containing words about social media 	<p>#1 Problematic Facebook use</p>
<p>2e.</p>	<ul style="list-style-type: none"> Instagram makes body image issues for 1 in 3 teen girls 	<p>#7 Hard life moments - mental health deep dive</p>
<p>2e.</p>	<ul style="list-style-type: none"> Appearance-based comparison is worse for teens, women of all ages, and people in globally western countries (US, UK, Australia, France) Women still experience greater body image concerns than men at nearly all ages 	<p>#10 Appearance-based social comparison on Instagram</p>
<p>3. What are the beneficial effects of social media? For whom are the benefits greatest, in what way, and</p>	<ul style="list-style-type: none"> Teens in the UK and US report the positive role Instagram can play in their wellbeing, with some use cases helping them to connect with friends / family, enjoy entertainment, seek out information and current events, facilitate a wider world view & community, and pursue a passion & self-expression 	<p>#4 Teen Mental Health Deep Dive</p>

under what circumstances?	<ul style="list-style-type: none"> • Meme accounts, comments, and conversations with others make teens feel best 	
3.	<ul style="list-style-type: none"> • Surveyed users (both adults and teens) felt that Instagram can make issues including loneliness, sadness, financial issues, financial stress, work stress and fear of missing out better in some cases • Instagram is used by users to distract from negative experiences and get support from friends and family. It is rarely used to raise awareness, or inform friends and family about negative experiences 	#7 Hard life moments - mental health deep dive
3.	<ul style="list-style-type: none"> • Meeting the core needs of teens and young adults – identity development, interest, and entertainment – are “areas where Instagram excels” 	#16 Power of identities – why teens and young adults use Instagram
4. Strategies and approaches to protect the mental health and well-being of children and adolescents on social media (e.g., programs, policies, design features, interventions, norms)	<ul style="list-style-type: none"> • Teens think friends and parents should help them with mental health challenges • There is a range of strategies Instagram could deploy to help teens with issues they face – prioritizing “positive content” accounts in their recommendation algorithms, encouraging people to take a break from social media, connecting people to resources, helping users to curate content and connections (e.g., to close friends), punishing bad behavior 	#4 Teen Mental Health Deep Dive
4.	<ul style="list-style-type: none"> • Reduce exposure to celebrity content about fashion, beauty, and relationships, while increasing exposure to close friend content of all kinds 	#11 How topics people see are linked to appearance comparison on Instagram
4.	<ul style="list-style-type: none"> • Break the cycle of social comparison – celebrate small but meaningful accomplishments; show progress toward a goal; customize and personalize Instagram experience; personalized time-out mindfulness breaks that break the spiral; surface body inclusive influencers and flip the switch from envy to inspiration 	#12 Teen Girls Body Image and Social Comparison on IG
4.	<ul style="list-style-type: none"> • There is an opportunity for Instagram to encourage more authentic expression – for instance by downplaying the prominence of likes, segmenting close friends from the main feed, developing a “teen mode” to put guardrails on the experience of younger users 	#18 Expression and authenticity

5. Interaction between social media and developmental stages for measuring risk of mental health impact	<ul style="list-style-type: none"> Teens have a strong impact influencing their pre-teen sibling’s decision to use Instagram, as well as their understanding of what and how frequently to share content (i.e., they create a mental model for their siblings around use of the platform) 	#8 The role of the teen in shaping household's experience on Instagram
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Appendix C – Findings on 70 recommendations from studies cited in the SEC Disclosure Documents

We identify 70 distinct recommendations, including 16 general principles, 20 product feature proposals, 14 related to content moderation policies and practices, and 20 education & outreach initiatives.

Some key themes from these recommendations include:

- Sustained investment in wellbeing initiatives
- Giving users greater control and personalization of their online experience, including both the information they view, and the information they share
- Product safety features, including age-appropriate guardrails
- Promoting positive content and demoting harmful content
- Controls and prompts to help users manage their time on the platform
- Challenging mental models, for instance the notion that posts need to meet a certain standard of perfection
- Informational prompts and promoting media literacy

16 of the recommendations take the form of general principles:

Table 6 Recommendations in the form of general principles

Type	Recommendation	Supporting studies
Business priorities	Challenge certain mental models when necessary (e.g., that posts need to meet a standard of perfection) by providing more transparency and value-prop understanding	#8 The role of the teen in shaping household's experience on Instagram
	Continue to invest in well-being from both a feature and communication standpoint	#8 The role of the teen in shaping household's experience on Instagram
	Greater emphasis on family-oriented marketing	#8 The role of the teen in shaping household's experience on Instagram

	How can Instagram better define permanence of stories vs feed in our messaging to help encourage spontaneity of certain features	#8 The role of the teen in shaping household's experience on Instagram
Content Filters	Provide users with greater control and personalization of their online experiences	#4 Teen Mental Health Deep Dive; #5 Foundational research on teen wellbeing
Outreach and education	Help adults and trusted advisors learn how to support teens and young people	#4 Teen Mental Health Deep Dive
	Provide greater support to people using Instagram when they are having a hard time	#7 Hard life moments - mental health deep dive
Parental controls / age-restricted controls	Think about how parents being on Instagram affects graph management and teen engagement over time	#2 Beyond the individual user
	Where parents are unable to promote support, explore whether the platform provide support in roles including interpreter/mediator, cheerleader/advisor, gatekeeper, and identity guardian	#2 Beyond the individual user
Promoting / demoting content	Address the balance of content viewed by users (for instance reducing exposure to fashion or celebrity content, increasing exposure to close friend content)	#4 Teen Mental Health Deep Dive; #11 How topics people see are linked to appearance comparison on Instagram; #13 Social comparison: Topics, celebrities, like counts, selfies
	Focus more on appearance-based comparison as an issue to resolve on Instagram as a platform, especially for vulnerable groups (teens, women of all ages)	#10 Appearance-based social comparison on Instagram; #13 Social comparison: Topics, celebrities, like counts, selfies
	Focus more on social comparison as an issue to resolve on Instagram as a platform	#7 Hard life moments - mental health deep dive
	Support collaborative creation behaviors in the app	#8 The role of the teen in shaping household's experience on Instagram
Session length prompts and controls	Help people reduce the amount of time they spend on Facebook (through fewer sessions, more control over notifications, ways to break people out the flow)	Headline Statistics in SEC letter; #1: Problematic Facebook Use; #4 Teen Mental Health Deep Dive

	Think more about the expectations to respond quickly that we facilitate with Messenger and feedback	#1 Problematic Facebook Use
User account moderation	Punish app users for bad behavior	#4 Teen Mental Health Deep Dive

20 recommendations relate to product features:

Table 7 Recommendations on product features

Type	Intervention	Supporting Studies
Age-related controls	"Teen mode" to put guardrails on the experience of new users	#18 Expression and authenticity
	Review the image filters available to different user cohorts (e.g., surface "fun" filters rather than filters designed around beautification, rethink how editing tools can refocus attention away from the body)	#8 The role of the teen in shaping household's experience on Instagram; #12 Teen Girls Body Image and Social Comparison on IG; #13 Social comparison: Topics, celebrities, like counts, selfies
Content Filters	Ability to opt out of personally triggering ad categories	#4 Teen Mental Health Deep Dive; #5 Foundational research on teen wellbeing
	Greater control of content on "Explore", with the ability to choose different themes that are more attuned to well-being, or other personal preferences	#4 Teen Mental Health Deep Dive; #5 Foundational research on teen wellbeing
	Greater control of content, with the ability to filter feed and "Explore" based on user preferences (e.g., filter out fashion-related posts)	#4 Teen Mental Health Deep Dive; #12 Teen Girls Body Image and Social Comparison on IG; #13 Social comparison: Topics, celebrities, like counts, selfies
	Offer content controls so people can hide posts on certain topics (either permanently or when they're feeling vulnerable) without having to unfollow or miss out on other posts by these creators	#13 Social comparison: Topics, celebrities, like counts, selfies
	Providing better content controls to allow people to hide sexually suggestive photos and those that emphasize women's bodies or faces	#11 How topics people see are linked to appearance comparison on Instagram
In-app informational prompts	Guidance and coaching on responsible use of Instagram during the onboarding	#2 Beyond the individual user; #8 The role of the teen in

	process (to support younger users as an older sibling may do)	shaping household's experience on Instagram
	New user experience - include a disclosure when opening an IG that reminds people that images are often edited	#17 What we know about body image
	Prompts to unfollow accounts the user is not interested in	#4 Teen Mental Health Deep Dive
	Showing PSAs - e.g., participants shown message that social media is a highlight reel prior to browsing Instagram	#17 What we know about body image
Promoting / demoting content	Allow for easier graph trimming by users, both for who they follow and who follows them	#12 Teen Girls Body Image and Social Comparison on IG; #18 Expression and authenticity
	Offer nudges where people are spiraling / searching for / consuming social comparison content excessively	#13 Social comparison: Topics, celebrities, like counts, selfies
Session length prompts and controls	"Do not disturb" notifications	#1 Problematic Facebook use
	Improve "time spent" tools	#5 Foundational research on teen wellbeing
	Introduce interstitials to provide natural breakpoints while scrolling (e.g., prompts to pause and reflect, personalized time-out mindfulness breaks help people remember that Instagram isn't real life)	#1 Problematic Facebook use; #4 Teen Mental Health Deep Dive; #12 Teen Girls Body Image and Social Comparison on IG; #17 What we know about body image
User account restrictions	User accounts should require verification by ID	#4 Teen Mental Health Deep Dive
User privacy controls	Create spaces in the app where teens have privacy both from their parents, but also (adult) non-peers (e.g., teachers, neighbors)	#8 The role of the teen in shaping household's experience on Instagram
	Provide greater ability to restrict content viewed on the account by other users, and viewability of other users' content to designated close friends, or segment close friends content / spaces	#4 Teen Mental Health Deep Dive; #8 The role of the teen in shaping household's experience on Instagram; #11 How topics people see are linked to appearance comparison on Instagram; #18 Expression and authenticity
Visibility of likes / comments	Reduce public visibility on the number of likes received on posts (Project Daisy)	#8 The role of the teen in shaping household's experience on Instagram;

		#13 Social comparison: Topics, celebrities, like counts, selfies; #14 Project Daisy - Instagram Experiment Results; #15 Project Daisy - Facebook Experiment Results; #17 What we know about body image; #18 Expression and authenticity
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14 recommendations relate to content moderation policies and practices:

Table 8 Recommendations on content moderation

Type	Intervention	Current implementation?
Promoting / demoting content	Adjust recommendation algorithms to encourage people towards other content or activities after they seek out large volumes of fashion / beauty / relationship content	#11 How topics people see are linked to appearance comparison on Instagram
	Demote content on Explores and Reels using the topic and Xray features	#11 How topics people see are linked to appearance comparison on Instagram
	Make comments related to appearance on others' posts less salient, even when positive	#17 What we know about body image
	Promote accounts and content which spread "positive messaging" in the feed - for instance, content which elicits a collective identity (e.g., sports) or activity (e.g., crafts, puzzle), or content related to community, friendship, giving and pride	#4 Teen Mental Health Deep Dive; #11 How topics people see are linked to appearance comparison on Instagram
	Promote close-friend content	#17 What we know about body image
	Promote content related to body functionality over appearance	#17 What we know about body image
	Promote content which does not use image filters / demote content which users image filters to combat perfectionism expectations	#8 The role of the teen in shaping household's experience on Instagram; #17 What we know about body image

	Promote content which elicits a collective identity (e.g., sports) or activity (e.g., crafts, puzzle)	#11 How topics people see are linked to appearance comparison on Instagram
	Promote humorous posts (e.g., parody images of Instagram celebrities)	#17 What we know about body image
	Reduce recommendation prompts to follow celebrities that promote primarily fashion and beauty content, or fashion related posts more generally	#11 How topics people see are linked to appearance comparison on Instagram
	Surface body-inclusive influencers and body-positive posts to make teens feel validated and included	#11 How topics people see are linked to appearance comparison on Instagram; #17 What we know about body image
User account moderation	Accounts linked by email should have common account moderation (e.g., strike system should apply across all accounts)	#4 Teen Mental Health Deep Dive
	Reduce negative comments from others	#17 What we know about body image
	Review the number of accounts user can have (there are two separate recommendations which suggest users should only be allowed to have one account, and to have multiple accounts respectively)	#4 Teen Mental Health Deep Dive; #18 Expression and authenticity

20 recommendations involve education and outreach:

Table 9 Recommendations on education and outreach

Type	Intervention	Current implementation?
Eating disorders	Campaigns directed at young women are more effective if women previously suffering from EDs selected as spokespersons	#17 What we know about body image
Expression and authenticity	Behind the scenes - encourage people to share before/after photos of themselves with/without makeup	#17 What we know about body image
	Celebrate small but meaningful accomplishments to show users their lives are moving forward	#12 Teen Girls Body Image and Social Comparison on IG
	Educating parents on the value of second accounts (e.g., dedicated hobbies)	#8 The role of the teen in shaping household's experience on Instagram
	Encourage creators and users to show progress toward a goal, showing the journey rather than just the destination,	#12 Teen Girls Body Image and Social Comparison on IG



	highlighting the "work in progress" that is life	
	Encourage creators, especially top accounts to share more vulnerable content that inspires authenticity	#8 The role of the teen in shaping household's experience on Instagram; #13 Social comparison: Topics, celebrities, like counts, selfies
	Helping young people understand where they are comfortable sharing what	#18 Expression and authenticity
	Understand Instagram myths circulating amongst teens (e.g., being spontaneous and authentic doesn't belong on Instagram) to inform comms and shift perception of sharing on Instagram	#8 The role of the teen in shaping household's experience on Instagram
Media literacy	Promote media literacy	#17 What we know about body image
Mental health	Connect people to support resources / help lines	#4 Teen Mental Health Deep Dive
	Connect teens want content from ordinary teens and counselors/therapists to make them feel less alone	#4 Teen Mental Health Deep Dive
	Connect users having a hard time with other users having a similar experience	#5 Foundational research on teen wellbeing
	Educational content on mental health issues (e.g., content that emphasizes emotional resilience and positive well-being both on and off IG, page on feeling good about yourself, practical tips and action for people in need)	#4 Teen Mental Health Deep Dive; #5 Foundational research on teen wellbeing; #18 Expression and authenticity
	Parental education on mental health issues	#5 Foundational research on teen wellbeing
	Partnerships with meditation apps	#4 Teen Mental Health Deep Dive
Session length prompts and controls	Educate users on notification controls	#1 Problematic Facebook use
Social comparison	Campaign with celebrities whose followers feel more negative social comparison to reduce this	#13 Social comparison: Topics, celebrities, like counts, selfies
	Find positive ways to engage with accounts and creators of popular filters whose followers have high negative comparison	#13 Social comparison: Topics, celebrities, like counts, selfies
User behavior	Encourage people to be nice on the platform	#4 Teen Mental Health Deep Dive
	Flip the switch from envy to inspiration through concerted effort to change norms	#12 Teen Girls Body Image and Social Comparison on IG



	around sharing and surfacing highlights that are inspiring but not triggering	
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Appendix D – Additional results from Project Daisy

Table 10 Impact of Project Daisy Prototype on Engagement Metrics for Instagram (key findings)⁵

	Affected metric	% change (teens)	CI	% change (overall)	CI
App wide	Daily active people (i.e., users)	0.023%	+/- 0.156%	-0.092%	+/- 0.067
	App sessions	-0.336%	+/- 0.402%	-0.281%	+/- 0.213
	Time spent on app	-0.185%	+/- 0.485%	-0.290%	+/- 0.235
Consumption & interaction	Overall likes	-1.040%	+/- 0.396%	-1.162%	+/- 0.320
	Overall comments	-2.673%	+/- 1.026%	-2.132%	+/- 0.696
	Home Feed Post Impressions	0.019%	+/- 0.332%	-0.022%	+/- 0.183
	Explore Media Impressions	-0.278%	+/- 0.416%	-0.395%	+/- 0.233
	Outbound follows	-1.227%	+/- 0.638%	-0.989%	+/- 0.444
Sharing	Direct sends	0.446%	+/- 0.983%	0.069%	+/- 0.649
	Overall Media content	1.645%	+/- 6.281%	1.174%	+/- 2.309
	Overall Producer daily active people	0.139%	+/- 0.427%	-0.010%	+/- 0.330
	Feed Media Created	14.443%	+/- 29.463	2.615%	+/- 5.239
	Feed Producer DAP	-0.035%	+/- 0.592%	-0.016%	+/- 0.423
	Feed Media Deleted	-0.639%	+/- 1.731%	0.050%	+/- 1.391
	Feed Media Archived	-1.029%	+/- 1.882%	-1.246%	+/- 1.589

Table 11 Results from Global Network Test Survey (younger users)²

Question		Week 3			Week 7		
		Control	Daisy	r ³	Control	Daisy	r
N=		2,666	2,725		2,711	2,794	
Well-being	During the last 7 days, how good did you feel when looking at your Instagram feed?	3.48	3.50		3.52	3.51	
Meaningful interactions	During the last 7 days, how meaningful were your interactions with others on Instagram?	3.18	3.20		3.18	3.15	
Meaningful time	During the last 7 days, how meaningful was the time you spent on Instagram?	3.21	3.22		3.21	3.16	
Sense of belonging	During the last 7 days, how connected did you feel to other people while using Instagram?	3.25	3.28		3.28	3.24	
Popular posts	During the last 7 days, how easy was it to see which posts were popular?	3.47	3.31	0.07	3.51	3.34	0.07
Inauthentic likes	During the last 7 days, how often did you like a post even though you didn't enjoy the content (for example, to support the person who posted it, or out of social obligation)?	3.34	3.26		3.33	3.25	

Caring about likes	During the last 7 days, how much did you care about the number of likes you posts received?	2.92	2.83	0.03	2.92	2.80	0.07
Comparing likes	During the last 7 days, how often did you compare the number of likes your posts received to the number of likes other people received?	2.68	2.52	0.05	2.64	2.44	0.07
Free expression	During the last 7 days, how free did you feel to express yourself on Instagram?	3.43	3.42		3.43	3.39	
Impact on self	If people could only see the number of likes for their own posts, would this make Instagram better or worse for you personally?	3.06	3.24	0.06	3.12	3.30	0.07
Impact on others	If people could only see the number of likes for their own posts, would this make Instagram better or worse for other people?	3.08	3.22	0.05	3.11	3.31	0.07

Table 12 Results from Global Network Test Survey (older users)⁴

Question		Week 3			Week 7			
		Control	Daisy	r ⁵	Control	Daisy	r	
		N=	2,871	2,922		2,945	2,923	
Well-being	During the last 7 days, how good did you feel when looking at your Instagram feed?		3.41	3.34	0.04	3.39	3.37	
Meaningful interactions	During the last 7 days, how meaningful were your interactions with others on Instagram?		3.03	3.01		2.99	2.99	
Meaningful time	During the last 7 days, how meaningful was the time you spent on Instagram?		3.00	2.96		2.95	2.95	
Sense of belonging	During the last 7 days, how connected did you feel to other people while using Instagram?		3.06	3.02		3.02	3.02	
Popular posts	During the last 7 days, how easy was it to see which posts were popular?		3.45	3.25	0.09	3.46	3.32	0.06
Inauthentic likes	During the last 7 days, how often did you like a post even though you didn't enjoy the content (for example, to support the person who posted it, or out of social obligation)?		3.00	2.92		2.99	2.95	
Caring about likes	During the last 7 days, how much did you care about the number of likes you posts received?		2.70	2.64		2.72	2.63	0.03
Comparing likes	During the last 7 days, how often did you compare the number of likes your posts received to the number of likes other people received?		2.31	2.24		2.28	2.17	0.04

Free expression	During the last 7 days, how free did you feel to express yourself on Instagram?	3.45	3.43		3.43	3.46	
Impact on self	If people could only see the number of likes for their own posts, would this make Instagram better or worse for you personally?	3.29	3.36		3.28	3.42	0.06
Impact on others	If people could only see the number of likes for their own posts, would this make Instagram better or worse for other people?	3.32	3.38		3.30	3.42	0.05

Table 13 Impact of Project Daisy Prototype on Engagement Metrics for Facebook (key findings)⁸

Affected metric	% change	Confidence interval (CI)
Daily active people (i.e, users)	-0.06%	+/- 0.10%
Sessions	-0.45%	+/- 0.28%
Viewpoint views on News Feed	-0.38%	+/- 0.27%
Time spent on app (Facebook Blue)	-0.21%	+/- 0.24%
Like Meaningful social interaction score Given	-0.72%	+/- 0.52%
Reactions MSI score given	-1.65%	+/- 0.71%
Comment MSI score given	-0.79%	+/- 0.56%
User-to-user comments given	-0.82%	+/- 0.63%
Overall posts	-1.12%	+/- 0.75%
Overall posts -original	-0.41%	+/- 0.84%
Overall posts -reshares	-1.67%	+/- 1.09%
Original Broadcast Feed Post daily active people	-0.19%	+/- 0.46%

Table 14 Facebook younger user survey results⁶

Questions (on a scale of 1 to 5, 5 being most positive)		Control	Daisy
General well-being	In the past 7 days, how good have you felt?	3.00	2.95
Sources of sharing concern when deciding whether to post	People can how many likes / reactions I may receive	1.74	1.81
	Post may not receive enough likes / reactions	1.93	1.94
	Someone may judge me	2.32	2.53
	People I care about may not actually see what I post	2.34	2.32
	People I don't know very well may see what I post	2.08	2.17
Negative social comparison	In the past 7 days, how often did seeing the likes/reactions on other people's posts make you feel worse about yourself or your own posts?	1.76	1.83
Consumption of popular content	In the past 7 days, how easy or difficult has it been to identify what is popular?	3.32	3.58
Consumption of important posts	In the past 7 days, how easy or difficult has it been to device which posts are important to see?	3.22	3.28
Understand others	In the past 7 days, how easy or difficult has it been to understand how others feel?	3.44	3.65

See what's popular	In the past 7 days, how easy or difficult has it been to see which posts are popular on News Feed?	3.25	3.29
Value from likes / reactions	How much value, if any, do you get from seeing likes / reactions received on other people's posts?	3.04	3.10
Importance of visible likes / reactions	How important is it for other people to see the likes / reactions that your own posts receive?	2.58	2.58
Compare own likes / reactions to others	During the last 7 days, how often, if ever, did you compare the amount of likes / reactions your own posts receive to the amount other people's posts receive?	1.94	1.94
Daisy better or worse for self	If people could only see the number of likes / reactions for their own posts, to what extent would this make Facebook better or worse for you personally?	3.20	2.94

Table 15 Facebook older user survey results⁷

Questions (on a scale of 1 to 5, 5 being most positive)		Control	Daisy
General well-being	In the past 7 days, how good have you felt?	3.26	3.25
Sources of sharing concern when deciding whether to post	People can how many likes / reactions I may receive	1.54	1.83
	Post may not receive enough likes / reactions	1.54	1.57
	Someone may judge me	1.93	2.20
	People I care about may not actually see what I post	2.42	2.55
	People I don't know very well may see what I post	2.22	2.25
Negative social comparison	In the past 7 days, how often did seeing the likes/reactions on other people's posts make you feel worse about yourself or your own posts?	1.81	1.87
Consumption of popular content	In the past 7 days, how easy or difficult has it been to identify what is popular?	3.31	3.39
Consumption of important posts	In the past 7 days, how easy or difficult has it been to device which posts are important to see?	3.17	3.24
Understand others	In the past 7 days, how easy or difficult has it been to understand how others feel?	3.42	3.59
See what's popular	In the past 7 days, how easy or difficult has it been to see which posts are popular on News Feed?	3.22	3.24
Value from likes / reactions	How much value, if any, do you get from seeing likes / reactions received on other people's posts?	2.91	2.90
Importance of visible likes / reactions	How important is it for other people to see the likes / reactions that your own posts receive?	2.39	2.39
Compare own likes / reactions to others	During the last 7 days, how often, if ever, did you compare the amount of likes / reactions your own posts receive to the amount other people's posts receive?	1.65	1.60
Daisy better or worse for self	If people could only see the number of likes / reactions for their own posts, to what extent would this make Facebook better or worse for you personally?	3.10	3.05
Daisy better or worse for others	If people could only see the number of likes / reactions for their own posts. To what extent would this make Facebook better or worse for other people?	3.11	3.09

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