

Exhibit 118

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

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

v.

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

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

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

MDL No. 3047

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

Judge: Hon. Yvonne Gonzalez Rogers

Magistrate Judge: Hon. Peter H. Kang

EXPERT REPORT OF CARL S. SABA, MBA, CVA, ASA, ABV

November 21, 2025

Table 1 of 40: 2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 2023-10-01										2023-10-01 to 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[illegible]

portion of those shared costs that are attributed to Facebook or Instagram. Nor did Meta provide more granular cost data pertaining to sub-categories within each of the four main cost categories, though I understand that Counsel requested this more granular cost data.²³⁰ Similarly, although I reviewed a discovery request issued to Meta for the cost data broken down by age, Meta did not produce cost data broken down by age.

123. Other gaps in the data produced by Meta are identified in other Sections of this report, alongside related calculations.

124. I have been asked to provide estimates in this report for certain data that was requested, and that Meta did not provide. I believe I applied reasonable assumptions to complete those estimates. I reserve my rights to supplement this report in the event additional data or information is produced.

IX. Monthly Instances of Average Daily Time Spent by Teens above 0.5 hours on Instagram and Facebook

125. In this section, I describe the methodology used to calculate monthly instances of more than 0.5 hours of average daily time spent on Instagram and Facebook by Teens in MDL States, based on average daily time spent data produced by Meta. This analysis was performed for each MDL State individually and by platform for both Instagram and Facebook. The calculations in this section are prepared for user accounts (MAUs) rather than Teen persons. I note that my results may capture instances where the same Teens exceeded the half hour threshold per day in the same months, for both Facebook and Instagram. My results may also capture instances where the same Teens exceeded that amount of time on

²³⁰ Correspondence from State AGs to Meta's counsel, June 23, 2025.

multiple user accounts on the same platform (FB or IG). This is because, as discussed in this report, Teens average more than one user account per person. As an example, a Teen that has two user accounts which exceed 0.5 hours of average daily time, is actually spending more than one hour of average daily time.

1. Calculation of Number of Average Daily Time Spent Instances for Instagram

126. In Schedules 2.9.3 and 2.1, I have used data produced by Meta that shows on a monthly basis for the period February 2018 to March 2024 and for the MDL States:

- The number of MAUs on Instagram aged 13 to 17 years old.
- The average time spent for Teens MAUs per day on Instagram, in seconds, for the 10th, 20th, 30th, 40th, 50th, 60th, 70th, 80th, 90th, 95th, and 99th percentiles.

127. This data is described in Meta's Production letters and interrogatory responses associated with the data files in META3047MDL-VOL289.²³¹ User data discussed in the following sections of this report are for the MDL States unless specified otherwise.

128. I then performed the following calculation for each month. By way of example, in March 2018, the 75th percentile, i.e., 75%, of MAUs in California aged 13 to 17 spent less than 3,111 seconds a day on average during the month. The 80th percentile, i.e., 80%, spent less than 3,621 seconds a day on average. Using these two data points, I estimate using linear interpolation that 79.79 percent of MAU aged 13 to 17 spent less than 3,600 seconds a day on average, i.e., 1 hour. The converse of this computation reflects that 20.21 percent of MAUs

²³¹ 2025.10.10 Meta Ltr. re META3047_Vol289.pdf; Meta Defendant's Thirteenth Supplemental Responses and Objections to Plaintiff's Second Set of Interrogatories, October 10, 2025.

aged 13 to 17 spent more than 3,600 seconds a day on average in the month of March 2018, *i.e.*, more than 1 hour per day on average.

129. Using the above methodology, for each month I have determined the percentages of MAUs aged 13 to 17 that spent more than 0.5, 1, 2, 3, 4 and 5 hours per day on average in each month, *i.e.*, more than 1,800, 3,600, 7,200, 10,800 and 14,400 seconds.

130. I was not able to estimate the percentage that spent more than 3 hours per day on average for certain months because the percentile data did not allow for linear interpolation. The same was true for certain months for 4 and 5 hours per day: in such cases, I have not calculated any number of MAUs aged 13 to 17 spending more than 3, 4, or 5 hours a day on average on Instagram in that month. I am unable to calculate such instances because the time spent thresholds exceed the 99th percentile in the data set, and Meta has not provided time spent data above the 99th percentile. In addition, Meta's use of an approximation of percentiles with a 1.33% error rate, as discussed earlier in this report, may cause some instances where a calculation would have been possible if the exact rather than approximate percentile data had been provided to me. Further, Meta's inclusion of MAUs in the dataset that did not spend any time on the respective application during the relevant month, as discussed earlier in the report, may also cause instances where a calculation would have been possible if not for the clustering of MAUs with time spent at the upper boundaries of the percentile distributions.

131. For each month, I then multiplied each of these 0.5, 1, 2, 3, and 4 hour percentages by the associated MAUs aged 13 to 17 for the state and month to calculate the number of MAUs aged 13 to 17 that spent more than 0.5, 1, 2, 3, and 4 hours a day on average on Instagram in a given month.

132. I carried this data over to Schedule 2.9.1. I have been asked by Counsel to count the number of instances that an MAU aged 13 to 17 has spent more than 0.5, 1, 2, 3 and 4 hours a day on average for the month. The resulting number of monthly instances where Instagram UDAP State Teen MAUs spent a daily average above the designated time thresholds between February 2018 and March 2024 is shown in the table below.

State	0.5 Hour	1 Hour	2 Hours	3 Hours	4 Hours	5 Hours
California	116,592,409	66,388,717	22,111,508	9,372,632	2,295,472	34,705
Colorado	8,736,413	3,827,890	1,015,059	141,944	16,255	-
Connecticut	7,011,414	3,165,776	860,265	155,030	-	-
Delaware	2,518,519	1,469,099	544,420	245,391	78,200	9,768
Illinois	22,200,640	9,849,904	2,942,885	570,435	51,788	-
Indiana	12,823,426	6,305,286	2,070,591	823,424	144,246	-
Kansas	4,212,604	1,682,324	468,913	44,190	-	-
Kentucky	8,351,728	4,006,799	1,297,836	441,208	33,885	-
Louisiana	10,798,483	6,405,966	2,574,017	1,217,233	448,978	48,395
Minnesota	8,029,671	3,112,517	740,079	51,563	-	-
Nebraska	3,220,669	1,390,081	459,634	113,834	16,292	-
New Jersey	21,724,882	10,903,446	3,330,546	1,234,703	168,151	-
New York	37,887,784	18,488,102	5,364,026	1,266,081	144,571	-
North Carolina	25,842,946	14,096,685	4,825,700	2,199,634	395,462	13,188
Pennsylvania	24,556,262	12,328,336	4,203,757	1,901,430	368,918	27,009
South Carolina	10,170,746	5,281,757	1,765,221	756,322	118,247	-
Virginia	18,811,889	9,925,722	3,422,634	1,489,446	309,580	14,851
Wisconsin	7,951,979	3,214,026	877,171	156,397	5,970	-
Total	351,442,465	181,842,432	58,874,262	22,180,897	4,596,014	147,916

133. It is important when considering the above figures and to note, for example, that the instances in which a Teen MAU spent more than 3 hours per day on average in a month are also included in the instances for those that spent more than 1 hour per day and 2 hours per day in that month. Each column above includes the figures in all columns to the right of that respective column. The above table can be used to calculate instances relating to MAUs aged 13 to 17 spending over 1 hour but less than 3 hours per day per month, on average. In

the supporting schedules appended to this report, I present the results of my calculations both

in terms of number of instances for daily average use *over* 0.5, 1, 2, 3, 4 or 5 hours, and in terms of the number of instances *between* each threshold in Schedule 2.9.1.

2. Calculation of Number of Average Daily Time Spent Instances for Facebook

134. In Schedules 2.10.3 and 2.2, I have used data produced by Meta that shows on a monthly basis for the period February 2013 to March 2024 and for the MDL States:

- a. The number of MAU on Facebook aged 13 to 17 years old.²³²
- b. The average time spent per day for Teen MAUs on Facebook, in seconds, for the 10th, 20th, 30th, 40th, 50th, 60th, 70th, 80th, 90th, 95th, and 99th percentiles.

135. This data is described in Meta's Production letters and interrogatory responses associated with the data files in META3047MDL-VOL289.²³³

136. I then performed calculations for each month using the same methodology described for Instagram, but applying the analysis to Facebook platform data.

137. Consistent with the methodology described above for Instagram, I carried the Facebook data over to Schedule 2.10.1. I have been asked by Counsel to count the number of instances that an MAU aged 13 to 17 has spent more than 0.5, 1, 2, 3 4, and 5 hours a day on average for the month. The resulting number of monthly instances where UDAP State Facebook Teen MAUs spent time above the designated thresholds between February 2013 and March 2024 is shown in the table below. In the supporting schedules appended to this report, I present the results of my calculations both in terms of number of instances for daily

²³² To compute Teen user activity, I used age_dimension_type "teen / non-teen" where available, from August 2020 to March 2024. Because Meta did not provide time spent for "teen / non-teen" users for earlier periods, I used "stated age" for the months February 2013 to July 2020.

²³³ 2025.10.10 Meta Ltr. re META3047_Vol289.pdf; Meta Defendant's Thirteenth Supplemental Responses and Objections to Plaintiff's Second Set of Interrogatories, October 10, 2025.

average use *over* 0.5, 1, 2, 3, 4 or 5 hours, and in terms of the number of instances *between* each threshold in Schedule 2.10.1.

State	0.5 Hour	1 Hour	2 Hours	3 Hours	4 Hours	5 Hours
California	21,101,517	11,546,072	4,456,690	1,768,698	173,900	-
Colorado	5,154,544	2,902,185	1,118,079	531,289	177,782	34,972
Connecticut	1,665,054	827,810	342,101	137,005	18,700	682
Delaware	403,508	215,837	88,203	37,508	5,026	123
Illinois	10,475,917	5,801,360	2,306,036	1,121,189	395,151	77,459
Indiana	5,216,216	2,780,790	1,104,151	555,317	191,583	52,238
Kansas	2,667,605	1,438,259	571,617	290,498	95,480	16,318
Kentucky	3,741,472	1,946,492	722,205	392,327	151,906	40,482
Louisiana	2,520,011	1,255,036	476,358	182,542	17,475	475
Minnesota	3,459,205	1,787,611	736,876	403,154	140,893	27,778
Nebraska	1,627,670	861,462	339,304	173,643	54,321	6,217
New Jersey	4,013,976	2,202,861	887,595	376,975	36,996	779
New York	13,680,929	8,108,491	3,240,848	1,629,405	539,250	66,004
North Carolina	6,087,115	3,270,614	1,257,017	578,222	112,289	7,507
Pennsylvania	7,274,445	3,801,447	1,507,657	754,879	226,292	36,039
South Carolina	3,645,284	2,024,494	796,178	384,452	140,328	49,757
Virginia	4,701,177	2,475,562	934,320	412,920	50,902	1,913
Wisconsin	4,741,162	2,489,091	1,000,960	528,529	224,696	74,179
Total	102,176,807	55,735,475	21,886,194	10,258,553	2,752,969	492,921

X. Calculation of Meta’s Revenues From “Affected Teens,” or Teen Users With

Average Daily Time Spent Above 0.5 Hours

1. Number of Affected Teens, by UDAP State

138. To compute Meta’s revenue from Teen Users with average daily time spent above certain time thresholds of 0.5, 1, 2, 3, 4, and 5 hours (“Affected Teens”), I begin with the number of instances of MAUs with daily average time spent above certain thresholds as described in the section above and summarized in Schedules 2.9.1 and 2.10.1 for the Instagram and Facebook platforms respectively.

2. Teen ARPU

139. Next, I compute the average revenue per user (ARPU) by month for the Instagram and Facebook platforms using Meta's production data for advertising revenue by platform. This analysis is detailed for both Instagram and Facebook in Schedules 2.8.6 and 2.8.7 respectively.

140. For Instagram, Meta produced advertising revenue by user stated age bucket for each day from January 2018 through March 2024.²³⁴ Meta did not produce advertising revenue data by users' inferred age, although I have reviewed a discovery request issued to Meta for that data. I then divide the monthly revenue for each age bucket by the associated number of MAUs within the given month.²³⁵ The result reflects the monthly ARPU for each age bucket.

141. For example, in November 2022, IG recorded monthly advertising revenue of \$14.9 million for users 13 to 17 and reported a total of 15.4 million MAUs in that age bucket. Therefore, the calculated ARPU for 13 to 17 year old users in that month is \$14.9 million divided by 15.4 million Teen MAUs, or \$0.97 per MAU.

142. I perform this same calculation for each month and age bucket for which Meta provided data for IG. From January 2018 to September 2021, Meta's user data did not break out the total IG users by stated age, although I have reviewed a discovery request issued to Meta for user data broken out by both stated and inferred age for the entire Relevant Time Period. For these months, I estimate the number of users by stated age with respect to the

²³⁴ META3047MDL-209-00000001.

²³⁵ META3047MDL-188R-00000008 and META3047MDL-188R2-00000009.

percentage of total users for each age bucket observed in the months for which Meta provided granular age data.

143. Meta did not produce data that breaks out monthly advertising revenue by the users' geographic state during the relevant time period, although I have reviewed a discovery request issued to Meta for revenue data broken down by the users' geographic region. Therefore, I apply the monthly ARPU as a nationwide average figure by age group and assume that ARPU differs across age buckets and remains relatively consistent across states for the same month and age bucket.

144. The methodology for determining ARPU for the Facebook platform is consistent with the calculation described for Instagram. I calculate ARPU from January 2018 to March 2024 by dividing Meta's produced U.S. advertising revenue by stated age²³⁶ by the associated MAUs²³⁷ for each month and age bucket.

145. From January 2013 to December 2017, FB revenue data was reported in total, but was not broken out by age,²³⁸ although I have reviewed a discovery request issued to Meta for revenue data broken out by age for the entire Relevant Time Period. For this period, I assume that the percentage of revenue by stated age is consistent with 2018 – the last year for which Meta provided detailed revenue figures by age. Using total revenue and estimated allocated percentages, I extrapolated ARPU by stated age from January 2013 to December 2017.

146. Finally, because FB revenue data was not produced by Meta for the months January 2012 to December 2012, I estimated ARPU by age and month with reference to the

²³⁶ META3047MDL-209-00000001.

²³⁷ META3047MDL-215R-00000007 – 0008 and META3047MDL-215R2-00000009.

²³⁸ META3047MDL-170-00000001.

year-over year increase observed from 2013 to 2014. In other words, revenue in 2013 was approximately 62% of revenue in 2014. Therefore, I multiplied this percentage by 2013 ARPU for each month and age group to compute 2012 ARPU. This methodology accounts for seasonality in ARPU figures while also considering Meta's annual growth as shown in Volume 170.²³⁹

3. Total Revenue, by UDAP State

147. Finally, I calculate total revenue by UDAP state and platform (FB & IG) by multiplying three figures: 1) instances of MAUs with daily average time spent above certain thresholds, 2) ARPU by month, and 3) a time spent multiplier to account for additional time spent above the average for each cohort of users.

148. Recall that ARPU is the *average* revenue per user. However, Affected Teens generally spent more time than the average user on FB and IG, and therefore presumably generated more revenue than the average user. Indeed, certain users may spend in excess of 10 times the average. Therefore, I calculate a time spent multiplier to account for increased revenue associated with a user's greater time spent. As an example of the relationship between time spent and revenue, see Paragraph 54, discussing Susan Li's testimony on this subject, As another example, Instagram outperformed its 2019 Q2 revenue goals, and Meta recognized that this was at least partially "[d]riven by higher than expected time spent on" Instagram Feed; during that same time frame, Instagram realized lower than expected revenue

²³⁹ META3047MDL-170-00000001.

from Instagram Stories, and Meta recognized that this was at least partially “[d]riven by lower organic user engagement,” including “lower time spent.”²⁴⁰

149. I compute the time spent multiplier by dividing the midpoint of each threshold (.5 hours, 1 hour, 2 hours, etc.) by the average time spent by Teens for the same state and time period. For example, in November 2020, California Teens spent an average of 2,668 seconds on Instagram. The midpoint of time spent for users with a daily average of 1 to 2 hours is 90 minutes, or 5,400 seconds. Therefore, the multiplier for this threshold is 5,400 divided by 2,668, or 2.02x. With this multiplier, monthly revenue for California Teens averaging 1 to 2 hours per day on Instagram is calculated as 2.02 times the monthly ARPU figure.²⁴¹

150. As reflected in Schedules 2.9.2 for IG, and 2.10.2 for FB, I multiply monthly instances, ARPU for 13-17 year-olds, and the time spent multiplier to calculate Meta’s revenue associated with Affected Teens for each month, state, and threshold for Instagram from February 2018 to March 2024 and for Facebook from February 2013 to March 2024.

²⁴⁰ META3047MDL-065-00471845 to –1846 at 471845.

²⁴¹ While revenue (and cost of sales) may not increase in a linear relationship with a users’ time spent, my application of this assumption is conservative in that it likely results in lower gross profits to Meta for Teens (greater gross profit losses). When users spend more time on the FB and IG platforms, it allows for more opportunities for ad impressions and clicks that will generate advertiser revenue.

151. As detailed in Section XI below and in Schedule 2.8.8, the table below reflects Meta's revenues attributable to Affected Teens for Instagram from 2013 to 2017.²⁴²

Revenue				
Teen MAU >0.5 < 1.0 Hour	Teen MAU >1.0 < 2.0 Hour	Teen MAU >2.0 < 3.0 Hour	Teen MAU > 3.0 Hour	
California	\$ 4,613,156	\$ 5,638,302	\$ 3,417,153	\$ 1,025,146
Colorado	\$ 516,147	\$ 630,846	\$ 382,331	\$ 114,699
Connecticut	\$ 365,936	\$ 447,255	\$ 271,063	\$ 81,319
Delaware	\$ 102,067	\$ 124,748	\$ 75,605	\$ 22,682
Illinois	\$ 1,330,493	\$ 1,626,159	\$ 985,551	\$ 295,665
Indiana	\$ 742,825	\$ 907,897	\$ 550,241	\$ 165,072
Kansas	\$ 283,224	\$ 346,163	\$ 209,796	\$ 62,939
Kentucky	\$ 518,795	\$ 634,082	\$ 384,292	\$ 115,288
Louisiana	\$ 484,124	\$ 591,707	\$ 358,611	\$ 107,583
Minnesota	\$ 530,100	\$ 647,900	\$ 392,667	\$ 117,800
Nebraska	\$ 206,819	\$ 252,779	\$ 153,199	\$ 45,960
New Jersey	\$ 1,003,015	\$ 1,225,907	\$ 742,974	\$ 222,892
New York	\$ 1,947,441	\$ 2,380,205	\$ 1,442,549	\$ 432,765
North Carolina	\$ 1,194,905	\$ 1,460,439	\$ 885,115	\$ 265,534
Pennsylvania	\$ 1,344,800	\$ 1,643,644	\$ 996,148	\$ 298,844
South Carolina	\$ 539,786	\$ 659,739	\$ 399,842	\$ 119,952
Virginia	\$ 904,626	\$ 1,105,654	\$ 670,093	\$ 201,028
Wisconsin	\$ 553,913	\$ 677,004	\$ 410,306	\$ 123,092
Total	\$ 17,182,170	\$ 21,000,430	\$ 12,727,533	\$ 3,818,260
Total over 0.5 Hours (Cumulative)			\$	54,728,394

152. The table below summarize Meta's revenues attributable to Affected Teens for Instagram from February 2018 to March 2024.²⁴³

State	Revenue of IG Teen MAUs With Daily Average of Between:							Total
	0.5 - 1 Hr	1 Hr - 2 Hrs	2 Hrs - 3 Hrs	3 Hrs - 4 Hrs	4 - 5 Hrs	5+ Hrs		
California	\$ 50,118,898	\$ 87,054,333	\$ 39,522,054	\$ 33,955,951	\$ 8,802,971	\$ 225,284	\$	219,679,489
Colorado	\$ 4,865,221	\$ 5,247,802	\$ 2,819,546	\$ 293,992	\$ 19,472	\$ -	\$	13,246,033
Connecticut	\$ 3,844,011	\$ 4,357,312	\$ 2,414,077	\$ 445,069	\$ -	\$ -	\$	11,060,469
Delaware	\$ 1,044,087	\$ 1,835,663	\$ 928,006	\$ 824,213	\$ 323,549	\$ 37,797	\$	4,993,315
Illinois	\$ 12,227,075	\$ 12,881,828	\$ 7,881,096	\$ 1,564,172	\$ 59,955	\$ -	\$	34,614,126
Indiana	\$ 6,539,044	\$ 8,057,962	\$ 4,189,377	\$ 3,106,108	\$ 437,238	\$ -	\$	22,329,729
Kansas	\$ 2,498,233	\$ 2,203,667	\$ 1,362,976	\$ 72,374	\$ -	\$ -	\$	6,137,250
Kentucky	\$ 4,363,520	\$ 5,171,828	\$ 2,996,293	\$ 1,637,582	\$ 116,185	\$ -	\$	14,285,408
Louisiana	\$ 4,351,555	\$ 7,690,955	\$ 4,288,424	\$ 3,876,642	\$ 2,011,174	\$ 187,603	\$	22,406,352
Minnesota	\$ 4,887,466	\$ 4,485,581	\$ 2,113,478	\$ 85,104	\$ -	\$ -	\$	11,571,628
Nebraska	\$ 1,821,136	\$ 1,744,031	\$ 1,196,279	\$ 319,310	\$ 29,520	\$ -	\$	5,110,275
New Jersey	\$ 10,806,651	\$ 14,452,810	\$ 7,010,325	\$ 4,430,380	\$ 688,801	\$ -	\$	37,388,968
New York	\$ 19,222,087	\$ 24,449,438	\$ 13,717,673	\$ 3,567,859	\$ 205,857	\$ -	\$	61,162,914
North Carolina	\$ 11,648,194	\$ 18,099,926	\$ 8,226,817	\$ 8,633,866	\$ 1,397,318	\$ 79,411	\$	48,085,532
Pennsylvania	\$ 12,171,100	\$ 15,547,170	\$ 7,842,943	\$ 6,654,660	\$ 1,382,328	\$ 98,293	\$	43,696,494
South Carolina	\$ 4,857,005	\$ 6,686,682	\$ 3,298,664	\$ 2,833,234	\$ 397,702	\$ -	\$	18,073,288
Virginia	\$ 8,858,043	\$ 12,503,051	\$ 6,360,513	\$ 5,240,248	\$ 1,114,256	\$ 73,180	\$	34,149,291
Wisconsin	\$ 4,678,925	\$ 4,367,933	\$ 2,300,372	\$ 399,677	\$ 7,066	\$ -	\$	11,753,974
Total	\$ 168,802,248	\$ 236,837,973	\$ 118,468,913	\$ 77,940,442	\$ 16,993,392	\$ 701,567	\$	619,744,535

153. The table below reflects Meta's revenues attributable to Affected Teens for Facebook from February 2013 to March 2024.²⁴⁴

State	Revenue of FB Teen MAUs With Daily Average of Between:							Total
	0.5 - 1 Hr	1 Hr - 2 Hrs	2 Hrs - 3 Hrs	3 Hrs - 4 Hrs	4 - 5 Hrs	5+ Hrs	-	
California	\$ 8,217,919	\$ 12,424,876	\$ 8,501,929	\$ 8,354,245	\$ 1,197,356	\$ -	\$ -	\$ 38,696,326
Colorado	\$ 1,494,420	\$ 2,563,881	\$ 1,435,296	\$ 1,304,998	\$ 821,154	\$ 278,495	\$ -	\$ 7,898,243
Connecticut	\$ 867,091	\$ 1,067,633	\$ 825,482	\$ 780,631	\$ 154,651	\$ 4,863	\$ -	\$ 3,700,352
Delaware	\$ 197,070	\$ 272,310	\$ 195,745	\$ 184,240	\$ 41,182	\$ 2,044	\$ -	\$ 892,590
Illinois	\$ 3,383,906	\$ 5,401,665	\$ 3,113,651	\$ 2,881,521	\$ 1,944,123	\$ 602,609	\$ -	\$ 17,327,476
Indiana	\$ 1,985,608	\$ 2,779,563	\$ 1,521,798	\$ 1,534,709	\$ 936,050	\$ 466,644	\$ -	\$ 9,224,373
Kansas	\$ 978,030	\$ 1,427,097	\$ 780,337	\$ 792,879	\$ 511,346	\$ 131,482	\$ -	\$ 4,621,172
Kentucky	\$ 1,422,874	\$ 1,965,688	\$ 871,207	\$ 990,345	\$ 652,007	\$ 303,581	\$ -	\$ 6,205,702
Louisiana	\$ 1,266,320	\$ 1,587,646	\$ 1,042,436	\$ 912,956	\$ 152,232	\$ 3,614	\$ -	\$ 4,965,204
Minnesota	\$ 1,498,300	\$ 1,959,103	\$ 1,025,057	\$ 1,277,959	\$ 897,810	\$ 294,631	\$ -	\$ 6,952,861
Nebraska	\$ 643,028	\$ 913,232	\$ 491,157	\$ 547,554	\$ 321,861	\$ 60,582	\$ -	\$ 2,977,414
New Jersey	\$ 1,805,776	\$ 2,681,807	\$ 1,868,206	\$ 1,985,274	\$ 242,670	\$ 4,459	\$ -	\$ 8,588,193
New York	\$ 3,915,169	\$ 7,218,695	\$ 4,030,039	\$ 4,078,833	\$ 2,883,282	\$ 559,821	\$ -	\$ 22,685,839
North Carolina	\$ 2,559,691	\$ 3,675,590	\$ 2,154,722	\$ 2,326,924	\$ 763,096	\$ 64,080	\$ -	\$ 11,544,103
Pennsylvania	\$ 2,968,566	\$ 4,027,116	\$ 2,225,451	\$ 2,497,017	\$ 1,475,565	\$ 361,060	\$ -	\$ 13,554,774
South Carolina	\$ 1,233,148	\$ 1,967,713	\$ 1,116,845	\$ 990,000	\$ 598,201	\$ 367,645	\$ -	\$ 6,273,551
Virginia	\$ 2,065,124	\$ 2,965,992	\$ 1,721,630	\$ 1,944,922	\$ 397,955	\$ 24,910	\$ -	\$ 9,120,533
Wisconsin	\$ 1,672,056	\$ 2,353,270	\$ 1,254,339	\$ 1,275,153	\$ 970,739	\$ 625,289	\$ -	\$ 8,150,845
Total	\$ 38,174,094	\$ 57,252,879	\$ 34,175,328	\$ 34,660,161	\$ 14,961,281	\$ 4,155,808	\$ -	\$ 183,379,552

154. Meta's revenues are \$858 million for Affected Teens that averaged more than 0.5 hours per day during the Relevant Time Period.

XI. Calculation of Meta's Gross Profits From Teens Users With Average Daily Time Spent Above 0.5 Hours

155. In this section, I describe the methodology used to compute costs²⁴⁵ related to Meta's revenues and associated gross profits from Teens with average daily time spent above 0.5 hours. Because Meta produced cost data quarterly rather than monthly, I begin by apportioning Meta's costs across Instagram and Facebook by quarter. Next, I compute costs per MAU. I Then calculate costs per MAU for Teen and adult users. Finally, I apply these

²⁴² Schedule 2.8.8.

²⁴³ Schedule 2.9.1.

²⁴⁴ Schedule 2.10.1.

²⁴⁵ Cost of Revenue in Meta's 10-K filings, labeled as COGS (Cost of Goods Sold) in Volume 209, where the data was drawn from. COGS in Volume 209 reconciles with Cost of Revenue in Meta's 10-K filings.

costs to the revenues to determine gross profits for Affected Teens with daily average time spent above certain specified amounts of time.

1. Apportionment for Meta's Costs

156. I begin this analysis by apportioning costs between Instagram and Facebook using quarterly U.S. cost data produced by Meta.²⁴⁶ For each quarter and platform, Meta identified direct platform costs, shared costs, and costs not related to Instagram and Facebook ("Other").

157. With this data, I calculate shared costs to be allocated across Instagram, Facebook, and Other platforms based on the pro-rata share of reported North America quarterly advertising revenue.²⁴⁷ This is a common methodology for allocating shared costs as it aligns shared costs in proportion to each platform's contribution to total revenue. For example, in the first quarter of 2024, North America advertising revenue was split between Facebook (67.0%), Instagram (32.4%), and Other (0.6%).

158. I then compute the shared costs and allocate to Instagram and Facebook. Total costs for each platform are computed as each platform's direct costs plus its pro rata share of shared costs.

159. Next, I compute costs per MAU by dividing total quarterly costs for each platform by the total MAUs for the quarter. The value represents an average cost per MAU for Instagram and Facebook, without breaking out between Teen and Adult.

²⁴⁶ META3047MDL-290-00000001.

²⁴⁷ North America is reported in Meta's public filings and includes U.S. and Canada. U.S. represents the vast majority of total North America advertising revenue with Canada representing a small minority of the total. Therefore, it is reasonable to assume the relative proportions of advertising revenue are similar between U.S. and North America. It is necessary to allocate using North America because Meta did not provide quarterly revenue data for platforms other than Instagram and Facebook.

160. I then calculate Instagram and Facebook quarterly costs per user for both Teens and adults. Starting with the average costs per user computed in the last step, I adjust the cost figure relative to the weighted average time spent for Teens and adults. For example, in Q1 2024, the weighted average time spent on Instagram for all MAUs was 1,563 seconds. For this quarter, Teens spent an average of 2,194 seconds, or 140% of the MAU average, while adults spent an average of 1,466 seconds, or 94% of the MAU average.

161. Finally, I multiply average costs per user by the relative percentage of time spent for Teens and adults to calculate quarterly U.S. Costs per Teen and adult. Following the example, in Q1 2024, the average U.S. cost per IG user was \$6.53. I multiplied \$6.53 and 140% to determine that Instagram U.S. costs per Teen MAU in Q1 2024 was \$9.17.²⁴⁸ Likewise, I multiplied \$6.53 and 94% to determine that Instagram U.S. costs per adult MAU in Q1 2024 was \$6.13.

162. I apply this methodology for Instagram from Q1 2018 to Q1 2024 and for Facebook from Q1 2013 to Q1 2024. I was unable to perform this calculation for Instagram prior to 2018 because Meta's production data did not show monthly active users in earlier periods.²⁴⁹

2. Apportionment of Cost Related to Meta's Revenues

163. As a final step, I apportion costs related to Teen users with daily average time spent above the specified thresholds by platform, month, and state. These calculations are

²⁴⁸ I conservatively increase costs for average Teens in a linear manner with time spent above the average of all users, using a similar assumption as I did for revenue in the previous section. This results in a lower gross margin for Teens (gross margin loss) than if I had not assumed a linear relationship.

²⁴⁹ Schedule 2.1, META3047MDL-188R-00000008 and META3047MDL-188R2-00000009.

described below, and detailed in Schedules 2.9.2 and 2.10.2 for Instagram and Facebook respectively.

164. Consistent with the methodology used to apportion revenues (described in Section X above), I calculate costs by UDAP State and platform by multiplying three figures: 1) instances of MAUs with daily average time spent above certain thresholds, 2) U.S. costs per Teen, and 3) the time spent multiplier²⁵⁰ to account for additional time spent above the average for each cohort of users. The table below reflects the costs from February 2018 to March 2024 associated with Instagram Teen users with time spent above certain thresholds.²⁵¹

State	COGS of IG Teen MAUs With Daily Average of Between:						
	0.5 - 1 Hr	1 Hr - 2 Hrs	2 Hrs - 3 Hrs	3 Hrs - 4 Hrs	4 - 5 Hrs	5+ Hrs	Total
California	\$ 113,307,987	\$ 201,585,525	\$ 101,113,230	\$ 82,185,443	\$ 34,209,155	\$ 443,708	\$ 532,845,047
Colorado	\$ 10,937,794	\$ 12,658,657	\$ 7,054,935	\$ 1,813,548	\$ 334,464	-	\$ 32,799,398
Connecticut	\$ 8,337,709	\$ 9,822,427	\$ 5,471,093	\$ 1,824,007	-	-	\$ 25,455,235
Delaware	\$ 2,404,724	\$ 4,247,023	\$ 2,239,282	\$ 1,874,937	\$ 887,332	\$ 138,561	\$ 11,791,859
Illinois	\$ 27,041,430	\$ 31,211,049	\$ 19,074,918	\$ 6,910,059	\$ 1,007,725	-	\$ 85,245,181
Indiana	\$ 14,217,442	\$ 18,784,788	\$ 9,820,081	\$ 8,021,623	\$ 2,185,745	-	\$ 53,029,679
Kansas	\$ 5,624,873	\$ 5,451,386	\$ 3,516,616	\$ 602,626	-	-	\$ 15,195,501
Kentucky	\$ 9,256,520	\$ 11,497,184	\$ 6,567,853	\$ 4,568,483	\$ 465,916	-	\$ 32,355,956
Louisiana	\$ 10,111,318	\$ 18,307,915	\$ 10,848,962	\$ 8,932,533	\$ 5,713,601	\$ 625,853	\$ 54,540,182
Minnesota	\$ 10,622,395	\$ 10,343,097	\$ 5,447,225	\$ 763,809	-	-	\$ 27,176,526
Nebraska	\$ 4,003,327	\$ 4,241,929	\$ 2,806,617	\$ 1,215,445	\$ 322,054	-	\$ 12,589,372
New Jersey	\$ 23,849,082	\$ 33,250,883	\$ 16,624,939	\$ 12,366,117	\$ 2,221,870	-	\$ 88,312,890
New York	\$ 42,783,767	\$ 58,355,828	\$ 33,149,272	\$ 13,412,264	\$ 2,671,253	-	\$ 150,372,385
North Carolina	\$ 25,912,162	\$ 41,880,003	\$ 20,353,805	\$ 20,339,755	\$ 5,500,412	\$ 265,254	\$ 114,251,391
Pennsylvania	\$ 26,271,410	\$ 35,093,582	\$ 17,944,610	\$ 15,782,966	\$ 4,201,644	\$ 271,946	\$ 99,566,158
South Carolina	\$ 10,820,501	\$ 15,887,543	\$ 8,089,632	\$ 7,531,635	\$ 1,749,789	-	\$ 44,079,101
Virginia	\$ 19,683,027	\$ 29,050,242	\$ 15,024,171	\$ 13,076,484	\$ 3,773,215	\$ 183,653	\$ 80,790,793
Wisconsin	\$ 10,125,121	\$ 10,407,694	\$ 5,933,129	\$ 2,244,891	\$ 117,109	-	\$ 28,827,944
Total	\$ 375,310,589	\$ 552,076,755	\$ 291,080,371	\$ 203,466,624	\$ 65,361,285	\$ 1,928,975	\$ 1,489,224,599

165. COGS for Instagram Teens for years 2013 to 2017 are calculated in Schedules 2.8.1 through 2.8.5.

²⁵⁰ Same multiplier as that calculated for revenue in the previous section. I assume that Affected Teens' revenues and costs increase in a linear manner to time spent. While the actual relationship might not be linear, this assumption likely results in a lower gross margin for Teens (gross margin loss) than if I had not assumed a linear relationship.

²⁵¹ Schedule 2.9.1.

166. The table below reflects the costs from February 2013 to March 2024 associated with Facebook Teen users with time spent above certain thresholds.²⁵²

COGS of FB Teen MAUs With Daily Average of Between:							
State	0.5 - 1 Hr	1 Hr - 2 Hrs	2 Hrs - 3 Hrs	3 Hrs - 4 Hrs	4 - 5 Hrs	5+ Hrs	Total
California	\$ 24,636,063	\$ 39,363,693	\$ 24,666,669	\$ 24,275,646	\$ 3,762,120	\$ -	\$ 116,704,190
Colorado	\$ 4,518,494	\$ 7,132,014	\$ 3,848,201	\$ 3,966,947	\$ 1,640,217	\$ 485,554	\$ 21,591,427
Connecticut	\$ 2,538,013	\$ 3,104,977	\$ 2,285,408	\$ 2,049,773	\$ 354,627	\$ 9,167	\$ 10,341,966
Delaware	\$ 589,882	\$ 838,503	\$ 568,924	\$ 546,740	\$ 101,071	\$ 2,990	\$ 2,648,110
Illinois	\$ 10,711,832	\$ 15,341,565	\$ 8,815,105	\$ 8,974,079	\$ 3,561,374	\$ 992,092	\$ 48,396,048
Indiana	\$ 6,284,814	\$ 8,172,235	\$ 4,532,846	\$ 4,942,726	\$ 1,886,769	\$ 785,924	\$ 26,605,313
Kansas	\$ 3,045,918	\$ 4,117,654	\$ 2,254,078	\$ 2,536,743	\$ 1,099,593	\$ 227,042	\$ 13,281,029
Kentucky	\$ 4,591,837	\$ 6,156,212	\$ 2,653,406	\$ 3,048,193	\$ 1,966,116	\$ 698,520	\$ 19,114,284
Louisiana	\$ 4,071,405	\$ 4,991,001	\$ 3,207,302	\$ 2,639,717	\$ 259,433	\$ 6,469	\$ 15,175,326
Minnesota	\$ 4,512,653	\$ 5,645,998	\$ 3,020,442	\$ 3,816,850	\$ 2,189,092	\$ 508,441	\$ 19,693,476
Nebraska	\$ 1,893,805	\$ 2,573,222	\$ 1,404,474	\$ 1,626,457	\$ 816,364	\$ 102,961	\$ 8,417,284
New Jersey	\$ 5,267,275	\$ 8,256,946	\$ 5,309,394	\$ 5,483,078	\$ 663,966	\$ 8,412	\$ 24,989,070
New York	\$ 12,407,225	\$ 21,885,094	\$ 11,769,384	\$ 12,424,059	\$ 6,347,297	\$ 940,717	\$ 65,773,777
North Carolina	\$ 7,903,550	\$ 11,417,288	\$ 6,571,324	\$ 7,001,413	\$ 1,687,659	\$ 91,037	\$ 34,672,271
Pennsylvania	\$ 9,433,130	\$ 11,636,369	\$ 6,900,777	\$ 7,610,105	\$ 2,534,318	\$ 668,875	\$ 38,783,574
South Carolina	\$ 4,068,358	\$ 6,055,654	\$ 3,328,157	\$ 3,293,913	\$ 1,031,103	\$ 576,312	\$ 18,353,496
Virginia	\$ 6,379,594	\$ 8,920,818	\$ 5,103,301	\$ 5,434,677	\$ 715,714	\$ 41,298	\$ 26,595,402
Wisconsin	\$ 5,266,077	\$ 6,741,874	\$ 3,849,375	\$ 3,872,023	\$ 1,910,246	\$ 1,125,925	\$ 22,765,519
Total	\$ 118,119,924	\$ 172,351,115	\$ 100,088,566	\$ 103,543,138	\$ 32,527,080	\$ 7,271,738	\$ 533,901,561

167. Meta's gross profits are calculated for each state, month, and platform as relevant revenues less apportioned costs. The table below reflects the gross profits from February 2018 to March 2024 associated with Instagram Teen users with time spent above certain thresholds.²⁵³

Gross Profit of IG Teen MAUs With Daily Average of Between:							
State	0.5 - 1 Hr	1 Hr - 2 Hrs	2 Hrs - 3 Hrs	3 Hrs - 4 Hrs	4 - 5 Hrs	5+ Hrs	Total
California	\$ (63,189,089)	\$ (114,531,192)	\$ (61,591,176)	\$ (48,229,492)	\$ (25,406,185)	\$ (218,424)	\$ (313,165,558)
Colorado	\$ (6,072,573)	\$ (7,410,855)	\$ (4,235,390)	\$ (1,519,556)	\$ (314,991)	\$ -	\$ (19,553,366)
Connecticut	\$ (4,493,697)	\$ (5,465,115)	\$ (3,057,016)	\$ (1,378,938)	\$ -	\$ -	\$ (14,394,766)
Delaware	\$ (1,360,637)	\$ (2,411,360)	\$ (1,311,276)	\$ (1,050,724)	\$ (563,783)	\$ (100,764)	\$ (6,798,543)
Illinois	\$ (14,814,355)	\$ (18,329,221)	\$ (11,193,822)	\$ (5,345,887)	\$ (947,770)	\$ -	\$ (50,631,055)
Indiana	\$ (7,678,398)	\$ (10,726,825)	\$ (5,630,704)	\$ (4,915,515)	\$ (1,748,508)	\$ -	\$ (30,699,950)
Kansas	\$ (3,126,641)	\$ (3,247,718)	\$ (2,153,640)	\$ (530,252)	\$ -	\$ -	\$ (9,058,251)
Kentucky	\$ (4,893,000)	\$ (6,325,356)	\$ (3,571,560)	\$ (2,930,901)	\$ (349,731)	\$ -	\$ (18,070,548)
Louisiana	\$ (5,759,763)	\$ (10,616,960)	\$ (6,560,538)	\$ (5,055,891)	\$ (3,702,428)	\$ (438,250)	\$ (32,133,830)
Minnesota	\$ (5,734,930)	\$ (5,857,516)	\$ (3,333,747)	\$ (678,705)	\$ -	\$ -	\$ (15,604,898)
Nebraska	\$ (2,182,191)	\$ (2,497,898)	\$ (1,610,338)	\$ (896,135)	\$ (292,535)	\$ -	\$ (7,479,097)
New Jersey	\$ (13,042,431)	\$ (18,798,073)	\$ (9,614,614)	\$ (7,935,737)	\$ (1,533,069)	\$ -	\$ (50,923,923)
New York	\$ (23,561,680)	\$ (33,906,390)	\$ (19,431,599)	\$ (9,844,405)	\$ (2,465,396)	\$ -	\$ (89,209,470)
North Carolina	\$ (14,263,969)	\$ (23,780,078)	\$ (12,126,988)	\$ (11,705,889)	\$ (4,103,094)	\$ (185,842)	\$ (66,165,859)
Pennsylvania	\$ (14,100,310)	\$ (19,546,413)	\$ (10,101,667)	\$ (9,128,306)	\$ (2,819,315)	\$ (173,653)	\$ (55,869,664)
South Carolina	\$ (5,963,496)	\$ (9,200,861)	\$ (4,790,969)	\$ (4,698,400)	\$ (1,352,087)	\$ -	\$ (26,005,813)
Virginia	\$ (10,824,984)	\$ (16,547,191)	\$ (8,663,658)	\$ (7,836,236)	\$ (2,658,959)	\$ (110,474)	\$ (46,641,502)
Wisconsin	\$ (5,446,196)	\$ (6,039,761)	\$ (3,632,756)	\$ (1,845,214)	\$ (110,043)	\$ -	\$ (17,073,970)
Total	\$ (206,508,341)	\$ (315,238,782)	\$ (172,611,458)	\$ (125,526,182)	\$ (48,367,893)	\$ (1,227,408)	\$ (869,480,063)

²⁵² Schedule 2.10.1.

²⁵³ Schedule 2.9.1

168. The table below reflects the gross profits from February 2013 to March 2024 associated with Facebook Teen users with time spent above certain thresholds.²⁵⁴

State	Gross Profit of FB Teen MAUs With Daily Average of Between:						
	0.5 - 1 Hr	1 Hr - 2 Hrs	2 Hrs - 3 Hrs	3 Hrs - 4 Hrs	4 - 5 Hrs	5+ Hrs	Total
California	\$ (16,418,144)	\$ (26,938,816)	\$ (16,164,740)	\$ (15,921,401)	\$ (2,564,763)	\$ -	\$ (78,007,864)
Colorado	\$ (3,024,074)	\$ (4,568,132)	\$ (2,412,905)	\$ (2,661,949)	\$ (819,063)	\$ (207,060)	\$ (13,693,184)
Connecticut	\$ (1,670,922)	\$ (2,037,344)	\$ (1,459,926)	\$ (1,269,142)	\$ (199,976)	\$ (4,304)	\$ (6,641,614)
Delaware	\$ (392,812)	\$ (566,194)	\$ (373,178)	\$ (362,500)	\$ (59,890)	\$ (946)	\$ (1,755,520)
Illinois	\$ (7,327,925)	\$ (9,939,901)	\$ (5,701,454)	\$ (6,092,558)	\$ (1,617,251)	\$ (389,483)	\$ (31,068,572)
Indiana	\$ (4,299,206)	\$ (5,392,671)	\$ (3,011,048)	\$ (3,408,017)	\$ (950,718)	\$ (319,280)	\$ (17,380,940)
Kansas	\$ (2,067,887)	\$ (2,690,557)	\$ (1,473,741)	\$ (1,743,864)	\$ (588,247)	\$ (95,560)	\$ (8,659,857)
Kentucky	\$ (3,168,963)	\$ (4,190,524)	\$ (1,782,199)	\$ (2,057,847)	\$ (1,314,109)	\$ (394,940)	\$ (12,908,581)
Louisiana	\$ (2,805,084)	\$ (3,403,355)	\$ (2,164,866)	\$ (1,726,760)	\$ (107,202)	\$ (2,855)	\$ (10,210,122)
Minnesota	\$ (3,014,353)	\$ (3,686,894)	\$ (1,995,385)	\$ (2,538,891)	\$ (1,291,282)	\$ (213,810)	\$ (12,740,615)
Nebraska	\$ (1,250,777)	\$ (1,659,990)	\$ (913,317)	\$ (1,078,903)	\$ (494,503)	\$ (42,379)	\$ (5,439,869)
New Jersey	\$ (3,461,499)	\$ (5,575,138)	\$ (3,441,189)	\$ (3,497,803)	\$ (421,295)	\$ (3,953)	\$ (16,400,877)
New York	\$ (8,492,057)	\$ (14,666,399)	\$ (7,739,346)	\$ (8,345,226)	\$ (3,464,015)	\$ (380,896)	\$ (43,087,939)
North Carolina	\$ (5,343,860)	\$ (7,741,698)	\$ (4,416,601)	\$ (4,674,489)	\$ (924,563)	\$ (26,956)	\$ (23,128,168)
Pennsylvania	\$ (6,464,564)	\$ (7,609,253)	\$ (4,675,326)	\$ (5,113,088)	\$ (1,058,753)	\$ (307,815)	\$ (25,228,800)
South Carolina	\$ (2,835,211)	\$ (4,087,940)	\$ (2,211,312)	\$ (2,303,914)	\$ (432,902)	\$ (208,667)	\$ (12,079,945)
Virginia	\$ (4,314,470)	\$ (5,954,826)	\$ (3,381,670)	\$ (3,489,754)	\$ (317,759)	\$ (16,388)	\$ (17,474,868)
Wisconsin	\$ (3,594,021)	\$ (4,388,604)	\$ (2,595,036)	\$ (2,596,870)	\$ (939,507)	\$ (500,636)	\$ (14,614,674)
Total	\$ (79,945,830)	\$ (115,098,236)	\$ (65,913,238)	\$ (68,882,977)	\$ (17,565,799)	\$ (3,115,930)	\$ (350,522,010)

3. Calculation of Instances of Monthly Time Spent, Revenues and Gross Profits for Instagram Teens from 2012 - 2017

169. As explained earlier in this report, Meta did not provide certain requested information for purposes of my calculations. I do not have user counts or time spent data by percentiles for Instagram Teens between 2012 – 2017. I have been asked by Counsel to provide an estimate for instances of time spent above 0.5, 1, 2, and 3 hours by Teens during this time period (2012 -2017), and to calculate associated revenues and gross profit to Meta using best available data. I describe my methodology in this section for calculations contained in Schedules 2.8.1 through 2.8.5. Each schedule corresponds to a year, starting with 2013 and ending with 2017. I did not prepare a calculation for 2012, as Instagram did not report any revenue in that year.

170. I begin with Schedule 2.3.6, where I summarize at the top Instagram's revenues between 2013 and 2017, which are drawn from Volume 170. I then estimate the number of

²⁵⁴ Schedule 2.10.1

Instagram MAUs for the missing time periods, years 2012 – 2017. A presentation by Meta in the FTC case shows that Facebook’s US MAU grew from 159 million to 236 million between 2012 and 2022, and Instagram’s US MAU grew from 3.9 million to 217 million during the same time period.²⁵⁵ I was able to corroborate the FB 2012 and 2022 figures and IG 2022 figures with the MAU data that was provided by Meta.²⁵⁶ Based on this reconciliation, I assumed the IG 3.9 million US MAU to be accurate for 2012. I located additional details on IG US MAU counts in another document in the FTC case, which demonstrated that IG US MAU grew from approximately 3.9 million to approximately 22 million users between March 2012, and September 2012.²⁵⁷ I adopted the midpoint of 12.95 million MAUs as the average for 2012. I was able to locate additional information that IG had 141 million US MAUs in early 2018, which reconciled with the MAU data sets that Meta provided. This document stated that US MAUs had grown by 24.4 million in the last year.²⁵⁸ I deducted this figure from my US MAU counts in mid-2018 to derive an estimate of 126.4 million average MAUs in 2017.

171. In order to estimate US IG MAUs between 2013 and 2016, I analyzed Instagram’s revenue growth pattern during 2013 to 2017, and noted that on average, each successive year’s revenues growth at half the rate of the prior year. I applied the same assumption that

²⁵⁵ Meta’s Opening Statement, FTC v. Meta Platforms, Inc. Case No. 1:20-cv-03590-JEB, April 14, 2025. DDX1.1 to 77 at DDX1.11.

²⁵⁶ META3047MDL-215R-00000007, META3047MDL-215R-00000008 and META3047MDL-215R2-00000009. META3047MDL-188R-00000008 and META3047MDL-188R2-00000009. Facebook MAUs are modestly higher at 166 million in early 2012 vs. 159 million.

²⁵⁷ PDX0090 at PDX0090 – 158.

²⁵⁸ META3047MDL-050-00284665 At 4691.

user count growth between 2013 and 2017 should be approximately half the rate of the prior year in each successive year. This resulted in estimated US IG MAU counts for 2013 to 2016.

172. Based on IG's US revenues, and estimated MAU counts for 2013 – 2017, I calculated an annual ARPU per MAU for each year. I then estimated the ARPU per MAU for the same years for both Teens and young adults (18-24) by applying the average ratio between ARPU per MAU for all users to that of these stated age groups for 2018-2022 to years 2013 – 2017.

173. I then multiplied estimated US Teen Maps for each year in Schedule 2.5 by a user to person multiplier of 3.5 (Schedule 2.8.1) to derive an estimate of US Teen MAUs on IG. These MAUs were then apportioned to the UDAP States claims based on their relative percentage of total US MAU between 2018 – 2021. Of those apportioned MAUs, I calculated how were over 0.5, 1, 2, and 3 hours of average daily time spent. The percentage estimates were approximately equal to the averages for the same states in 2018 – 2021, where I had data to make the calculations.²⁵⁹ I then calculated the corresponding MAUs for each time spent category and for each state. The final step was multiplying this amount by 12 to calculate the total monthly instances in each year.

174. To calculate the corresponding revenue for the above Teens between 2012 – 2017, I multiplied the estimated MAUs by the annual ARPU per MAU for each year. I then applied a time adjustment factor to again account for the Affected Teens spending more time on the IG platform than the average Teen. I then allocated costs in a similar manner using the same cost data described in the preceding section for IG, with a time adjustment factor. This

²⁵⁹ 34% > 0.5 hours, 16% > 1 hour, 5% > 2 hours, 1% (rounded) > 3 hours.

resulted in a calculated gross margin for the Affected Teens. The resulting figures for instances of time spent, revenues, and gross margin for Affected Teens for IG between 2013 – 2017 are shown in Schedule 2.8.8 and below.

	Instances			
	Teen MAU >0.5 < 1.0 Hour	Teen MAU >1.0 < 2.0 Hour	Teen MAU >2.0 < 3.0 Hour	Teen MAU > 3.0 Hour
California	27,329,789	16,701,537	6,073,286	1,518,322
Colorado	3,057,815	1,868,665	679,515	169,879
Connecticut	2,167,918	1,324,839	481,760	120,440
Delaware	604,676	369,524	134,372	33,593
Illinois	7,882,262	4,816,938	1,751,614	437,903
Indiana	4,400,729	2,689,335	977,940	244,485
Kansas	1,677,911	1,025,390	372,869	93,217
Kentucky	3,073,503	1,878,252	683,001	170,750
Louisiana	2,868,104	1,752,730	637,357	159,339
Minnesota	3,140,480	1,919,182	697,884	174,471
Nebraska	1,225,260	748,770	272,280	68,070
New Jersey	5,942,174	3,631,329	1,320,483	330,121
New York	11,537,253	7,050,543	2,563,834	640,958
North Carolina	7,078,993	4,326,051	1,573,109	393,277
Pennsylvania	7,967,017	4,868,733	1,770,448	442,612
South Carolina	3,197,863	1,954,250	710,636	177,659
Virginia	5,359,288	3,275,121	1,190,953	297,738
Wisconsin	3,281,552	2,005,393	729,234	182,308
Total	101,792,588	62,206,582	22,620,575	5,655,144
Total over 0.5 Hours (Cumulative)				192,274,889

Sources and Notes

Schedules 2.8.1, 2.8.2, 2.8.3, 2.8.4, 2.8.5.

	Revenue			
	Teen MAU >0.5 < 1.0 Hour	Teen MAU >1.0 < 2.0 Hour	Teen MAU >2.0 < 3.0 Hour	Teen MAU > 3.0 Hour
California	\$ 4,613,156	\$ 5,638,302	\$ 3,417,153	\$ 1,025,146
Colorado	\$ 516,147	\$ 630,846	\$ 382,331	\$ 114,699
Connecticut	\$ 365,936	\$ 447,255	\$ 271,063	\$ 81,319
Delaware	\$ 102,067	\$ 124,748	\$ 75,605	\$ 22,682
Illinois	\$ 1,330,493	\$ 1,626,159	\$ 985,551	\$ 295,665
Indiana	\$ 742,825	\$ 907,897	\$ 550,241	\$ 165,072
Kansas	\$ 283,224	\$ 346,163	\$ 209,796	\$ 62,939
Kentucky	\$ 518,795	\$ 634,082	\$ 384,292	\$ 115,288
Louisiana	\$ 484,124	\$ 591,707	\$ 358,611	\$ 107,583
Minnesota	\$ 530,100	\$ 647,900	\$ 392,667	\$ 117,800
Nebraska	\$ 206,819	\$ 252,779	\$ 153,199	\$ 45,960
New Jersey	\$ 1,003,015	\$ 1,225,907	\$ 742,974	\$ 222,892
New York	\$ 1,947,441	\$ 2,380,205	\$ 1,442,549	\$ 432,765
North Carolina	\$ 1,194,905	\$ 1,460,439	\$ 885,115	\$ 265,534
Pennsylvania	\$ 1,344,800	\$ 1,643,644	\$ 996,148	\$ 298,844
South Carolina	\$ 539,786	\$ 659,739	\$ 399,842	\$ 119,952
Virginia	\$ 904,626	\$ 1,105,654	\$ 670,093	\$ 201,028
Wisconsin	\$ 553,913	\$ 677,004	\$ 410,306	\$ 123,092
Total	\$ 17,182,170	\$ 21,000,430	\$ 12,727,533	\$ 3,818,260
Total over 0.5 Hours (Cumulative)				\$ 54,728,394

Gross Profits				
	Teen MAU >0.5 < 1.0 Hour	Teen MAU >1.0 < 2.0 Hour	Teen MAU >2.0 < 3.0 Hour	Teen MAU > 3.0 Hour
California	\$ (2,350,218)	\$ (2,872,488)	\$ (1,740,902)	\$ (522,271)
Colorado	\$ (262,956)	\$ (321,391)	\$ (194,782)	\$ (58,435)
Connecticut	\$ (186,430)	\$ (227,858)	\$ (138,096)	\$ (41,429)
Delaware	\$ (51,999)	\$ (63,554)	\$ (38,518)	\$ (11,555)
Illinois	\$ (677,833)	\$ (828,463)	\$ (502,099)	\$ (150,630)
Indiana	\$ (378,440)	\$ (462,537)	\$ (280,326)	\$ (84,098)
Kansas	\$ (144,291)	\$ (176,356)	\$ (106,883)	\$ (32,065)
Kentucky	\$ (264,305)	\$ (323,040)	\$ (195,782)	\$ (58,734)
Louisiana	\$ (246,642)	\$ (301,451)	\$ (182,698)	\$ (54,809)
Minnesota	\$ (270,065)	\$ (330,079)	\$ (200,048)	\$ (60,014)
Nebraska	\$ (105,366)	\$ (128,781)	\$ (78,049)	\$ (23,415)
New Jersey	\$ (510,996)	\$ (624,550)	\$ (378,515)	\$ (113,555)
New York	\$ (992,143)	\$ (1,212,619)	\$ (734,921)	\$ (220,476)
North Carolina	\$ (608,756)	\$ (744,035)	\$ (450,930)	\$ (135,279)
Pennsylvania	\$ (685,121)	\$ (837,371)	\$ (507,497)	\$ (152,249)
South Carolina	\$ (274,999)	\$ (336,110)	\$ (203,703)	\$ (61,111)
Virginia	\$ (460,871)	\$ (563,286)	\$ (341,386)	\$ (102,416)
Wisconsin	\$ (282,196)	\$ (344,906)	\$ (209,034)	\$ (62,710)
Total	\$ (8,753,626)	\$ (10,698,877)	\$ (6,484,168)	\$ (1,945,250)
Total over 0.5 Hours (Cumulative)				\$ (27,881,921)

XII. Calculation of Meta's Gross Profits from Aged-Up Teens During Relevant Time

Period

175. I have estimated Meta's Profits From Aged-Up Teens related to teen MAUs who spent more than 0.5 hours of average daily time on Instagram and Facebook from the year they turned 18 during the Relevant Time Period through March 31, 2024.

1. Methodology

176. In estimating Profits From Aged-Up Teens, I performed the following steps, for each state during the Relevant Time Period, for Instagram and Facebook, in the 4.2 and 4.3 series of schedules, respectively.

177. I carried-over to Schedules 4.2.1 and 4.3.1 previously calculated average monthly time-spent and MAU data, from Schedules 2.9.3 and 2.10.3.

178. I estimated the number of 13-17 year-olds, in each state in each year, as shown in Schedules 4.2.4 and 4.3.4, respectively. For Instagram, the data used to estimate time-spent

did not contain age in single years which would have allowed me to estimate the number 17 year-old MAU without relying on other data sources in production, although I have reviewed a discovery request issued to Meta for time spent data broken down by single-year inferred and stated age throughout the Relevant Time Period. I thus used data contained in META3047MDL-188R-00000008 and META3047MDL-188R2-00000009 to estimate the 17 year-olds as a percentage of 13 to 17 year-old MAU. This calculation is initially performed in Schedule 2.3 carried over to Schedule 4.2.4. I then applied my estimate of the percentage of 17 year-old MAU to 13-17 year-old MAU from time-spent data, and averaged for each period. This was done for each relevant state and year.

179. Again, for Facebook, for periods after July 2020, the data used to estimate time-spent did not contain age in single years, which would have allowed me to estimate the number 17 year-old MAU without relying on other data sources in production. I thus used data contained in META3047MDL-215R-00000007-008 and META3047MDL-215R2-00000009 to estimate the percentage of 17 year-olds, for period from August 2020 to March 2024. This calculation is initially performed in Schedule 2.4 carried over to Schedule 4.3.4. For periods prior to August 2020, the time-spent data produced was by single-year age, and showed the number of 17 year-old MAU. I then calculated the average 17 year-old MAU by year and state, in total and for each time-spent threshold. For years 2012 to 2019, this was done using the number of 17 year-old MAU already calculated in the time-spent data. For the year 2020, this was done by averaging the number of 17 year-old MAU already calculated in the time-spent data for January through July 2020 and my estimate of the percentage 17 year-old MAU among 13 to 17 year old MAU for August through December 2020. For year 2021 to 2024, this was done by applying my estimate of the percentage of 17 year-old MAU among

13 to 17 year-old MAU to 13-17 year-old MAU and averaging for each period. This was done for each relevant state.

180. For each cohort of 17-year-olds, I then estimated the ARPU of that cohort from the year they turned 18 during the Relevant Time Period through March 2024. This is shown in Schedules 4.2.3 and 4.3.3, respectively, and is calculated for each year as the average of monthly ARPUs for that year, weighted by MAU counts in each month. This calculation relied on data found in Schedules 2.8.6 and 2.8.7, respectively. Data points contained in Schedule 4.4.3 support the reasonableness of my ARPU estimates.

181. I note that while the cohorts of 17-year old MAU I captured in each year spent more time on the IG and FB platforms (daily average of 0.5 hours or more) relative to the average 17 year old MAU, I still assumed that they would generate average revenues per user as young adults (ARPU). This is a conservative assumption as it leads to lower revenues and lower gross profit from these Aged Up Teens during the relevant time period, than if I had assumed they would continue to spend more time than the average user in their age bracket as young adults.

182. Mr. Otaru's testimony seems to indicate that specific usage patterns carry forward into future years, suggesting that heavy Teen users of the platforms will tend to become heavy young adult users of the same platforms. Otaru states "the projected regression is over DAU in total, because what will happen is those teens become adults and there's human maintenance of use trends, et cetera."²⁶⁰ Mr. Otaru further explains "...when we project DAU loss over the longterm, you're also looking at habits around the use, and people who don't use

²⁶⁰ Deposition of Sayed Otaru, June 9, 2025, 194:18-195:4.

the app in a certain way, you know -- sorry. We use the app a certain way will probably continue that app use over time”²⁶¹ and “Yeah. So one of the basis is looking at behavior trends over time, and when you make projections, you look at current behaviors and you have to orient on the information you have and the orientation is based on current use trends.”²⁶² Based on this testimony, my calculations are conservative in assuming that Aged Up Teens that used the IG and FB platforms more than the average of their peers will revert to average revenue generation as young adults.

183. As a next step, I estimated the annual rate of retention/attrition of Instagram and Facebook users, as shown in Schedules 4.2.2 and 4.3.2, respectively. Retention is measure of what percentage of MAUs on a platform in a given year remain a year later. Attrition is the inverse of retention; I will describe my analysis in terms of retention.

184. A key concept to understand is that while retention may be low in the first 180 days after a cohort of MAU sign up to Instagram or Facebook, retention increases once the cohort of MAU moves past the 180 day milestone. This is, for example, shown for Facebook in the Meta document below, also shown in Schedule 4.4.2.²⁶³ This document is titled “Long Term Retention: The Young Ones are the Best Ones and Other Learnings” and is authored by [REDACTED] and Robert Chen. It discusses the concept that people who join FB as Tweens (ages 10-12) have the longest-term retention, and that joining at earlier ages in general correlates with higher retention on the platform. Robert Chen explained in his

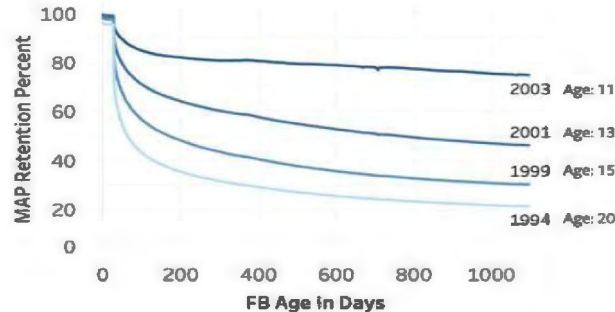
²⁶¹ Deposition of Sayed Otaru, June 9, 2025, 195:11-16.

²⁶² Deposition of Sayed Otaru, June 9, 2025, 196:15-25.

²⁶³ META3047MDL-047-00995641 to 5675 at 5644-5646.

deposition that 11 year olds have 4x the long-term retention of 20 year olds²⁶⁴ as shown in the chart below. Irrespective of when a person joins, however, retention increases significantly after 180 days.

Chart 3: MAP Retention for Select YOB's in Confirmation Year 2014. The people who join as tweens do much better than people who join as teens or young adults. Note that the ages indicated are the age at which they joined Facebook. Lines do not start at exactly 100% due to deactivated accounts.



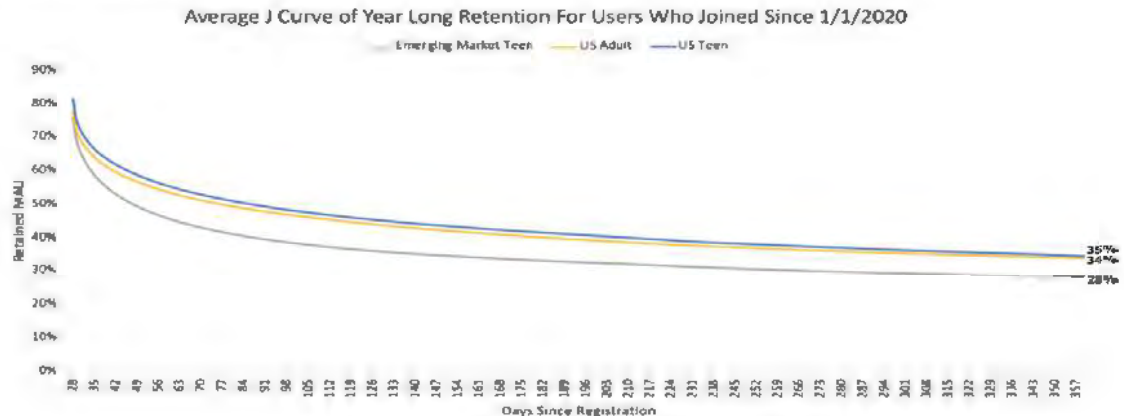
- MAP_28 long term retention tends to be stable after a few hundred days

185. Another illustration of the same concept for IG is also shown below and in Schedule 4.4.2.²⁶⁵ This is from a presentation from the Instagram Retention Team on “US Teen Retention Opportunities.” It discusses that U.S. Teen Retention should be prioritized in H1 2022.

²⁶⁴ Deposition of Robert Chen, March 25, 2025, at 207:3-23.

²⁶⁵ META3047MDL-163-00045651 to 5739 at 5661.

After 365 Days US Teens have higher 2% higher MAU retention than US Adults and 22% higher MAU retention than Emerging Market Teens.



186. As seen above, retention for cohorts is low at first, indicated by the steepness of the line, and then very quickly increases, as indicated by the line flattening out.

187. My estimate of Instagram and Facebook retentions are based on datapoints contained in Schedules 4.4.1 and 4.4.2. Schedule 4.4.1 shows “core product” new user retention (MAU) at 180 days. It contains the table below, created by Meta.²⁶⁶

²⁶⁶ META3047MDL-047-00577796_HIGHLY CONFIDENTIAL (COMPETITOR), at pp. 5, 7, with colored boxes added.

Core Product | Existing user engagement weakness suggests we should focus on Core Product in Developed markets

Group	Country	Cohort	Favorability		Saturation	New User volume	Conf. success	New User retention	New User engagement		Existing User retention curve (share of MAU@365)			Existing User engagement		Revenue		Funnel Health
			% favorable non-users	MAU relative to total population	Years to pop. saturation	Conf. relative to benign reg.	MAU@180 relative to Conf.	DAU/MAU	Sessions Cap. (150 DAU / FB age=180)	MAU@2yrs (reg 20-21)	MAU@2yrs (reg 18-19)	MAU@4yrs (reg 18-19)	DAU/MAU	Sessions Cap. (150 DAU / FB age=180)	Quarterly ARPU, USD	Share of FB revenue		
Engagement problems among existing users	US	Teens		30%	9.9		42%	56%	7.9	85%	89%		61%	8 (6%)	8.2	0.4%	Healthy	
		YA	38%	77%	3.3	79%	35%	46%	8.6	81%	83%	72%	73%	10 (0%)	15.0	3.7%	At risk	
		OA	31%	87%	3.2		42%	57%	8.4	76%	78%	60%	80%	9.6 (0%)	51.0	40.3%	Concerning	
	CA	Teens		35%	12.0		45%	54%	5.7	91%	95%		67%	7.4 (4%)	3.7	0.0%	NA	
		YA		86%	2.5	80%	42%	43%	6.6	86%	87%	79%	77%	9.6 (0%)	9.3	0.3%	NA	
		OA		91%	3.3		47%	54%	8.0	83%	85%	71%	83%	9.7 (1%)	28.6	2.6%	NA	
	GB	Teens		33%	7.8		43%	52%	6.6	91%	91%		64%	7.3 (8%)	2.9	0.0%	NA	
		YA		88%	1.2	78%	34%	43%	7.2	83%	85%	77%	79%	10.1 (-1%)	11.0	0.5%	NA	
		OA		90%	2.5		37%	54%	7.6	82%	84%	70%	83%	9.7 (0%)	27.5	4.3%	NA	
	FR	Teens		23%	14.7		37%	51%	6.9	87%	90%		59%	6.8 (1%)	2.8	0.0%	NA	
		YA		95%	0.6	73%	50%	48%	7.8	81%	84%	71%	77%	9.1 (-2%)	5.9	0.3%	NA	
		OA		90%	2.1		37%	56%	7.2	84%	85%	72%	80%	8.9 (-1%)	13.0	1.8%	NA	
	DE	Teens		11%	18.7		31%	47%	8.4	80%	84%		48%	6.9 (1%)	3.2	0.0%	NA	
		YA		58%	6.9	71%	32%	37%	6.6	76%	80%	63%	63%	8 (0%)	8.9	0.3%	NA	
		OA		64%	10.2		42%	57%	7.2	82%	83%	67%	75%	7.9 (-1%)	22.3	2.6%	NA	
	AU	Teens		30%	10.1		55%	53%	6.0	95%	97%		67%	6.6 (6%)	3.4	0.0%	NA	
		YA		100%	0.0	84%	44%	44%	8.1	88%	88%	81%	85%	10.5 (-3%)	18.9	0.4%	NA	
		OA		94%	2.0		46%	55%	7.5	82%	84%	71%	84%	9.8 (0%)	38.3	2.4%	NA	
	ID	Teens		40%	4.1		35%	50%	7.7	67%	68%		52%	7.6 (0%)	0.1	0.0%	NA	
		YA	76%	95%	0.4	81%	36%	51%	8.4	69%	69%	47%	84%	8.6 (-3%)	0.6	0.2%	NA	
		OA	82%	58%	6.5		47%	62%	8.2	69%	68%	45%	70%	8.4 (-3%)	1.4	0.5%	NA	
	BR	Teens		52%	5.3		35%	49%	7.2	72%	78%		52%	6.8 (-5%)	1.0	0.1%	NA	
		YA	65%	79%	3.3	81%	32%	49%	8.1	70%	73%	52%	67%	8.2 (-6%)	2.3	0.4%	NA	
		OA	65%	72%	6.5		47%	61%	7.9	74%	74%	55%	75%	8 (-4%)	5.0	2.0%	NA	
	JP	Teens		2%	75.1		25%	19%	4.7	64%	69%		27%	5.1 (3%)	0.7	0.0%	NA	
		YA		22%	38.3	82%	29%	31%	5.9	72%	76%	54%	44%	7.8 (2%)	4.5	0.1%	NA	
		OA		34%	52.6		40%	38%	4.7	78%	80%	61%	53%	5.1 (1%)	8.5	0.7%	NA	
	TR	Teens		10%	25.6		38%	34%	4.8	76%	84%		40%	4.7 (-3%)	0.0	0.0%	NA	
		YA		65%	4.9	79%	31%	38%	6.5	74%	76%	58%	54%	6.8 (2%)	0.9	0.1%	NA	
		OA		69%	8.4		37%	56%	7.0	79%	82%	68%	78%	7.7 (0%)	1.9	0.3%	NA	

188. Schedule 4.4.1 and the table above also show existing user retention (MAU) and then at 2-years for the 2020-2021 and 2018-2019 cohorts and 4-year retention for the 2018-2019 cohorts of Teens, YA (Young Adults) and OA (Other or Older Adults). From these I have estimated annual retention for Young Adults, the relevant demographic for my aging-up analysis. My understanding is that once past a lower retention period matching the first 6 months of a MAU's signing up to Instagram and Facebook, which I have discussed above, retention stabilizes. This can be seen above, with the U.S. Young Adult retention at 81% for 2020-2021 MAU after 2 years, 83% for 2018-2019 MAU after 2 years, and 72% for 2018-2019 MAU after 4 years. From this I have calculated a long-term retention rate of 92% per year, for existing MAU. I have shown these data points and calculations below, from Schedule 4.4.1.

	Two Year Retention	Two Year Attrition Rate	Annualized Attrition	Annualized Retention
Existing Young Adult Users, Registered 2020-2021	81.0%	19.0%	-10.0%	90.0%
Existing Young Adult Users, Registered 2018-2019	83.0%	17.0%	-8.9%	91.1%

	Four Year Retention	Four Year Attrition Rate	Annualized Attrition	Annualized Retention	Annualized Retention (Rounded)
Existing Young Adult Users, Registered 2018-2019	72.0%	28.0%	-7.9%	92.1%	92.0%

189. As seen above, existing Young Adult MAU retention is 72% after 4 years. The annual retention rate that would correspond to this figure is approximately 92.1%, calculated as $(92.1\%)^4 = 72\%$ (rounded). I have rounded this down to 92.0%. It is important to keep in mind that I calculated retention for MAUs where a majority were on the platform in the previous year and are thus past the initial lower retention period. Many of the 17-year old MAUs in each year prior to when they became adults had already been on the platform as 13-, 14-, 15-, or 16-year-olds. In addition, even of the 17-year-olds that were acquired as new users in the prior year, those acquired early in the year were already past the initial 180 day low retention period.

190. Based on the above annual retention rate for existing users, and a 35% annual retention rate for new users, I calculated a first year retention rate, for both Instagram and Facebook 17 year-old MAUs. This is to reflect the fact that certain MAU's that turned 18 had just joined the platform. I have done this by blending the retention rate of existing 17 year-old and new 17 year-old MAUs, as shown below, from Schedule 4.1.1.

First Year Annual Retention Rate for Young Adult Users, From Age 17 to Age 18 [6]

	Share of Users	Annualized Retention	Weighted Average First Year Retention	Weighted Average First Year Retention (Rounded)
Instagram				
Existing 17 Year-Old Users	90%	92.0%	86.3%	86.0%
New 17 Year-Old Users	10%	35%		
Facebook				
Existing 17 Year-Old Users	90%	92.0%	86.3%	86.0%
New 17 Year-Old Users	10%	35%		

191. I have estimated the mix of existing versus new 17 year-olds to include a large proportion of existing 17 year-olds vs. a low proportion of new 17 year-olds (less than 180 days on the platform), for the following reasons:

- Any new 17 year-old MAU who will have joined the year they turned 17 will be, on average, 6 months old by the end of that year, and some will have become “seasoned” through the course of that year, having passed the initial new user low retention period
- Instagram and Facebook have stable rates of saturation. Instagram's saturation is significantly higher than Facebook's for Teens.
- The large majority of 17 year-olds are carry-overs from prior years.

192. In order to prepare a reasonableness check on my assumption that new users comprised a small proportion of 17-year olds, I calculated the percentage of increase of 17 year-olds, i.e., after attrition, as a percentage of all 17 year-olds, on a rolling annual basis, for Instagram and Facebook, using data in Schedules 6.3.3 and 6.3.5 over the relevant time period. It shows that for Instagram, on a weighted average basis, 9.6% of 17 year-olds were a net increase of 17 year-olds over the prior year. For Facebook, this percentage is 6.2%.

193. I have estimated that 10% of Instagram MAUs and 10% of Facebook MAUs were new users, conservatively rounding up from the figures above.²⁶⁷

194. Using my first-year annual retention rate of 86% for both Instagram and Facebook, and my annual long term retention rate of 92% for existing Young Adults on both platforms, I then calculated cumulative retention rate²⁶⁸ for each successive year, as shown in Schedules 4.2.2 and 4.3.2. For example, only 52% of IG users (MAU) who turned 17 in 2018 and thus 18 in 2019 (Year 1) would still be on the platform seven years later (Year 7). Similarly, only 34% of FB users (MAU) who turned 17 in 2013 and were thus 18 in 2014 (Year 1) would still be on the platform 12 years later (Year 12). This is conservative as it ignores users who may leave and then rejoin a platform.

195. I then calculate total cumulative average monthly ARPU per MAU since year turned 18 by carrying over relevant ARPU by relevant year and age bracket from Schedules 4.2.3 and 4.3.3 to Schedule 4.2.2 and 4.3.3, respectively. These age brackets are age brackets 18-24 and 25-34. By way of example, as shown in Schedule 4.2.2, an Instagram MAU who turned 17 in 2018 will have earned META the 2019 ARPU in year 1, when that MAU was aged 18, the 2020 ARPU in year 2020, when aged 19, all the way through the year 6 ARPU, when aged 23. The year 6 ARPU is apportioned to represent only the first three months of 2024. These cumulative ARPU figures also account for retention and attrition in each year.

²⁶⁷ A higher proportion of new users results in a lower retention rate for Aged Up Teens as young adults, and lower resulting gross profits in my calculations.

²⁶⁸ The cumulative retention rate is the percentage of MAUs that are still on the platform after a defined number of years. It is calculated as the retention rate percentage for the first year, multiplied by the retention rate percentage for all subsequent years in the defined time period.

196. For each month and state, I then multiplied cumulative ARPU since year each cohort of 17-year-olds turned 18, by MAU at each relevant time-spent threshold to calculate the revenue that Meta has earned from each 17 year-old in the year they were 18 through March 2024. I then summed the revenue from the year each cohort turned 18 for each time-spent threshold by year and by UDAP State, as shown in Schedules 4.2.1 and 4.3.1.

2. Revenues Earned by Meta for Instagram and Facebook on Aged-Up Teens for Instagram and Facebook from 2013 to March 31, 2024, respectively

197. The table below shows Instagram and Facebook revenue from the year Teens turned 18, i.e., for 2018 and 2013, respectively, to March 31, 2024. respectively, for each average daily time-spent threshold. This is shown in Schedule 4.1.2. I note that in the table below, each column includes the figures in all columns to the right of that column. For example, the revenues from Aged-Up Teens spending more than 0.5 hours of daily average time also include the revenues from Aged-Up Teens spending more than 1 hour of daily average time.

Instagram Aged-Up Teen Revenues, 2018 to Q1, 2024 [1]

State	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
California	\$234,514,706	\$128,784,526	\$38,997,935	\$16,367,126	\$5,788,127	\$1,054,680
Colorado	\$18,039,995	\$7,684,552	\$1,730,193	\$384,567	\$15,719	\$0
Connecticut	\$16,035,135	\$7,299,309	\$1,712,344	\$425,447	\$0	\$0
Delaware	\$5,212,673	\$3,007,818	\$1,131,204	\$489,486	\$261,744	\$63,422
Illinois	\$46,777,565	\$19,619,940	\$5,026,703	\$1,397,904	\$0	\$0
Indiana	\$27,613,607	\$13,179,784	\$3,785,734	\$2,042,883	\$446,271	\$0
Kansas	\$8,773,402	\$3,360,965	\$809,133	\$96,699	\$0	\$0
Kentucky	\$18,989,409	\$8,791,306	\$2,592,914	\$1,147,238	\$159,278	\$0
Louisiana	\$20,941,616	\$11,876,015	\$4,694,901	\$2,177,063	\$1,179,801	\$479,488
Minnesota	\$17,530,402	\$6,657,579	\$1,411,152	\$141,004	\$0	\$0
Nebraska	\$6,983,016	\$2,811,084	\$820,301	\$254,141	\$8,288	\$0
New Jersey	\$47,410,426	\$22,916,414	\$6,239,245	\$2,839,637	\$541,741	\$0
New York	\$84,404,211	\$39,986,793	\$9,704,544	\$2,941,793	\$622,071	\$0
North Carolina	\$52,845,501	\$27,604,796	\$8,956,955	\$4,060,914	\$1,327,682	\$33,039
Pennsylvania	\$55,451,389	\$26,991,077	\$8,817,430	\$4,252,337	\$1,629,832	\$415,317
South Carolina	\$20,587,281	\$10,352,647	\$3,023,468	\$1,438,770	\$368,838	\$0
Virginia	\$40,819,418	\$20,837,387	\$6,910,211	\$3,073,959	\$1,588,346	\$411,059
Wisconsin	\$17,164,938	\$6,412,401	\$1,567,228	\$247,231	\$0	\$0
Total Revenue	\$740,094,690	\$368,174,392	\$107,931,594	\$43,778,199	\$13,937,738	\$2,457,005

Facebook Aged-Up Teen Revenues, 2013 to Q1, 2024 [2]

State	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
California	\$147,946,138	\$72,839,379	\$25,824,508	\$11,361,410	\$3,202,528	\$0
Colorado	\$34,067,235	\$18,294,470	\$6,497,331	\$2,997,227	\$1,234,994	\$558,871
Connecticut	\$11,412,643	\$5,237,514	\$2,017,823	\$874,640	\$298,086	\$73,599
Delaware	\$2,399,560	\$1,181,334	\$448,161	\$202,677	\$83,360	\$16,296
Illinois	\$69,684,307	\$37,277,850	\$13,893,866	\$7,055,205	\$2,915,380	\$1,288,305
Indiana	\$30,201,144	\$15,779,513	\$5,850,343	\$2,910,068	\$1,390,338	\$774,725
Kansas	\$14,647,466	\$7,672,272	\$2,860,205	\$1,486,181	\$536,810	\$350,063
Kentucky	\$18,531,620	\$9,253,792	\$3,115,617	\$1,255,650	\$672,238	\$304,232
Louisiana	\$13,373,335	\$6,390,388	\$2,230,082	\$1,009,909	\$491,706	\$0
Minnesota	\$21,267,524	\$10,419,334	\$3,828,894	\$1,899,920	\$965,900	\$427,129
Nebraska	\$9,505,095	\$4,783,612	\$1,711,469	\$772,285	\$414,091	\$59,731
New Jersey	\$25,886,022	\$12,713,741	\$4,895,520	\$1,678,829	\$862,347	\$172,120
New York	\$92,704,550	\$52,197,777	\$19,755,173	\$9,601,528	\$3,400,824	\$964,688
North Carolina	\$35,619,216	\$18,150,687	\$6,373,496	\$2,899,725	\$1,085,990	\$442,570
Pennsylvania	\$47,145,067	\$23,864,346	\$8,569,405	\$4,455,108	\$1,999,835	\$377,079
South Carolina	\$20,740,020	\$11,127,540	\$4,250,778	\$1,903,319	\$1,060,983	\$514,630
Virginia	\$27,982,777	\$13,946,583	\$4,969,318	\$2,208,360	\$1,058,737	\$110,230
Wisconsin	\$29,878,637	\$14,924,638	\$5,400,524	\$2,603,196	\$1,403,113	\$803,573
Total Revenue	\$652,992,357	\$336,054,768	\$122,492,515	\$57,175,237	\$23,077,261	\$7,237,841

198. The above data is shown in Schedule 4.1.1. Schedule 4.1.1 also breaks out the Revenues at each threshold, but not above the next threshold, e.g., Revenue of MAUs averaging more than 0.5 hours but less than 1 hour per day.

3. Apportionment for COGS

199. I also calculate COGS related to the aging up revenue calculated above. In doing so, I relied on the same COGS calculated for the time-spent analysis above in section XI of this report. These annual COGS figures have been carried over to Schedules 4.2.3 and 4.3.3 for Instagram and Facebook, respectively. I used the same methodology and retention estimates to calculate cumulative COGS since the year Teens turned 18, as shown in Schedules 4.2.2 and 4.3.2 for Instagram and Facebook, respectively. I then carried this information over to Schedules 4.2.1 and 4.3.1 for Instagram and Facebook, respectively, where I calculate COGS by state and by year at each time spent threshold, similar to my calculations of revenue in those schedules.

200. The COGS are then summarized by state and by year and subtracted from revenue to calculate Instagram and Facebook gross profits, as shown in Schedules 4.2.1 and 4.3.1, respectively.

4. Gross Profits Earned by Meta for Instagram and Facebook on Aged-Up Teens for Instagram and Facebook for 2018 and 2013 to March 31, 2024, respectively

201. The table below shows Instagram and Facebook gross profits from the year Teens turned 18, i.e., for 2018 and 2013, respectively, to March 31, 2024 for each average daily time-spent threshold. This is shown in Schedule 4.1.1. I note again that in the table below, each column includes the figures in all columns to the right of that column.

Instagram Aged-Up Teen Gross Profits, 2018 to Q1, 2024 [1]

State	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
California	\$134,275,495	\$73,558,845	\$22,098,238	\$9,229,419	\$3,185,800	\$594,281
Colorado	\$10,366,460	\$4,422,359	\$979,819	\$207,803	\$7,747	\$0
Connecticut	\$9,264,555	\$4,226,775	\$978,267	\$237,357	\$0	\$0
Delaware	\$2,993,630	\$1,725,597	\$648,543	\$278,883	\$149,067	\$34,425
Illinois	\$26,917,191	\$11,269,448	\$2,841,772	\$765,219	\$0	\$0
Indiana	\$15,911,823	\$7,576,117	\$2,142,631	\$1,167,052	\$240,658	\$0
Kansas	\$5,043,891	\$1,934,493	\$456,433	\$53,723	\$0	\$0
Kentucky	\$10,968,146	\$5,069,448	\$1,478,155	\$652,193	\$88,913	\$0
Louisiana	\$11,955,658	\$6,744,320	\$2,653,580	\$1,224,585	\$665,383	\$267,532
Minnesota	\$10,124,429	\$3,852,429	\$802,623	\$78,067	\$0	\$0
Nebraska	\$4,013,538	\$1,610,513	\$462,239	\$138,314	\$4,084	\$0
New Jersey	\$27,310,202	\$13,182,786	\$3,541,541	\$1,611,064	\$292,177	\$0
New York	\$48,575,232	\$23,004,460	\$5,498,142	\$1,621,944	\$344,831	\$0
North Carolina	\$30,387,684	\$15,830,880	\$5,102,966	\$2,302,869	\$739,048	\$16,282
Pennsylvania	\$32,017,088	\$15,548,576	\$5,037,718	\$2,426,930	\$917,552	\$234,019
South Carolina	\$11,818,951	\$5,933,940	\$1,710,303	\$811,429	\$198,657	\$0
Virginia	\$23,478,328	\$11,965,665	\$3,942,938	\$1,748,077	\$912,489	\$224,014
Wisconsin	\$9,903,132	\$3,691,948	\$886,491	\$133,099	\$0	\$0
Total Gross Profits	\$425,325,435	\$211,148,600	\$61,262,399	\$24,688,027	\$7,746,408	\$1,370,554

Facebook Aged-Up Teen Gross Profits, 2013 to Q1, 2024 [2]

State	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
California	\$54,646,551	\$25,122,475	\$8,292,161	\$3,319,839	\$330,970	\$0
Colorado	\$11,050,610	\$5,506,714	\$1,748,417	\$752,040	\$195,837	\$54,145
Connecticut	\$3,746,362	\$1,568,506	\$556,056	\$177,325	\$39,759	\$23,062
Delaware	\$751,975	\$334,720	\$115,638	\$40,900	\$11,162	\$1,881
Illinois	\$22,559,726	\$11,261,365	\$3,803,747	\$1,891,262	\$484,508	\$213,367
Indiana	\$9,061,529	\$4,442,521	\$1,482,565	\$658,000	\$189,544	\$76,673
Kansas	\$4,231,135	\$2,067,472	\$703,091	\$355,269	\$47,214	\$42,453
Kentucky	\$5,201,360	\$2,392,642	\$702,778	\$111,541	\$18,484	-\$33,794
Louisiana	\$3,858,032	\$1,674,618	\$527,734	\$196,112	\$74,802	\$0
Minnesota	\$6,680,495	\$2,995,872	\$991,703	\$358,074	\$125,868	\$14,204
Nebraska	\$2,830,952	\$1,306,382	\$415,527	\$137,970	\$59,253	-\$2,898
New Jersey	\$8,441,365	\$3,754,900	\$1,353,848	\$274,902	\$156,086	\$41,410
New York	\$31,448,719	\$16,685,248	\$5,851,422	\$2,643,291	\$518,099	\$104,216
North Carolina	\$11,128,689	\$5,241,251	\$1,662,893	\$594,007	\$202,286	\$121,529
Pennsylvania	\$15,419,797	\$7,276,462	\$2,372,435	\$1,110,387	\$363,852	-\$57,591
South Carolina	\$6,012,318	\$2,950,119	\$1,013,911	\$363,261	\$173,693	\$83,916
Virginia	\$8,702,420	\$3,944,579	\$1,298,415	\$448,006	\$203,551	\$4,976
Wisconsin	\$9,521,347	\$4,346,719	\$1,378,962	\$518,738	\$192,447	\$63,937
Total Gross Profits	\$215,293,382	\$102,872,566	\$34,271,304	\$13,950,923	\$3,387,415	\$751,487

5. Gross Profit Earned by Meta on Aged-Up Teens for Instagram for 2013 -2017

202. As I understand it, Meta did not have and in any case did not produce data necessary to make similar calculations to the ones above for Instagram for the period 2013 to 2017. I used the same methodology where possible, and adapted the calculations for the missing data.

203. I first estimated the Teen MAU and Teen MAU at time-spent thresholds of 0.5 hours, 1 hour, 2 hours and 3 hours for 2012 to 2017. This is shown in Schedules 2.8.1 through 2.8.5. The methodology was described at the end of the preceding Section XI of this report.

204. In Schedules 2.8.1 through 2.8.5, I then estimated COGS per U.S. MAU and ARPU per U.S. MAU related to those Teen MAUs for each year. The methodology was described at the end of the preceding Section XI of this report.

205. I applied a similar methodology to also calculate COGS per adult US MAU, by using overall COGS per U.S. MAU as a reference point, and adjusting with a multiplier that represented the proportion of average time spent by adults relative to all U.S. IG users. Schedule 2.8.6 contains an estimate of ARPU per young adult (18-24) U.S. MAU for years 2013 – 2017 based on the methodology that was described at the end of Section XI of this report.

206. I then carried over these ARPU per young adult MAU and COGS per adult MAU for 2012 -2017 and applied the same methodology as above for the Instagram over the period 2018 to Q1 2024, to calculate cumulative ARPU per MAU and cumulative COGS per MAU from the year Teens turned 18 to Q1 2024, for those Teen MAU who turned 18 in 2012 through 2017. These calculations are shown in Schedule 4.5.2.

207. In Schedule 4.5.1, I then carried over the Teen MAU by time-spent thresholds, the cumulative ARPU per MAU and cumulative COGS per MAU. In total and for each time-spent threshold, I calculated the number of 17 year-old MAU using the 2021 percentage of 17 year-olds from Schedule 4.2.4. I then calculated revenue, COGS and resulting gross-profits for each time spent threshold. This calculation was performed for each year and state.

208. I then summarized the results for each state. These are shown in Schedule 4.5.1. These resulting gross profits from Teens that turned 18 between 2013 – 2017 are also shown in the table below, from Schedule 4.1.3.

Instagram Aged-Up Teen Gross Profits, 2013 to 2017 [1]

	2013 - 2017					
	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
California	\$150,008,433	\$70,592,204	\$22,060,064	\$4,412,013		
Colorado	\$16,783,814	\$7,898,265	\$2,468,208	\$493,642		
Connecticut	\$11,899,323	\$5,599,681	\$1,749,900	\$349,980		
Delaware	\$3,318,961	\$1,561,864	\$488,083	\$97,617		
Illinois	\$43,264,361	\$20,359,699	\$6,362,406	\$1,272,481		
Indiana	\$24,154,835	\$11,366,981	\$3,552,182	\$710,436		
Kansas	\$9,209,759	\$4,334,004	\$1,354,376	\$270,875		
Kentucky	\$16,869,922	\$7,938,787	\$2,480,871	\$496,174		
Louisiana	\$15,742,523	\$7,408,246	\$2,315,077	\$463,015		
Minnesota	\$17,237,546	\$8,111,786	\$2,534,933	\$506,987		
Nebraska	\$6,725,237	\$3,164,818	\$989,005	\$197,801		
New Jersey	\$32,615,555	\$15,348,496	\$4,796,405	\$959,281		
New York	\$63,325,964	\$29,800,454	\$9,312,642	\$1,862,528		
North Carolina	\$38,855,354	\$18,284,872	\$5,714,023	\$1,142,805		
Pennsylvania	\$43,729,564	\$20,578,618	\$6,430,818	\$1,286,164		
South Carolina	\$17,552,511	\$8,260,005	\$2,581,252	\$516,250		
Virginia	\$29,416,196	\$13,842,916	\$4,325,911	\$865,182		
Wisconsin	\$18,011,868	\$8,476,173	\$2,648,804	\$529,761		
Total	\$558,721,725	\$262,927,870	\$82,164,959	\$16,432,992		

6. Revenue and Gross Profits Earned by Meta for Instagram and Facebook on Aged-Up Teens for Instagram for 2013 to Q1 2024

209. Combining the above analysis, I have calculated revenues and gross profits earned by Meta on Instagram and Facebook on aged-up teens for 2013 to Q1, 2024. Gross profits are shown below, by states and in aggregate. These are also shown in Schedule 4.1.4.

Instagram and Facebook Revenues From Aged-Up Teens by State, 2013 to Q1 2024 [5]

2013 - Q1 2024						
	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
California	\$597,704,276	\$302,914,932	\$96,475,888	\$34,059,225	\$8,990,655	\$1,054,680
Colorado	\$76,189,914	\$37,312,050	\$11,769,095	\$4,090,109	\$1,250,713	\$558,871
Connecticut	\$44,521,825	\$20,571,669	\$6,241,056	\$1,802,266	\$298,086	\$73,599
Delaware	\$12,374,530	\$6,430,233	\$2,279,703	\$832,230	\$345,104	\$79,718
Illinois	\$178,540,846	\$86,111,424	\$28,049,830	\$10,278,962	\$2,915,380	\$1,288,305
Indiana	\$92,473,934	\$45,269,500	\$14,733,016	\$5,972,339	\$1,836,609	\$774,725
Kansas	\$36,635,726	\$17,251,994	\$5,612,700	\$1,971,552	\$536,810	\$350,063
Kentucky	\$61,727,267	\$29,436,268	\$9,268,272	\$3,114,836	\$831,517	\$304,232
Louisiana	\$56,903,512	\$28,896,314	\$10,246,830	\$3,851,342	\$1,671,507	\$479,488
Minnesota	\$63,531,660	\$28,716,317	\$8,877,359	\$2,768,387	\$965,900	\$427,129
Nebraska	\$26,137,989	\$12,135,815	\$3,950,870	\$1,310,245	\$422,380	\$59,731
New Jersey	\$120,095,710	\$57,653,336	\$18,017,010	\$5,894,914	\$1,404,088	\$172,120
New York	\$267,973,638	\$134,944,512	\$42,822,199	\$15,215,817	\$4,022,895	\$964,688
North Carolina	\$144,217,314	\$71,991,999	\$23,529,363	\$8,600,421	\$2,413,673	\$475,609
Pennsylvania	\$165,342,937	\$80,383,179	\$26,614,259	\$10,552,930	\$3,629,667	\$792,396
South Carolina	\$66,512,970	\$33,332,267	\$10,978,021	\$4,082,844	\$1,429,821	\$514,630
Virginia	\$111,010,777	\$54,646,832	\$18,086,673	\$6,523,748	\$2,647,083	\$521,289
Wisconsin	\$72,888,363	\$33,499,292	\$10,768,457	\$3,610,568	\$1,403,113	\$803,573
Total	\$2,194,783,188	\$1,081,497,933	\$348,320,601	\$124,532,735	\$37,014,999	\$9,694,846

Summary of Instagram and Facebook Revenues From Aged-Up Teens, 2013 to Q1 2024

	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
Instagram						
2013 - 2017	\$801,696,140	\$377,268,772	\$117,896,491	\$23,579,298		
2018 - Q1 2024	\$740,094,690	\$368,174,392	\$107,931,594	\$43,778,199	\$13,937,738	\$2,457,005
2013 - Q1 2024	\$1,541,790,830	\$745,443,164	\$225,828,085	\$67,357,497	\$13,937,738	\$2,457,005
Facebook						
2013 - Q1 2024	\$652,992,357	\$336,054,768	\$122,492,515	\$57,175,237	\$23,077,261	\$7,237,841
Total	\$2,194,783,188	\$1,081,497,933	\$348,320,601	\$124,532,735	\$37,014,999	\$9,694,846

	Average Daily Time Spent					
	Over 0.5 and Less than 1 Hour	Over 1 and Less than 2 Hours	Over 2 and Less than 3 Hours	Over 3 and Less than 4 Hours	Over 4 and Less than 5 Hours	Over 5 Hours
Instagram						
2013 - 2017	\$424,427,368	\$259,372,281	\$94,317,193	\$23,579,298		
2018 - Q1 2024	\$371,920,298	\$260,242,798	\$64,153,395	\$29,840,461	\$11,480,733	\$2,457,005
2013 - Q1 2024	\$796,347,666	\$519,615,079	\$158,470,588	\$53,419,759	\$11,480,733	\$2,457,005
Facebook						
2013 - Q1 2024	\$316,937,589	\$213,562,253	\$65,317,278	\$34,097,976	\$15,839,420	\$7,237,841
Total	\$1,113,285,255	\$733,177,332	\$223,787,866	\$87,517,735	\$27,320,153	\$9,694,846

210. Gross profits are shown below, by states and in aggregate. These are also shown in Schedule 4.1.3.

Instagram and Facebook Gross Profits From Aged-Up Teens by State, 2013 to Q1 2024

2013 - Q1 2024						
	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
California	\$338,930,479	\$169,273,524	\$52,450,462	\$16,961,272	\$3,516,770	\$594,281
Colorado	\$38,200,883	\$17,827,339	\$5,196,444	\$1,453,485	\$203,583	\$54,145
Connecticut	\$24,910,240	\$11,394,963	\$3,284,224	\$764,661	\$39,759	\$23,062
Delaware	\$7,064,567	\$3,622,181	\$1,252,264	\$417,399	\$160,228	\$36,306
Illinois	\$92,741,279	\$42,890,512	\$13,007,925	\$3,928,962	\$484,508	\$213,367
Indiana	\$49,128,186	\$23,385,620	\$7,177,378	\$2,535,488	\$430,202	\$76,673
Kansas	\$18,484,785	\$8,335,970	\$2,513,900	\$679,867	\$47,214	\$42,453
Kentucky	\$33,039,428	\$15,400,876	\$4,661,804	\$1,259,908	\$107,397	-\$33,794
Louisiana	\$31,556,213	\$15,827,185	\$5,496,391	\$1,883,712	\$740,185	\$267,532
Minnesota	\$34,042,470	\$14,960,088	\$4,329,260	\$943,128	\$125,868	\$14,204
Nebraska	\$13,569,728	\$6,081,713	\$1,866,772	\$474,085	\$63,337	-\$2,898
New Jersey	\$68,367,122	\$32,286,182	\$9,691,794	\$2,845,247	\$448,263	\$41,410
New York	\$143,349,916	\$69,490,162	\$20,662,206	\$6,127,764	\$862,931	\$104,216
North Carolina	\$80,371,727	\$39,357,004	\$12,479,881	\$4,039,680	\$941,335	\$137,811
Pennsylvania	\$91,166,448	\$43,403,656	\$13,840,972	\$4,823,481	\$1,281,404	\$176,429
South Carolina	\$35,383,781	\$17,144,064	\$5,305,466	\$1,690,940	\$372,351	\$83,916
Virginia	\$61,596,944	\$29,753,160	\$9,567,264	\$3,061,266	\$1,116,040	\$228,990
Wisconsin	\$37,436,346	\$16,514,840	\$4,914,258	\$1,181,598	\$192,447	\$63,937
Total	\$1,199,340,541	\$576,949,037	\$177,698,662	\$55,071,942	\$11,133,822	\$2,122,041

Summary of Instagram and Facebook Gross Profits From Aged-Up Teens, 2013 to Q1 2024

	Average Daily Time Spent					
	Over 0.5 Hours	Over 1 Hour	Over 2 Hours	Over 3 Hours	Over 4 Hours	Over 5 Hours
Instagram						
2013 - 2017	\$558,721,725	\$262,927,870	\$82,164,959	\$16,432,992		
2018 - Q1 2024	\$425,325,435	\$211,148,600	\$61,262,399	\$24,688,027	\$7,746,408	\$1,370,554
2013 - Q1 2024	\$984,047,159	\$474,076,471	\$143,427,359	\$41,121,019	\$7,746,408	\$1,370,554
Facebook						
2013 - Q1 2024	\$215,293,382	\$102,872,566	\$34,271,304	\$13,950,923	\$3,387,415	\$751,487
Total	\$1,199,340,541	\$576,949,037	\$177,698,662	\$55,071,942	\$11,133,822	\$2,122,041

	Average Daily Time Spent					
	Over 0.5 and Less than 1 Hour	Over 1 and Less than 2 Hours	Over 2 and Less than 3 Hours	Over 3 and Less than 4 Hours	Over 4 and Less than 5 Hours	Over 5 Hours
Instagram						
2013 - 2017	\$295,793,854	\$180,762,911	\$65,731,968	\$16,432,992		
2018 - Q1 2024	\$214,176,834	\$149,886,201	\$36,574,373	\$16,941,619	\$6,375,854	\$1,370,554
2013 - Q1 2024	\$509,970,688	\$330,649,112	\$102,306,340	\$33,374,611	\$6,375,854	\$1,370,554
Facebook						
2013 - Q1 2024	\$112,420,816	\$68,601,263	\$20,320,380	\$10,563,509	\$2,635,928	\$751,487
Total	\$622,391,504	\$399,250,375	\$122,626,720	\$43,938,120	\$9,011,782	\$2,122,041

7. Consideration of Lifetime value of Instagram and Facebook Teen MAU After Turning 18 and Past Q1 2024, the End of the Relevant Time Period.

211. It is reasonable to expect that Meta will continue operating in the future and will continue to earn profits on aged-up teens beyond the end date of my calculation of Q1 2024. As seen in Schedules 4.2.2 and 4.3.2, Meta can expect to earn high and increasing ARPU for each of these users into the future as they age from young adults into older adults. My analysis has not accounted for these future earnings.

212. The future post-Q1 2024 earnings would also help to amortize the periods of gross profit loss on Teens experienced in the early period of their lifetime on Instagram and Facebook.

213. My review of Meta's income statement in Schedule 1.4.1, indicates that between 2012 and Q1 2025, Meta's gross margin on revenue has approximated 80%, indicating very high profit margins on average users.

XIII. Instances of Bad Encounters on Instagram

1. Methodology

214. The following methodology was performed for each UDAP State.

215. I was asked by Counsel to calculate the number of instances of Bad Encounters that Teens experienced on Instagram, using data contained in the BEEF Survey. I have described the BEEF Survey in Section VI above. As reflected in Schedule 5.3, I utilized data from the BEEF Survey relating to the Rate and Average Frequency at which Teen Instagram

users reported encountering certain Issues.²⁶⁹ As described above, I understand Rate to be the percentage of users who reported encountering at least one instance of a particular issue within the past seven days. I understand that, for respondents who affirmatively reported experiencing a particular issue within the last week, “Average Frequency” refers to the number of times those respondents experienced the bad encounter over the preceding seven days. Thus, for example, the BEEF Survey found that 18.7% of Teen Instagram users reported having experienced “nudity” within the past week, and each of those 18.7% encountered the issue an average of 4.03 times.²⁷⁰ Multiplying Rate by Frequency yields the number of Average Weekly Encounters per User for each issue. Thus, as shown in Schedule 5.3, across all Teen respondents, each Teen averaged 0.75 bad encounters per week related to nudity.

216. In Schedule 5.2, I used this Average Weekly Encounters per person metric for each Issue (Frequency x Rate) and converted it to Average Monthly Encounters, using the number of weeks and months in a year. I then multiplied the Average Monthly Encounter per person by the number of Daily Active Persons (DAPs) in each month.²⁷¹ I performed this calculation for each month in which Meta produced user data – February 2018 to March 2023.²⁷² This DAP count is conservative because it is lower than Monthly Active Person Counts (MAP), while the bad encounters are calculated on a monthly basis, I cannot

²⁶⁹ Survey issues included: commerciality, misinfo, bully witness, audience limitation, usability passive, hate witness, data privacy, perceived control, fake acct 1st, negative comparison, transparency, political posts, nudity, over enforcement, violence, unwanted advances, usability action, bully target, self harm, acct security, drugs, and impersonation 1st (“Issues”). See Schedule 5.3.

²⁷⁰ Schedule 5.3.

²⁷¹ I understand that BEEF Survey respondents are reported by person (as opposed to user account).

²⁷² Schedule 5.2.

be certain that all MAPs had the same likelihood of bad experiences as the BEEF Survey respondents. The survey respondents provided a response regarding bad encounters over a one week period. MAPs represent persons who may not be active on the Instagram platform on a weekly basis.

217. As discussed in Section VI above, I have been asked to assume that the nature, rate, and frequency of Bad Encounters experienced by Teens in each state on Instagram remained consistent with those reported in the BEEF Survey, and I have seen no evidence indicating a substantial decline in such encounters since that time. While the reasonableness of this assumption will ultimately be decided by the trier of fact, I find this to be a reasonable assumption.

218. Of the dozens of different types of bad encounters assessed by the BEEF survey, Plaintiffs' counsel instructed me to focus on ten of them in my calculations: Bully Target, Bully Witness, Drugs, Hate Witness, Negative Comparison, Nudity, Self Harm, Unwanted Advances, Violence, and Perceived Control (collectively, "Bad Encounter Issues"). As reflected in Schedule 5.2, I calculate that from February 2018 through March 2024, there were **over 13 billion instances** in which UDAP State Teen users experienced one of the ten selected Bad Encounter Issues.²⁷³

219. Additionally, Counsel asked me to perform similar calculations that are limited to instances in which Teens experienced at least one of the Bad Encounter Issues – considering only the Rate and not the Frequency. This approach effectively caps each instance at one per Bad Encounter Issue per Teen per month. I performed this calculation in Schedule 5.1.1.

²⁷³ Schedule 5.2.

220. For each issue, I used the average weekly Rate of occurrence. Next, I converted the weekly Rate to a monthly rate by calculating the probability that the event would not occur in a given week, raising that probability to the 52/12 power (to approximate a month), and subtracting the result from 1. For example, a Teen encountering Nudity at a weekly rate of 18.7% would be expected to encounter it at a monthly rate of 59.23%. I conservatively assumed that such a Teen would experience the issue only once per month, disregarding the possibility of multiple occurrences.

221. For each month from February 2018 to March 2024 and for each Bad Encounter Issue, I multiplied the average monthly rate by the monthly DAP to calculate the number of instances associated with each Issue.

222. Next, I aggregated the number of instances all Bad Encounter Issues across all months from February 2018 to March 2024. As shown in Schedule 5.1.1, the total number of instances from February 2018 to March 2024 is **over 2.4 billion**, covering all ten Bad Encounter Issues.

223. Finally, I was asked to calculate the same figure for only the Bad Encounter Issues, but under the assumption that each user could incur no more than one instance per month if exposed to any one of the Bad Encounter Issues. I calculated this probability as 1 minus the cumulative product of (1 minus the Rate) for each of the ten Bad Encounter Issues, resulting in a combined monthly probability of 99.96%.²⁷⁴ I then multiplied this probability

²⁷⁴ Schedule 5.1.1. The Rates for each of the ten Bad Encounter Issues are 76.77% (Bully Witness), 75.18% (Hate Witness), 60.51% (Perceived Control), 62.39% (Negative Comparison), 59.23% (Nudity), 47.19% (Violence), 47.19% (Unwanted Advances), 36.96% (Bully Target), 29.33% (Self Harm), and 14.69% (Drugs).

by the total number of Teen DAPs across all months from February 2018 to March 2024. The resulting number of instances for this period is **over 477 million**.²⁷⁵

224. All of the above calculations for the Bad Encounter Issues interpret the BEEF survey response indicating a bad encounter in the last week, to occur at random in each successive week within a month. For example, 18.7% of Teen respondents stated that they had encountered “nudity” in the last week. I assume in my above-described calculations that in each successive week, that 18.7% of respondents at random experience “nudity”, and therefore that there is not a correlation between the 18.7% of respondents that experience it in the first and second week of a month. I note that the BEEF survey does not provide data that conveys the likelihood of the same Teens experience a particular bad encounter week after week.

225. In order to address the possibility that there is some correlation between the Teens who experience a particular bad encounter in each successive week during a month, I have prepared an alternative calculation of bad encounter instances in Schedule 5.1.2. These calculations very conservatively assume that there is 100% correlation between the Teens who experience a particular bad encounter in each successive week. For example, of the 18.7% of respondents that experience a “nudity” bad encounter in the first week of each month, I conservatively assume that the *same* 18.7% of respondents experience “nudity” in each successive week of the month. Therefore, under this calculation, the weekly and monthly rate of occurrence of each bad encounter is the *same*. While this calculation likely overstates the correlation between respondents who experience the bad encounters from one week to the

²⁷⁵ Schedule 5.1.1.

next, and therefore understates the number of affected persons and instances, it provides a lower bound estimate of instances from the survey responses.

226. As shown in Schedule 5.1.2, the total number of instances from February 2018 to March 2024 is **over 779 million**, covering all ten Bad Encounter Issues.

227. Finally, I was asked to calculate the same figure under the assumption that each user could incur no more than one instance per month if exposed to any one of the Bad Encounter Issues. Using the same methodology described above for computing the cumulative probability of experiencing at least one bad encounter, I calculated the combined monthly probability to be 83.85%.²⁷⁶ The resulting number of instances for this period is **over 400 million**.²⁷⁷

2. Calculation of Number of Instances of Bad Encounters

228. The number of instances of Bad Encounter Issues by UDAP State Teens on Instagram from February 2018 to March 2024 are summarized in the table below. These figures are further detailed by state and month in Schedules 5.1.1, 5.1.2, and 5.2.

Instances of Bad Encounter Issues by UDAP State Teens on Instagram From February 2018 to March 2024

Description	Schedule	Total Instances (in millions)	Instances, Max. of One Instance per Month per Person (in millions)
Instances, Based On Weekly and Monthly Rate, Assuming No Correlation	5.1.1	2,433	477
Instances, Based On Weekly and Monthly Rate, Assuming 100% Correlation	5.1.2	779	401
Instances, Based On Weekly and Monthly Rate and Frequency	5.2	13,124	

²⁷⁶ Schedule 5.1.2.

²⁷⁷ Schedule 5.1.1.

XIV. Calculation of Number of Teen Monthly Active Persons and Daily Active Persons on Instagram and Facebook, on a Monthly Basis, during the Relevant Time Period.

229. As shown in Schedules 2.1, 2.2, and 2.5, I have presented Teen Monthly Active Persons (MAP) and Daily Active Persons (DAP) counts for each month during the Relevant Time Period.²⁷⁸ These person counts are segregated by platform (IG and FB) and by MDL State. In order to calculate Teen MAP and DAP counts, I divided MAU and DAU counts provided by Meta in Volumes 188R, 188, 215R, and 215 by an estimated user to person multiplier of 1.35 for Instagram and 1.15 for Facebook, as shown in Schedule 2.7. This schedule aggregates a number of sources from Meta's records that provide an estimate of the number of accounts per teen person at different points in time. As shown in Schedule 2.7, Instagram Teen persons are estimated to have on average between 1.19 and 1.60 accounts, with a median in the dataset of 1.35 accounts. I have also compared the MAU and DAU counts in these volumes against the MAU and DAU counts provided on a quarterly basis in Volumes 77R, 77R2, and 77R3,²⁷⁹ and noted that the figures at each quarter end show only small differences relative to Volumes 188R, 188, 215R, and 215. Schedule 2.7 also shows that Facebook Teen persons are estimated to have on average between 1.09 and 1.24 accounts with a median in the dataset of 1.15 accounts. I have chosen to use Volumes 188R, 188, 215R, and 215 for user count data, as (1) this data is provided on a monthly rather than quarterly basis, (2) DAU figures as of the end of each month, rather than a trailing 30 day

²⁷⁸ MAU and DAU are defined in Section VII of this report. MAP and DAP definitions are similar, but are based on persons "P" rather than user accounts "U". Persons can have multiple user accounts on Instagram and Facebook.

²⁷⁹ META3047MDL_VOL077 was superseded by Meta with META3047MDL_RVOL077, which was partially replaced with files from META3047MDL_R2VOL077 and META3047MDL_R3VOL077.

period as of the end of each quarter,²⁸⁰ which are more likely to be impacted by geographic location overcount,²⁸¹ and (3) there is more consistency between DAU and MAU measurements which are both based on counts as of the end of each month.

230. In reviewing all these data sets containing user counts, I noted that for Instagram, there is a significant increase in DAU and MAU counts in July 2021. This pattern appears for all MDL states, and this significant increase largely subsides by approximately January 2022. This observed pattern in Meta's user count data is present in both sets of user data.²⁸² For these time periods, I have applied an adjustment as needed to the user to person ratio of 1.35 such that the resulting MAP counts do not exceed 100% of annual census data for Teens in the same states, in the same time periods. My adjustment is based on a review of the relationship between persons and users for a twelve month period in close proximity to the months were MAP counts required an adjustment. I also note that in this period starting in July 2021, the percentage increase in Meta's DAU as compared to MAU counts are materially different causing the DAU to MAU ratio to drop during this period of several months. This decline in the ratio also occurs across all the MDL states. Meta has not provided an explanation for what is causing this fluctuation in user counts.

²⁸⁰ "Quarterly DAU is calculated as the average number of DAU over the 30-day period ending on the last day of the quarter" (2025.05.20 Meta Ltr. re META3047MDL_RVOL077.pdf). In production letters for Volumes 188R (Instagram) and 215R (Facebook), Meta stated that the initial Volumes 188 and 215 were DAUs, "The data in the prior productions erroneously reflected the number of active users on the last day of the month rather than MAU" (2025.08.05 Meta Letter re META3047MDL_RVOL188 and 2025.08.06 Meta Letter re META3047MDL_RVOL215).

²⁸¹ Email from Covington in July 2025 regarding DAU and MAU in Volume RVOL-077. "if Meta's geographical prediction for a user changes once within a month, then that user will be counted toward the monthly DAU average in both geographies, while that user will be counted in only one geography for MAU..."

²⁸² META3047MDL-077R, 077R2, and 077R3 reflect quarterly user counts. META3047MDL-188, 188R2, 215, 215R, and 215R2 reflect monthly user counts. Both datasets reflect this pattern.

231. I note that the pattern described above for Instagram user counts does not manifest in the Facebook user counts provided by Meta. However, for the data pertaining to Facebook, I did not have inferred age data or teen / non-teen classification for the entire period provided by Meta, although I have reviewed a discovery request issued to Meta for user counts broken down by both inferred and stated age throughout the Relevant Time Period. For periods where Meta has provided inferred age and teen / non-teen classification, I have used this age dimension type rather than stated age, as Meta has represented that it is more reliable.²⁸³ I note that because the user counts provided by Meta contain only stated age for older historical periods, from January 2012 to July 2020, and contain inferred age and the teen / non-teen classification for more recent periods from August 2020 to March 2024, my transition from stated age (13-17) to teen / non-teen classification (teen), results in an observable increase in user counts at the transition point.

XV. Calculation of Unique Teen Persons Active on IG or FB During the Relevant Time Period.

232. In this section, I describe my calculations to estimate the number of unique Teen MAP on the Instagram and Facebook platforms during the Relevant Time Period. The objective of these calculations was to estimate the total Teen persons that were active on IG or FB, in at least one of the months during the Relevant Time Period, without counting any individual Teen more than once.

²⁸³ Deposition Transcript of Edward Carver Wakefield, 29:25-31:13; 49:24-50:16.

1. Methodology

233. I have applied two methods to estimate unique Teen MAPs during the Relevant Time Period. These two methods provide a conservative range of how many unique Teens were active on the IG and FB platforms at some point during that time period. The first method takes the total count of Teen MAPs at the earliest date available during the Relevant Time Period, and adds to this figure the total count of Teen MAPs at each subsequent five-year interval. Since all Teens (ages 13-17) become adults five years later, one can infer that the Teen MAPs at five-year intervals are completely new cohorts of Teens (for example, between 2012 and 2017), that is, none of them were included within the prior cohort of Teen MAPs counted five years earlier. This method is conservative in that it does not capture certain Teen persons who became active on the platform and then disengaged in between the five-year intervals. Such Teen persons would not be in the MAP counts that are five years apart, that are summed together. This method is also conservative in that it would not capture certain Teens who became active after counting its five-year cohort. For example, if a fourteen-year-old user became active one month after my calculation date, that user would not be included in that cohort or the subsequent cohort five years later. Therefore, this methodology likely understates the total number of unique Teen persons during the Relevant Time Period.

234. The second method that I applied, started again with the count of Teen MAPs at the earliest available date within the Relevant Time Period. I then added to this figure the count of 13 year old Teen MAPs at one year intervals after the initial date. Because these individuals would have been 12 years old, and therefore not part of the Teen MAPs a year earlier, they can be presumed to be new additions to the population of active Teens each year.

I also added to my starting figure any *increase* in teen MAPs that would correspond to the same age group from one year to the next. For example, if there were 100,000 fourteen-year-old MAPs in 2018, and 125,000 fifteen-year-old MAPS in 2019, I estimated that there were *at least* 25,000 *new* fifteen-year-olds in 2019, and that the remaining 100,000 fifteen-year-olds were the same fourteen-year-old MAPs that were carrying over from the prior year. In this example, the 25,000 fifteen-year-olds in 2019 were added to my total count of unique Teens that were active on the platforms. This second method is also conservative, in that it assumes only *net increases* in MAPs corresponding to an age cohort are new Teens to the platform, and it ignores Teens that disengage from the platform, which reduce the amount of observed net increase in MAPs for each cohort.

235. Meta did not provide data sufficient to calculate this methodology for IG before February 2018. Therefore, I added IG Teen MAPs in 2012 to each respective IG calculation method to estimate the total IG Teen MAPs during the Relevant Time Period.

2. Calculations

236. As shown in Schedule 6.3.1, I applied the methodology described above to both the Facebook and Instagram platforms in MDL each state. These figures are summarized in the table below.

237. In total, the number of unique MDL State Teen MAPs on Instagram during the Relevant Time Period was conservatively between 28 million and 34 million unique Teens. By including the other states, the range is conservatively between 47 million and 57 million unique Teens.

238. The number of unique MDL State Teen MAPs on Facebook during the Relevant Time Period was conservatively between 19 million and 25 million unique Teens. Including the other states, the range is conservatively between 30 million and 41 million unique Teens.

State	Calculation Method 1 - Lower Bound		Calculation Method 2 - Conservative Estimate	
	Unique IG Teen MAPs (2012 - 2024.03)	Unique FB Teen MAPs (2012 - 2024.03)	Unique IG Teen MAPs (2012 - 2024.03)	Unique FB Teen MAPs (2012 - 2024.03)
Arizona	1,009,346	644,208	1,188,142	872,813
California	5,507,772	3,850,308	6,512,629	4,633,849
Colorado	781,058	534,766	935,915	705,729
Connecticut	499,149	278,138	596,609	390,428
Delaware	130,615	70,095	156,088	97,515
Hawaii	183,884	130,350	221,298	148,296
Idaho	266,490	166,312	326,603	235,465
Illinois	1,872,204	1,246,715	2,217,610	1,688,842
Indiana	1,013,406	641,576	1,209,145	910,997
Kansas	445,409	297,454	545,440	451,598
Kentucky	648,415	434,943	787,424	637,880
Louisiana	687,701	388,622	802,067	553,896
Maine	153,289	118,890	184,566	170,466
Maryland	817,956	461,137	962,396	633,554
Minnesota	785,443	486,456	960,472	687,660
Nebraska	303,961	192,070	359,915	275,828
New Jersey	1,243,761	677,752	1,496,565	938,097
New York	2,401,993	2,025,716	2,929,082	2,491,678
North Carolina	1,519,462	870,620	1,805,746	1,214,639
Ohio	1,665,971	1,051,723	1,995,218	1,463,892
Oregon	554,615	344,347	656,230	471,107
Pennsylvania	1,747,440	1,026,070	2,079,667	1,399,603
Rhode Island	132,319	81,663	165,794	114,128
South Carolina	757,628	432,456	856,969	617,985
South Dakota	111,101	84,495	137,858	124,412
Virginia	1,172,407	756,578	1,434,367	1,000,825
Washington	1,025,804	779,188	1,247,969	863,856
West Virginia	236,498	173,398	277,552	254,792
Wisconsin	821,560	543,373	957,447	766,362
Total MDL States	28,496,658	18,789,417	34,006,784	24,816,192
Other States	19,001,209	11,451,624	22,522,438	15,788,543
Total U.S.	47,497,867	30,241,042	56,529,222	40,604,735

XVI. Calculation of Meta's Under 13 MAPs During Relevant Time Period

239. In this section, I describe my calculations to estimate the number of unique Under 13 MAPs on the Instagram and Facebook platforms during the Relevant Time Period. The objective of these calculations was to estimate the total Under 13 persons that were active on IG or FB, in at least one of the months during the Relevant Time Period, without counting any individual U13 person more than once.

240. Internal Meta emails reflect that Meta noted the presence of millions of U13 users on its platforms. Moreover, Meta tracked and estimated the number of U13 users from 2017 through 2024.

241. In a 2017 report titled “State of US Instagram Teens,” Meta “leverage[d] inferences from both the FB Age Affinity model and the IG Age Affinity model” to estimate there were “at least 4M U13 MAP in 2015.”²⁸⁴ This report further describes “an important takeaway from this plot is the large U13 presence on Instagram.”²⁸⁵

242. The report went on to conclude that as of 2017, it is “likely that the U13 population has grown since 2015 and comprises far more than 17% of teen MAP.”²⁸⁶

243. Further, Meta appears to have systematically categorized U13 users as over 13. Meta states “legally, we cannot predict people to be ≤ 13 , nor manually label users as U13.”²⁸⁷ The report continues, “the age affinity models predict[] people who are under 13 to be 13 and older.”²⁸⁸ Meta also concludes, “We know that we are predicting U13 population to be ≥ 13 .”²⁸⁹

244. In 2021, Meta estimated there were 5 million U13 users on the Instagram platform.²⁹⁰

²⁸⁴ META3047MDL-047-01141332 to 1345 at 1332 and 1337-1338, “This teen MAP estimate includes a large U13 population. There were at least 4M U13 MAP in 2015.”

²⁸⁵ META3047MDL-047-01141332 to 1345 at 1338.

²⁸⁶ META3047MDL-047-01141332 to 1345 at 1338.

²⁸⁷ META3047MDL-047-01141332 to 1345 at 1339.

²⁸⁸ META3047MDL-047-01141332 to 1345 at 1332.

²⁸⁹ META3047MDL-047-01141332 to 1345 at 1338.

²⁹⁰ META3047MDL-111-00194310 to 4330 at 4311 “Previous analysis in 2021 sized this [U13] at 5M.”

245. In an analysis performed by Meta around February 2024, the company estimated U13 users on Instagram to be 20-25% of US Teens aged 13-17.²⁹¹ Within the analysis, Meta used the lower estimate of 20% to calculate the number of U13 MAPs on Instagram to be between 3.4 and 5.0 million.²⁹² This range is calculated as the difference between “IG MAP 0-17” and “IG Teen MAP.”

Statistic	Penetration Assumption						
	65%	70%	75%	80%	85%	90%	95%
US Teen Population (13-17)	21,178,345	21,178,345	21,178,345	21,178,345	21,178,345	21,178,345	21,178,345
IG Teen MAP	13,766,924	14,824,842	15,883,759	16,942,676	18,001,593	19,060,511	20,119,428
IG <13 Assumption	20%	20%	20%	20%	20%	20%	20%
IG MAP (0-17)	17,207,405	18,531,052	19,854,698	21,178,345	22,501,992	23,825,638	25,149,285

246. In Robert Chen’s deposition, he reinforced that Meta was aware of the presence of U13 users on its platforms. Mr. Chen explained source of this information for Meta. “Again, based off of the age affinity model. Of course, like, actual 11-year-olds can’t join Facebook. They have to be 13 and up. But how we got this data was, in the present day, we see that, oh, hey, somebody is, like, I don’t know, 15, for example. And then we see that they’ve been on Facebook -- well, we see that they’re 15 based off of the age affinity model. Again, it’s a prediction. And then we see that they joined four years ago. So we can take 15 minus 4 and backwards deduce, we think they’re 15 now and they’ve been on the platform for four years, then assuming those two things are true, then they were 11 when they initially joined.”²⁹³

²⁹¹ META3047MDL-111-00194310 to 4330 at 4310 “Estimate for U13 relative to US Teens (13-17) 20-25%” (Feb 2024).

²⁹² META3047MDL-111-00194310 to 4330 at 4314. U13 estimated range computed as the difference between “IG MAP 0-17” and “IG Teen MAP.”

²⁹³ Robert Chen Depo. 208:11 - 25

247. Mr. Chen provided another similar example of information Meta had indicating the presence U13 users on Facebook. “So it's not necessarily saying hey, these are tweens at the time of this analysis. It's just, based off of the age affinity model, at some point in the past, our data indicates that they were tweens. So let's say we think that they are 18 today. And then we see, oh, they have been on Facebook for six years. And so just working backwards with those two pieces of data, we're like oh, they joined six years ago. If they are 18 now, based off of this predicted age, then they would have been 12 when they joined, and then they would have been, yeah, tweens.”²⁹⁴

248. Despite evidence that Meta tracked and estimated U13 users, I understand that Counsel has requested data for U13 users over time and that Meta has not produced data responsive to this topic.

249. Therefore, to estimate the number of U13 users on Instagram and Facebook over the Relevant Time Period, I referenced survey data from Thorn. Meta has characterized Thorn's research as “important” and “always measured, quality, and thoughtful.”²⁹⁵

250. In the following sections I describe the methodology, calculations, and results for estimating the number of U13 users on Instagram and Facebook, by state, from 2012 through 2023.

1. Methodology

251. To estimate the number of U13 DAPs during the Relevant Time Period, I reference survey responses from children between the ages of 9 and 12 to a study conducted

²⁹⁴ Robert Chen Depo. 155:15 – 156:1

²⁹⁵ META3047MDL-034-00449437 at 9438 – 9439.

by Thorn and Benson Strategy Group. For each year from 2019 to 2023, the study conducted a survey regarding general platform use among minors. Among other topics, the study published whether the 9-12 year old respondents had “ever used” Facebook or Instagram and whether they used each platform “at least once per day.” Meta had a managed “relationship with Thorn,” “work[ed] with them weekly,” and “supported them on a number of research projects in the past.”²⁹⁶

252. Employees praised the quality and thoughtful research of Thorn. In a May 2021 internal email, Meta referred to research on minors ages 9-17 regarding harmful online experiences and stated “Thorn’s research is always measured, quality and thoughtful.”²⁹⁷ Although the study being discussed in Meta’s May 2021 email is not the exact same one that I rely on for my calculations, it does contain the same response statistics for U13 users on Facebook and Instagram, as discussed in the next paragraph.

253. For Instagram, minors reported using the platform “at least once per day” between 26-40% for the years 2019 to 2023.²⁹⁸ For Facebook, the percentages were 29-45% for the same years. For years prior to 2019, the Thorn study did not publish results for these metrics. Therefore, for Instagram, I estimate the percentage of 9 to 12 year olds on the platform with reference to Instagram’s saturation rate among Teens from 2012 to 2018. For example, as reflected in Schedule 7.1, 9-12 year olds using Instagram on a daily basis averaged approximately 35% of the platform’s Teen saturation rate from 2019 to 2023. I used this percentage with reference to Instagram’s Teen saturation rate from 2012 to 2018 to calculate

²⁹⁶ META3047MDL-034-00449437-9484 at 9437-9438.

²⁹⁷ META3047MDL-034-00449437-9484 at 9438.

²⁹⁸ Schedule 7.4.

the percentage of 9-12 year olds using Instagram at least daily for those years. For Facebook, user trends indicate that Teen users were declining between 2012 and 2018. Therefore, I use the minimum percentage observed in the study, 29%, as a conservative estimate for those earlier years.

254. Next, I apply these percentages to the annual population of U.S. 9-12 year olds to compute the total number of U.S. 9-12 years old daily active persons. This is likely a conservative estimate for multiple reasons. This estimate does not include users under the age of 9, which Meta's documents demonstrate were present on the platform.²⁹⁹ Additionally, this estimate does not include minors that used the platform less than once per day.

255. Finally, I recognize that the percentage DAPs for each state and year may change at different rates between the various states. Therefore, I apportion total U13 DAPs with reference to each states' respective percentage of Teen DAPs. For example, in 2023 California represented 12.3% of Teen DAPs. Therefore, I calculate California's U13 DAPs as 12.3% times the total 4.3 million U.S. U13 DAPs, or 527,000.³⁰⁰

2. Calculations

256. As shown in Schedule 7.1, I applied the methodology described above to both the Facebook and Instagram platforms for each state. In total, the number of DAPs on the Instagram and Facebook platforms during the Relevant Time Period for each MDL State are summarized below. These figures are supported by Meta's internal tracking and estimates that millions of U13 individuals were active on its platforms each year.

²⁹⁹ META3047MDL-034-00162125 at 2127.

³⁰⁰ Schedule 7.1.

9-12 Year Old Instagram Daily Active Persons

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Arizona	37,695	54,771	86,917	95,619	98,337	102,817	123,750	125,555	145,534	98,532	103,248	91,227
California	218,669	317,726	504,205	554,683	570,450	596,443	696,941	730,862	894,462	553,617	600,185	527,370
Colorado	26,359	38,299	60,778	66,863	68,763	71,896	91,018	87,763	97,210	68,344	75,336	73,524
Connecticut	17,786	25,844	41,012	45,118	46,400	48,515	59,713	60,825	68,641	44,268	45,999	43,585
Delaware	4,846	7,042	11,175	12,294	12,643	13,219	14,890	16,215	19,095	13,169	13,726	13,094
Hawaii	7,060	10,258	16,279	17,909	18,418	19,257	21,325	22,932	27,011	20,518	20,727	19,231
Idaho	9,636	14,002	22,219	24,444	25,139	26,284	32,012	30,117	34,571	28,103	28,879	23,457
Illinois	65,418	95,053	150,841	165,943	170,660	178,436	220,502	228,963	252,016	158,420	168,300	160,996
Indiana	35,542	51,643	81,952	90,157	92,720	96,945	117,552	118,380	134,694	93,859	97,379	92,388
Kansas	14,399	20,921	33,201	36,525	37,563	39,274	48,152	48,493	52,826	38,330	42,204	40,530
Kentucky	23,304	33,861	53,734	59,114	60,794	63,564	73,455	77,781	88,102	64,409	65,490	57,244
Louisiana	23,600	34,291	54,418	59,866	61,567	77,971	73,464	88,577	66,858	71,386	62,743	57,244
Maine	5,637	8,191	12,998	14,299	14,705	15,375	18,053	19,095	21,910	14,753	15,886	13,061
Maryland	31,292	45,467	72,153	79,377	81,633	85,353	97,814	105,381	125,235	81,927	86,419	78,248
Minnesota	27,466	39,907	63,330	69,670	71,650	74,915	97,371	93,945	100,553	67,799	84,087	69,933
Nebraska	10,518	15,282	24,252	26,680	27,438	28,688	35,451	35,441	39,350	27,270	34,184	29,582
New Jersey	48,442	70,387	111,698	122,881	126,374	132,132	157,304	162,458	192,433	123,644	134,236	117,728
New York	93,086	135,254	214,637	236,125	242,837	253,902	308,443	324,153	365,694	226,265	230,614	204,478
North Carolina	56,800	82,530	130,968	144,080	148,175	154,927	183,396	188,478	223,644	148,612	157,984	142,043
Ohio	59,976	87,145	138,292	152,136	156,461	163,590	194,665	193,617	241,226	156,938	168,640	149,320
Oregon	18,638	27,081	42,975	47,277	48,621	50,836	62,930	62,793	70,699	47,616	55,949	53,084
Pennsylvania	63,618	92,437	146,690	161,376	165,963	173,525	207,709	213,950	255,071	159,511	167,809	158,014
Rhode Island	5,080	7,382	11,714	12,887	13,253	13,857	15,940	17,205	19,947	13,431	14,165	11,687
South Carolina	25,713	37,360	59,288	65,223	67,078	70,134	79,716	86,293	99,873	70,029	75,172	67,590
South Dakota	3,980	5,783	9,178	10,096	10,383	10,857	12,058	12,498	14,061	12,622	12,404	10,112
Virginia	44,773	65,056	103,238	113,574	116,802	122,125	147,537	150,725	174,660	114,226	123,811	108,809
Washington	35,877	52,129	82,725	91,007	93,594	97,858	117,760	126,008	139,398	88,275	104,776	101,163
West Virginia	8,483	12,325	19,559	21,517	22,129	23,137	28,047	27,552	32,012	23,027	23,020	17,868
Wisconsin	28,369	41,220	65,413	71,962	74,008	77,380	98,893	96,598	105,708	70,490	84,071	71,436
Total MDL States	1,052,063	1,528,647	2,425,839	2,668,700	2,744,560	2,869,614	3,440,370	3,537,539	4,124,212	2,694,861	2,906,087	2,609,544
Other States	651,448	946,555	1,502,105	1,652,487	1,699,460	1,776,896	2,115,200	2,221,518	2,631,489	1,683,566	1,852,268	1,686,858
Total U.S.	1,711,028	2,486,124	3,945,276	4,340,255	4,463,630	4,667,014	5,555,570	5,759,057	6,755,701	4,378,427	4,758,355	4,296,402

9-12 Year Old Facebook Daily Active Persons

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Arizona	105,354	111,356	116,302	111,502	119,537	121,386	122,088	118,123	179,711	118,205	96,149	107,832
California	668,646	636,862	587,211	522,854	453,734	434,153	381,921	371,951	569,591	385,902	395,774	495,007
Colorado	86,582	98,186	107,397	110,790	114,375	114,125	113,980	106,656	157,355	101,716	80,761	90,365
Connecticut	50,602	49,603	49,329	52,171	52,707	50,368	48,422	44,957	64,250	42,546	37,070	43,212
Delaware	11,436	10,515	9,795	9,179	10,048	9,965	9,827	10,605	15,839	11,972	11,032	14,134
Hawaii	22,257	20,403	16,665	12,640	13,146	12,575	12,265	10,169	17,416	12,570	11,618	15,979
Idaho	27,304	30,925	32,978	33,479	36,473	37,689	37,465	34,110	46,373	32,037	28,017	33,203
Illinois	202,853	209,543	214,864	228,333	230,848	234,617	247,239	232,468	369,030	244,470	194,401	219,311
Indiana	96,370	96,604	97,291	100,171	111,675	117,360	130,200	131,081	209,549	150,586	128,258	154,341
Kansas	42,970	44,827	48,465	51,414	58,100	62,345	68,345	70,426	103,897	74,488	61,486	76,789
Kentucky	60,489	58,840	58,064	57,457	63,790	67,282	75,565	86,029	160,470	123,185	106,231	131,859
Louisiana	57,155	50,358	46,642	42,115	48,783	50,205	57,889	64,061	107,341	83,845	74,266	96,253
Maine	19,367	21,846	24,408	26,645	28,270	30,328	31,957	29,775	40,825	30,053	25,574	28,521
Maryland	75,779	69,212	67,752	71,178	73,446	71,734	63,888	64,537	95,019	69,773	67,530	83,397
Minnesota	80,519	82,194	84,385	90,331	92,968	96,005	96,419	93,035	136,762	98,425	83,020	99,864
Nebraska	28,672	30,004	32,400	35,516	39,911	43,321	46,515	45,528	62,564	44,538	37,988	46,510
New Jersey	120,526	110,545	109,077	102,623	110,173	104,436	98,687	93,355	135,468	95,621	89,041	109,670
New York	315,844	303,345	309,699	295,866	285,677	286,793	276,123	269,196	392,914	251,409	226,875	282,496
North Carolina	133,379	130,831	126,941	132,059	133,526	136,184	135,297	135,668	224,696	170,604	156,421	202,696
Ohio	168,999	162,559	159,916	163,917	171,349	179,539	184,554	189,095	314,757	228,000	192,875	225,108
Oregon	59,997	64,989	67,185	67,116	72,191	67,494	63,738	58,659	82,907	56,654	51,959	63,148
Pennsylvania	172,703	169,874	165,387	171,135	177,767	181,650	179,305	176,092	269,511	195,766	166,592	193,359
Rhode Island	13,271	13,039	12,683	13,535	15,037	14,510	14,767	14,793	23,697	15,032	12,410	13,683
South Carolina	62,712	62,594	63,534	64,726	72,139	72,751	80,577	80,872	133,870	99,239	85,285	108,468
South Dakota	11,570	12,462	13,366	14,716	16,762	17,713	19,666	20,708	30,636	23,037	19,735	24,325
Virginia	111,750	129,377	107,821	106,995	113,913	115,086	117,152	115,601	172,545	125,143	112,786	139,287
Washington	109,264	118,476	132,351	129,228	130,841	130,044	119,841	107,119	147,271	100,204	89,755	105,983
West Virginia	23,993	24,795	25,051	24,194	26,486	27,250	32,410	37,208	76,600	57,271	49,151	57,342
Wisconsin	87,417	96,513	101,987	108,990	116,716	121,116	125,464	121,087	176,101	126,574	102,457	117,582
Total MDL States	3,027,779	3,020,678	2,988,945	2,950,874	2,990,389	3,008,025	2,991,567	2,932,964	4,516,966	3,168,864	2,794,517	3,379,726
Other States	1,758,932	1,760,948	1,755,698	1,831,784	1,861,604	1,931,121	1,955,136	1,979,172	3,083,198	2,219,969	1,963,837	2,403,892
Total U.S.	4,786,711	4,781,625	4,744,643	4,782,658	4,851,993	4,939,146	4,946,703	4,912,137	7,600,164	5,388,833	4,758,355	5,783,618

XVII. Calculation of Unique Under 13 Persons Active on IG or FB During the Relevant Time Period.

257. In this section, I describe my calculations to estimate the number of unique under 13 persons active on the Instagram and Facebook platforms during the Relevant Time Period. The objective of these calculations was to estimate the total individuals under 13 that were active on a daily basis on IG or FB, in at least one of the months during the Relevant Time Period, without counting any individual Teen more than once.

1. Methodology

258. I used the same Thorn study referenced above to conservatively estimate the unique number of U13 persons on each platform during the Relevant Time Period. For the years 2019 and 2023, I use percentage of 9-12 year olds that had ever used the respective platform. For example, in 2019, 56% of 9-12 year olds respondents reported having ever used Instagram and 51% reported having ever used Facebook.

259. I then applied this percentage the total U.S. 9-12 year old population for this respective year and apportioned the total by each state's pro rata share of Teens.

260. For 2015, I calculate the percent of U13s that "ever used" the platforms with reference to the rates at which they responded to having used the platform "at least once per day." For Instagram, the daily usage rate was approximately 57% of the ever-used rate between 2019 to 2023 and for Facebook the percentage was approximately 60%. Using this relationship and the U13s active on the platforms daily, I computed the percentage of 9-12 year olds that had ever used the platform as of 2015.

261. This method provides a conservative estimate of how many unique U13 persons used each platform during the Relevant Time Period. The estimate is conservative for multiple reasons.

262. First, I only capture unique cohorts in 2015, 2019, and 2023. Using these years, I can be confident that a respondent would not be captured in multiple cohorts. A person that joined in 2020 as an eleven-year-old would therefore not be counted because they had not used the platform 2019 and would have been too old for the study respondent group in 2023.

263. Second, this method does not consider certain U13s that may have used Instagram or Facebook before age 9. Meta's internal documents reflect that minors as young as 7 were using the Facebook and Instagram platforms,³⁰¹ however these individuals would have been too young to have been included in the Thorn study. Therefore, this methodology likely understates the total number of unique U13 persons during the Relevant Time Period.

2. Calculations

264. I applied the methodology described above to both the Facebook and Instagram platforms in each MDL State. The results are detailed in Schedule 7.2 and summarized in the table below.

265. In total, the number of unique U13 persons active on Instagram during the Relevant Time Period was 15.5 million for MDL States and 25.4 million for the total U.S. The number of unique U13 persons active on Facebook during the Relevant Time Period was 15.9 million for MDL States and 26.6 million for the total U.S.

³⁰¹ META3047MDL-034-00162125-2139 at 2127.