FTC v. Meta

Professor C. Scott Hemphill

May 12, 2025

Assignment

Analyze the competitive effects of Meta's acquisitions of Instagram and WhatsApp

More specifically:

- Assess monopoly power relevant to the conduct

- Assess whether Meta has harmed competition through the acquisitions

Economic Framework

1. Examining whether the firm possesses monopoly power

2. Examining whether the firm's acquisition harmed competition:

    a. Is the acquisition likely, by eliminating the target as a competitive constraint, to preserve the firm's monopoly position?

    b. Are competition and consumers harmed by the elimination of the competitive constraint?

    c. Are there procompetitive effects of the acquisition, dependent upon the acquisition for their achievement, that are large enough to prevent the competitive harms?

Opinions

1. Meta has monopoly power over personal social networking services in the United States and has held monopoly power throughout the relevant period.

2. Meta's acquisitions of Instagram and WhatsApp harmed competition and consumers of personal social networking services in the United States.

Source: PX9000 (Hemphill Report) at ¶¶ 9-55.

PDX0090-004

Opinion 1:   Meta Has Monopoly Power Over Personal Social Networking Services in the United States and Has Held Monopoly Power Throughout the Relevant Period

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Opinion 1: Roadmap

1.1 – Key evidence and concepts

- Nature of Meta's product offering
- Distinct demand for friends and family social networking product
- Monopoly power in a zero-price context
- Network effects and norms, and their implications for customer substitution
- Competition is not symmetric

1.2 – Economic evidence of monopoly power

- Indirect evidence (market definition, market shares, and entry barriers)
- Direct evidence (high profits, profitable increases in ad load and other quality reductions, price discrimination)
- Import of other activities on Facebook and Instagram

1.3 – Responses to Meta's arguments

1.1 – Key Evidence and Concepts

The Relevant Product: Friends and Family Social Networking ("Personal Social Networking Services")

Mark Zuckerberg

"We built Facebook to help people stay connected and bring us closer together with the people that matter to us. That's why **we've always put friends and family at the core of the experience**. Research shows that strengthening our relationships improves our well-being and happiness."

Facebook Post by Mark Zuckerberg
(Jan. 11, 2018)

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Distinct Demand for Friends and Family Social Networking

Kevin Systrom (Instagram)

"Q. Was sharing one's life with friends and family through photos a core use case of Instagram?

A. Yes."

Kevin Systrom Trial Testimony (Apr. 22, 2025)

Bradley Horowitz (Google+)

"Q. Did Google intend one of Google+'s core use cases to be connecting users with their friends and family?

A. Yes."

Bradley Horowitz (Google+) Testimony (May 17, 2023)

Dave Morin (Path)

"Path is the personal social network that is the best way to share life and stay connected with family and friends."

Path's iOS App Store Description (January 1, 2013)

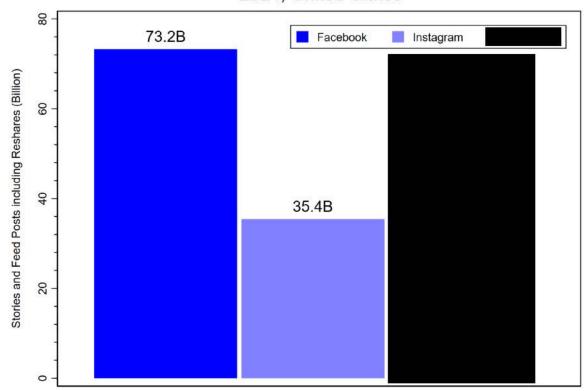# This Distinct Demand Is Large and Important

139m users posted
100m users posted original broadcast posts
78m users left birthday posts
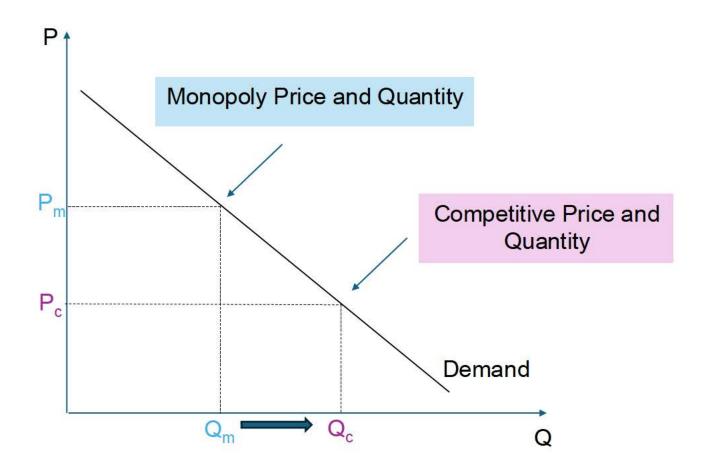**45m** users posted Stories posts

106m users posted
63m users posted photos in Stories
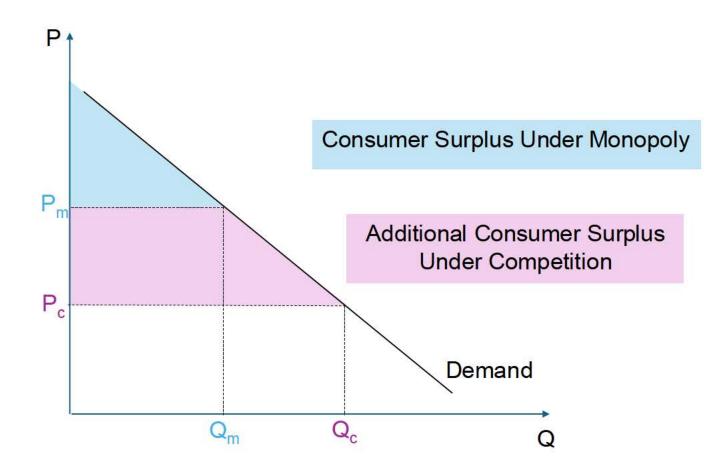**59m** users posted photos in Feed
56m users posted videos in Stories

Data are monthly averages over the period of Jan. 2021 to June 2022 for the United States.

Stories and Feed Posts
2021, United States

Legend: Facebook, Instagram

73.2B (Facebook)
35.4B (Instagram)

Y-axis: Stories and Feed Posts including Reshares (Billion) — 0, 20, 40, 60, 80

Competition Increases Output

Source: PX9000 (Hemphill Report) at ¶¶ 12-16, 154-161, 790-799.

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PDX0090-011

Competition Increases Consumer Surplus

Source: PX9000 (Hemphill Report) at ¶¶ 12-16, 154-161, 790-799.

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PDX0090-012

Monopoly Power for a Zero-Price Product

- Monetary price of $0 does not signal a lack of market power.

- Quality dimensions for PSN services
  - Level of ad load
  - Volume of data collected and privacy practices
  - Friends-and-family content
  - Reliability, integrity, ease of use, and other customer service attributes

"[Google+] will have the same impact on us as competition has in every industry – **we will have to be better to win, our margins may go down over time**, we will no longer be able to make as many mistakes and hold onto our core users."

Email from Sheryl Sandberg to Meta Employees (July 15, 2011)

Source: PX9000 (Hemphill Report) at ¶¶ 36-38, 51-53, 106, 181; PX2527 at -001.

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PSN Apps Are Characterized by Strong Network Effects

"User growth precedes user engagement. It is not until **all your friends are on the network** that you can really enjoy the benefits with associated greater engagement."

Meta Document: "Facebook Secret Sauce"
(Nov. 11, 2008)

"In building social software, there is a network effect. Favorite feature on FB is hard to copy (**all my friends are there**)."
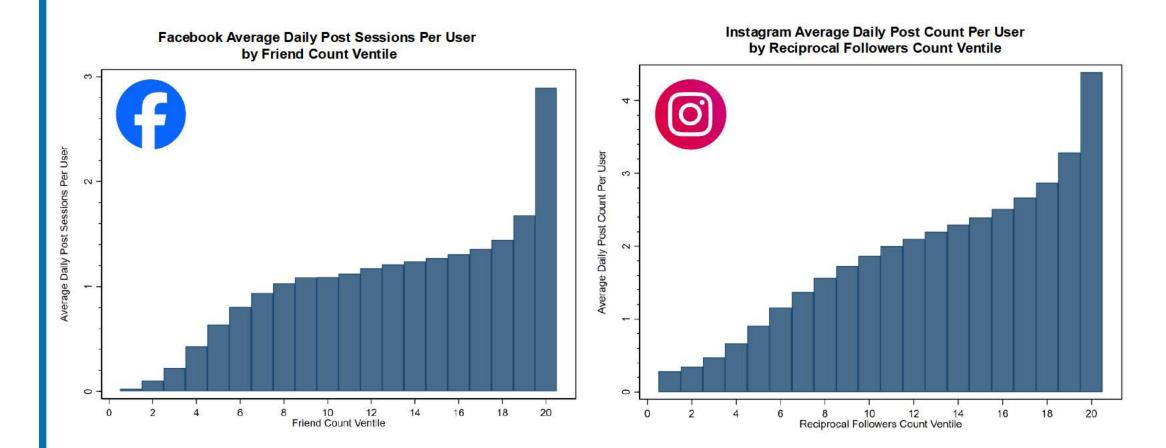
Bradley Horowitz (Google+) Talking Points
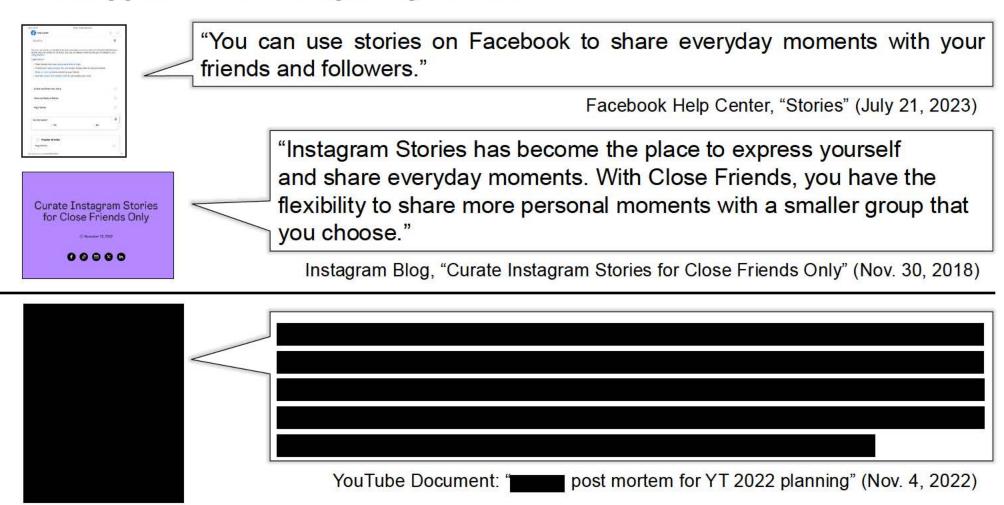(May 13, 2010)

"Getting in front of consumers and building **network effects is what builds the staying power of a network** so that someone can't just come along and found another Instagram or a copycat. If you are able to grow it quickly, then you can have those network effects and that staying power and then you can figure out the advertising stuff after."

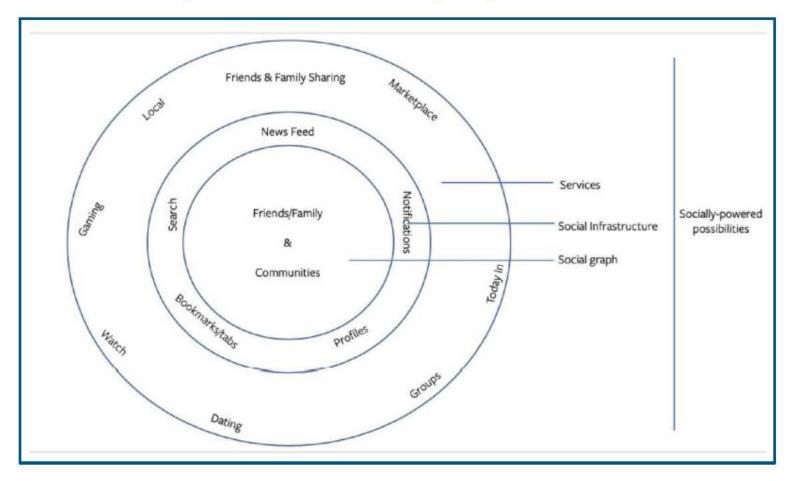Kevin Systrom Trial Testimony
(Apr. 22, 2025)

Source: PX9000 (Hemphill Report) at ¶ 210, §3.2.5; PX3189 at -003; PX11312 at -007; Systrom Trial Tr. (Apr. 22, 2025) at 60:6-15.

PSN Apps Are Characterized by Strong Network Effects

Facebook Average Daily Post Sessions Per User by Friend Count Ventile

Instagram Average Daily Post Count Per User by Reciprocal Followers Count Ventile

Source: PX9000 (Hemphill Report) at Exs. 3, 5.

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PDX0090-015

PSN Apps Are Also Shaped by Norms

"You can use stories on Facebook to share everyday moments with your friends and followers."

Facebook Help Center, "Stories" (July 21, 2023)

"Instagram Stories has become the place to express yourself and share everyday moments. With Close Friends, you have the flexibility to share more personal moments with a smaller group that you choose."

Instagram Blog, "Curate Instagram Stories for Close Friends Only" (Nov. 30, 2018)

YouTube Document: "▮▮▮▮ post mortem for YT 2022 planning" (Nov. 4, 2022)

PDX0090-016

Competition Is Not Symmetric: Meta Incorporated Other Activities into Its Friends and Family Social Networking Experience

Meta Document:
"What Is a Service?"
(May 22, 2019)

Source: PX9000 (Hemphill Report) at ¶¶ 265-272; PX3575 at -001.

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PDX0090-017

Competition Is Not Symmetric: Meta Incorporated Other Activities into Its Friends and Family Social Networking Experience

Adam Presser (TikTok)
Trial Testimony
(Apr. 30, 2025)

TikTok Does Not Offer Friends & Family Sharing	Meta Encroaches on TikTok's "Turf"
"Q. Is it still the case today, as we sit here, as it was in 2024 that in your view, Facebook and Instagram are focused on users' interactions with existing friends and family, whereas TikTok differs from them in that respect? A. Yes."	"Q. I mean, given the fact that Meta has launched an Instagram Reels view that appears to look similar to TikTok, do you think that Meta competes with TikTok just by fast following or innovating? A. I think it's one of the ways that they compete with us. I think they have essentially looked at the product experience that we have offered and that's been recently successful, and they have built a version of that into their existing product."

Source: PX9000 (Hemphill Report) at ¶ 533; Presser Trial Tr. (Apr. 30, 2025) at 49:7-15, 51:18-22.

Competition Is Not Symmetric: Meta Incorporated Other Activities into Its Friends and Family Social Networking Experience

Aaron Filner (YouTube)
Trial Testimony
(Apr. 17, 2025)

YouTube Does Not Offer Friends & Family Sharing	Meta Encroaches On YouTube's "Turf"
"Q. And does YouTube shorts facilitate engagement with friends and family you know in real life? A. There is no features facilitating friends and family communication on shorts. Q. And on long-form video, is there currently any features that facilitate connection with friends and family on long-form videos? A. Not that I'm aware of."	███████████████ ████████████████ ███████████████ ██████████████ ██████████████ ████████████ ████████████████ █████████████████ ███████ YouTube Document: "█████ post mortem for YT 2022 planning" (Nov. 4, 2022)

PDX0090-019

Competition Is Not Symmetric: Meta Incorporated Other Activities into Its Friends and Family Social Networking Experience
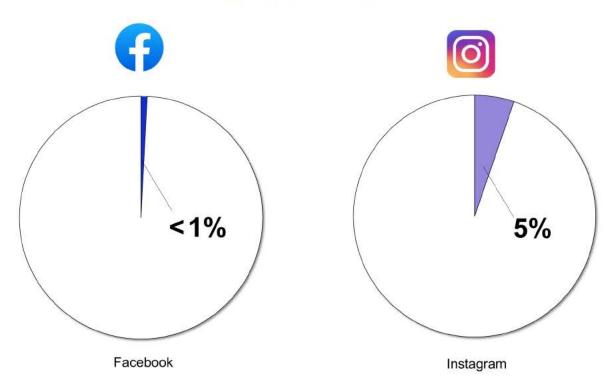
Julia Roberts (Pinterest)
Trial Testimony
(Apr. 28, 2025)

Pinterest Does Not Offer Friends & Family Sharing	Meta Encroaches On Pinterest's "Turf"
"Q. How about for sharing and keeping up with friends and family? Is that a common use on Pinterest? A. No."	"Q. This is describing Meta launching new features that encroach on Pinterest's core product; is that right? A. Yes . . . . Q. In your time at Pinterest, have you seen Facebook or Instagram launch new features that encroach on Pinterest's core product? A. Yes."

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PDX0090-020

Facebook and Instagram Are Firmly Grounded in Friends and Family Usage

Daily Active Reels Users Not Using Feed or Stories
April 24-30, 2022, United States

<1%

Facebook

5%

Instagram

Note: Feed use defined as at least 30 seconds on Feed.
Source: PX9000 (Hemphill Report) at ¶¶ 656-659, Appendix Exs. C-45, C-47.

PDX0090-021

Competition Is Not Symmetric: Price Discrimination

∞ Meta

Privacy Policy

Here's the information we collect:

Your activity and information you provide	>
Friends, followers and other connections	>
App, browser and device information	>
Information from partners, vendors and other third parties	>

Meta Privacy Policy
(Last accessed Mar. 7, 2025)

"Types of content, including ads, you view or interact with, and how you interact with it"

"Apps and features you use, and what actions you take in them"

"The time, frequency and duration of your activities on our Products"

Source: PX9000 (Hemphill Report) at §3.3.2.4; PX0722 at -004 to -007.

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Competition Is Not Symmetric: Price Discrimination

Introducing "SALT" (Smart Ad Load Techniques)

	Technique	Technique Description	FB Status	IG Status
Personalized Ad Load	Sensitivity-based	Personalize ad load based on users' sensitivity towards ads (how much do we expect a user's topline organic metrics to regress if we increase their ad load) as predicted by an ads sensitivity model we trained and built. e.g. Decrease ad load for users who are very sensitive to ads and increase ad load for users who are less sensitive to ads.	FB found UDV to be strongly correlated with user ad sensitivity so implemented a version of sensitivity-based adload using UDV (see next row). We are continually looking into other user signals (e.g. ad engagement, content consumption, etc) that we can use to predict ad-sensitivity.	Launched engagement-positive version for Feed in Apr'20 to win back organic impressions and Feed TS while keeping EBR neutral. Revenue-positive versions are in testing for Feed.

"Personalize ad load based on users' sensitivity towards ads (how much do we expect a user's topline organic metrics to regress if we increase their ad load)"

Meta Document: "Introducing 'SALT' (Smart Ad Load Techniques)" (2020)

Source: PX9000 (Hemphill Report) at §3.3.2.4; PX15438 at -001.

1.2 –   Economic Evidence of Monopoly Power

Economic Evidence of Monopoly Power

- **Direct evidence** focuses on the features and conduct of the firm itself. It includes evidence of persistent high profitability and profitable increases in price or reductions in quality.

- **Indirect evidence** evaluates a firm's competitive significance within a well-defined relevant antitrust market. Persistently high share in a relevant antitrust market, protected by barriers to entry and expansion, indicates monopoly power.

1.2 (A) – Relevant Market: Personal Social Networking Services in the United States

Market Definition: Hypothetical Monopolist Test

- **Approach:**
  - Start with a candidate market and consider a "hypothetical monopolist": a single firm with control of all producers of the product
  - Ask: would the hypothetical monopolist profitably set lower quality, compared to competition
  - Use the best available qualitative and quantitative evidence to evaluate this question

- **Here:**
  - Would a single firm controlling Facebook, Instagram, and other PSN apps profitably set a lower quality, compared to competition

Source: PX9000 (Hemphill Report) at ¶¶ 170-188.

PDX0090-027

Relevant Market: Personal Social Networking Services in the United States

- **Nature of the product**: online means for people to connect and maintain relationships with friends, family, and other personal connections in a shared social space ("friends and family sharing")

- **Market participants**: apps ("PSN apps") that have core use and functionality for maintaining relationships and sharing with friends, family, and personal connections in a shared social space

- **Geographic scope**: United States

Notable Characteristics of PSN Apps

- **Core Use** for sharing and maintaining relationships with friends and family in a shared social space

- **Core Functionality**
  - Social graph connecting users to friends and family
  - Shared social space (e.g., feed) used for sharing with friends and family

Core Use: Ordinary Course Recognition

"Family and Friends is our core use case and the one that has contributed most to our core social assets."

Meta Presentation: FB App Leadership Mtg (Mar. 28, 2019)

"IG is first and foremost about connecting with friends and family"

Meta Document: Checkout Press Narrative (Mar. 18, 2019)

"We used this framework called jobs to be done where you try to figure out what job effectively is your product serving for your customer. You try to make it better at that."

Keith Coleman Trial Testimony (Apr. 28, 2025)

"Q. Today, what is the core use case of YouTube?
A. The core use case of YouTube is watching video."

Aaron Filner Trial Testimony (Apr. 17, 2025)

PDX0090-030

Market Definition: PSN Apps

Leading PSN Apps

Facebook

Instagram

Snapchat

Smaller and Foreign Apps

MeWe

BeReal.

VK

LINE

WeChat

Defunct Apps

myspace
a place for friends

Path

g+

orkut

friendster

Source: PX9000 (Hemphill Report) at § 3.2.2.

PSN Apps Serve Distinct Demand for Friends and Family Sharing

	Core Use for Friends and Family Sharing	Social Graph of Friends and Family	Shared Social Space for Broadcast Sharing with Friends and Family
Facebook	**Yes** - "Family and Friends is our core use case and the one that has contributed most to our core social assets." [1]	**Yes** – "[W]e should continue to leverage social graph (e.g., family and friends, community) as FB's superpower . . . ." [2]	**Yes** - "From Home, you can . . . see what your connections are sharing on Feed and in Stories . . . ." [3]
Instagram	**Yes** - "IG is first and foremost about connecting with friends and family" [4]	**Yes** - "[T]he social graph on Instagram . . . would be referring to the accounts that you follow . . . . I do think that would probably be a subset of all of your actual relationships in real life." [5]	**Yes** – "Feed and Stories are places where people want to see content from their friends, family, and those they are closest to." [6]
Snapchat	**Yes** - "When you have a minute in your day and are curious about what your friends are up to, you can jump into their experience." [7]	**Yes** – "Q. Does Snapchat have a social graph? A. Yes. Q. Has Snapchat always had a social graph? A. Yes." [8]	**Yes** – Snap developed Stories because "we heard from our community that they wanted a way to communicate to all of their friends at once." [9]
MeWe	**Yes** [10]	**Yes** [11]	**Yes** [12]

Source: PX9000 (Hemphill Report) at ¶¶ 206, 207, 209, 235, 269, 275, 280, 290, 292, 317, 319; [1] PX3006 at -008; [2] PX3007 at -002; [3] PX0797 at -006; [4] PX3005 at -001; [5] Mosseri Dep. Tr. (Mar. 29, 2023) at 256:16-257:13; [6] PX12542 at -003; [7] Ellis Hamburger, Snapchat's Next Big Thing: 'Stories' That Don't Just Disappear, THE VERGE (October 3, 2013); [8] Andreou Dep. Tr. (May 3, 2023) at 181:18-183:2; [9] Andreou Dep. Tr. (May 3, 2023) at 196:11-198:5; [10] Weinstein Dep. Tr. (Apr. 28, 2023) at 365:17-365:18; [11] Weinstein Dep. Tr. (Apr. 28, 2023) at 273:5-273:22; [12] Weinstein Dep. Tr. (Apr. 28, 2023) at 276:19-277:21.

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Other Social Media Apps Are Not Reasonable Substitutes

Other social media apps lack core use and functionality for friends and family sharing

1. No norm and use for personal sharing; actively contrary norms

2. No social graph of friends and family

3. No shared social space used for friends and family sharing

Entertainment Consumption Apps	Interest-Based Network Apps	Specialized Social Networking Apps
YouTube TikTok Twitch	X (Twitter) Reddit Pinterest	LinkedIn Nextdoor Strava

Source: PX9000 (Hemphill Report) at § 3.2.2.4.

PDX0090-033

Substitutability Depends on Core Use

YouTube Document: "▮▮▮▮▮ post mortem for YT 2022 planning"
(Nov. 4, 2022)

"Lots of people use Twitter. It's very public. And I think it – that serves a purpose really well. That makes it a good place to see what's happening in the world . . . . **[T]hat model is probably a large reason why people don't use it to see what their friends and family are doing** because for that they might want a more private space."

Keith Coleman (Twitter/X) Testimony
(May 16, 2023)

"Interest-centric platforms like Reddit and Twitter face the challenge that their communities are often **built around pseudonymity, so unclear on fit with coexistence of friends at scale**."

Email from Meta Employee to Tom Alison
(July 7, 2021)

Source: PX9000 (Hemphill Report) at ¶ 26; PX13495 at -003; Coleman Dep Tr. (May 16, 2023) at 99:15-100:1; FTC-META-010019410, at -410.

PDX0090-034

Substitutability Depends on Core Use

"Q. And it may not be easy for a social network like LinkedIn that is primarily used for professional interactions to convince users to start thinking of LinkedIn as a place to post personal updates, photos and videos. . . . Is that an accurate statement? . . . .

A. Yes."

Kumaresh Pattabiraman (LinkedIn) Testimony
(Apr. 29, 2023)

"Q. Based on your experience of Strava, do users share non-fitness related content on Strava?

A. I haven't really seen that to be the case. . . .

Q. Do users typically post -- typically use Strava to share baby pictures?

A. Only if the baby is in a stroller during a run. . . .

Q. Why not?

A. At the end of the day, the atomic unit of Strava is the activity, so it's all about fitness. And while you can post other stuff, it just doesn't seem as relevant as -- again, a run with a baby is very interesting."

Mateo Ortega (Strava) Trial Testimony
(Apr. 28, 2025)

YouTube: Not a Reasonable Substitute

Aaron Filner (YouTube)
Trial Testimony
(Apr. 17, 2025)

"Q. Today, what is the core use case of YouTube?
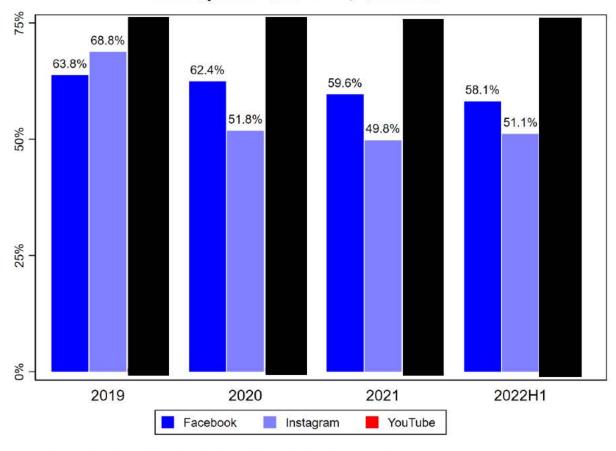
A. The core use case of YouTube is watching video."

"Q. And does YouTube facilitate connection with friends and family as a part of its service?

A. It's not its focus. You can subscribe to anyone who has a channel, and those people may know each other, but that would be incidental."

"Q. And does YouTube have a social graph based on friend and family connections?

A. It does not."

PDX0090-036

YouTube: Not a Reasonable Substitute

Share of Monthly Active Users That Post
January 2019 – June 2022, United States

	2019	2020	2021	2022H1
Facebook	63.8%	62.4%	59.6%	58.1%
Instagram	68.8%	51.8%	49.8%	51.1%

Legend: ■ Facebook ■ Instagram ■ YouTube

Note: January 2019 – June 2022 (Facebook and Instagram), July 2019 – June 2022 (YouTube), United States.
Source: PX9000 (Hemphill Report) at ¶ 524, Ex. 28.

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TikTok: Not a Reasonable Substitute
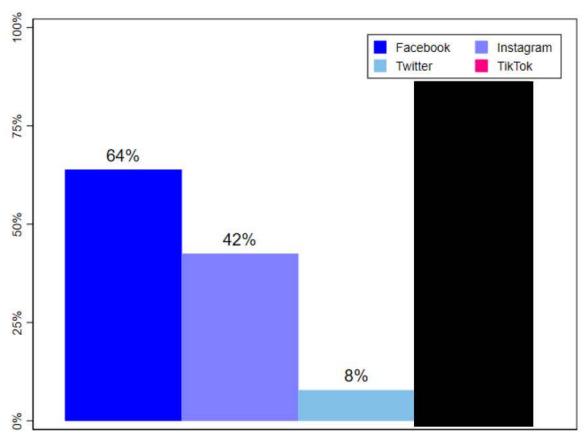
Adam Presser (TikTok)
Trial Testimony
(Apr. 30, 2025)

"Q. Why do TikTok's users use its product?

A. I think our users use the product because they find it to be a **very entertaining, enriching, enlivening experience**. Ultimately everything we do is to try and create that joyful, creative experience."

"Q. Is it still the case today, as we sit here, as it was in 2024 that in your view, Facebook and Instagram are focused on users' interactions with existing friends and family, whereas TikTok differs from them in that respect?

A. Yes."

"Q. What features do you have in mind as core differentiated features that distinguish TikTok from Facebook and Instagram?

A. I think **TikTok has really been built on the concept of a content graph or an interest graph**. So a user will experience essentially their portfolio of interests . . . . I think of Instagram and Facebook as really being built on the social graph, really essentially having the foundation be the network of contacts or people that you know, and then content is essentially built on top of that."
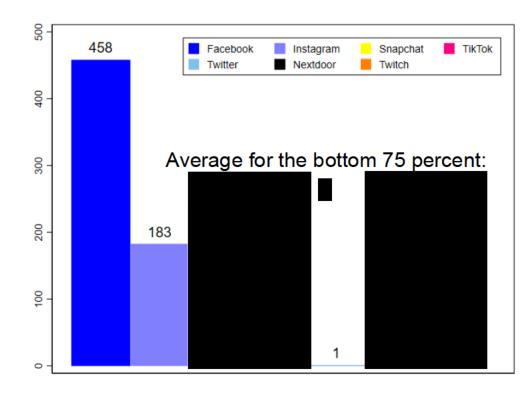
PDX0090-038

TikTok: Not a Reasonable Substitute

Share of Friends (or Reciprocal Connections) in Total Connections
January 2022 to June 2022, United States

Source: PX9000 (Hemphill Report) at Ex. 21.

TikTok: Not a Reasonable Substitute

Average Number of Friends (or Reciprocal Connections) Per User
January 2022 to June 2022, United States
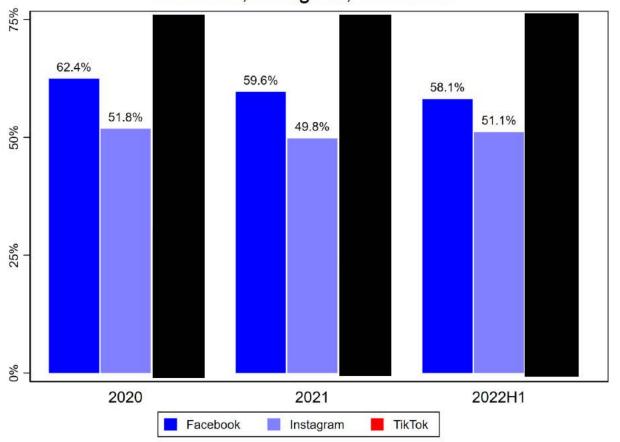
Reciprocal Connections: Facebook and Instagram as Multiples of TikTok

		2025
Facebook	■	15 x
Instagram	■	4 x

PDX0090-040

TikTok: Not a Reasonable Substitute

Share of Monthly Active Users That Post
Facebook, Instagram, and TikTok

Legend: Facebook, Instagram, TikTok

	2020	2021	2022H1
Facebook	62.4%	59.6%	58.1%
Instagram	51.8%	49.8%	51.1%

Source: PX9000 (Hemphill Report) at Ex. 29.

PDX0090-041

TikTok: Not a Reasonable Substitute
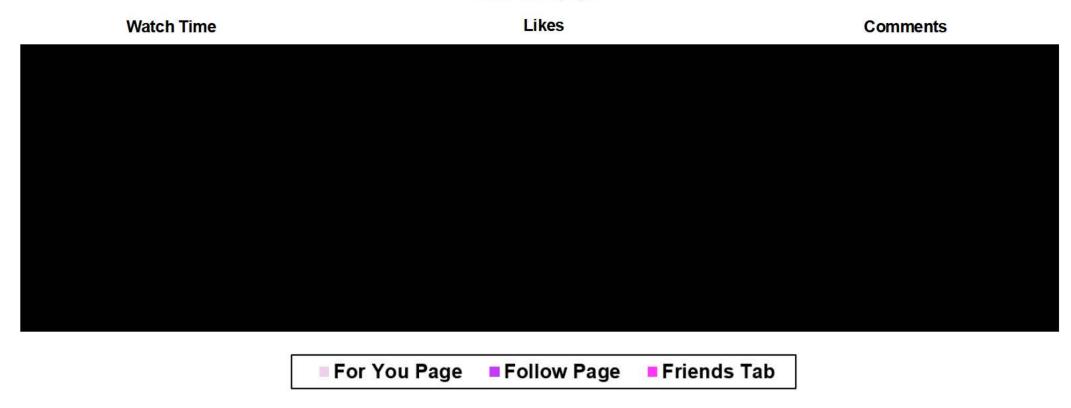
Engagement on TikTok by Surface
United States, April 2023
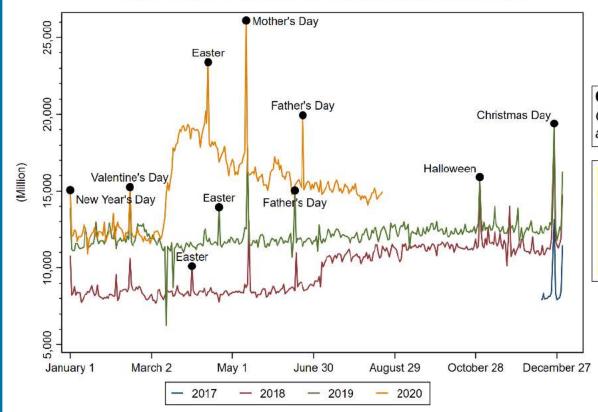
Watch Time	Likes	Comments

■ For You Page ■ Follow Page ■ Friends Tab

PDX0090-042

PSN Apps See Spike in Usage on Friends and Family Holidays

Facebook Meaningful Social Interaction Score (Excluding Messages)
Daily data for December 15, 2017 to August 19, 2020, United States

Cultural Moments on Snapchat
Cultural moments provide us with a unique growth opportunity because they allow us to connect with our users and celebrate their culture.
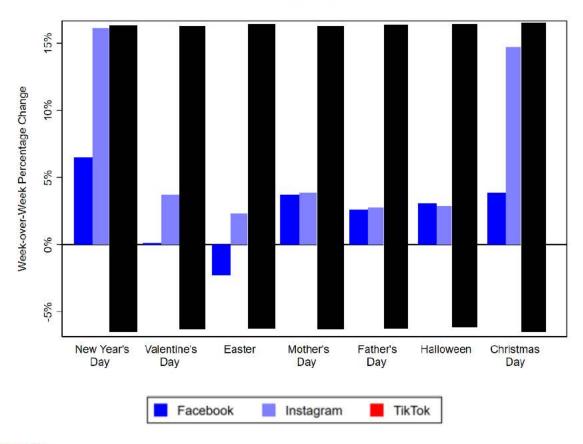
Natural Conversation Starters	**Meeting Users Where They are in Their Life**	**Unique Experiences only on Snap**
Holidays give users a reason to connect with friends and family	We see organic engagement and DAU uplifts during important cultural moments.	Snapchat gives users a more personal and creative way to celebrate holidays with friends and family

Snap Document: Business Review - Growth
(Sept. 15, 2021)

Source: PX9000 (Hemphill Report) at Ex. 18; PX9007 (Hemphill Rebuttal) at ¶ 326; PX7094 at -079.

TikTok: Not a Reasonable Substitute

Week-over-Week Changes in Time Spent on Friends and Family Holidays
Facebook, Instagram, and TikTok

Note: Data spans various years for each platform.
Source: PX9000 (Hemphill Report) at Ex. 30.

Other Apps Lack Core Use and Functionality for Friends and Family Sharing
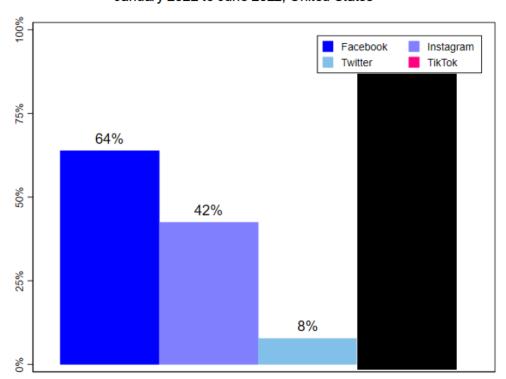
	Core Use?	Social Graph?	Shared Social Space?
Specialized Social Networking Apps	Specialized Social Networking	Social Graphs of Specialized Connections	Broadcast Sharing of Specialized Content
Interest-Based Network Apps	Interests	Interest Graphs	Public Sharing of Interest Content
Entertainment Consumption Apps	Entertainment	Content Graphs	Public Streams of Video Content

Source: PX9000 (Hemphill Report) at § 3.2.2.4.

Other Apps Lack Core Use and Functionality for Friends and Family Sharing
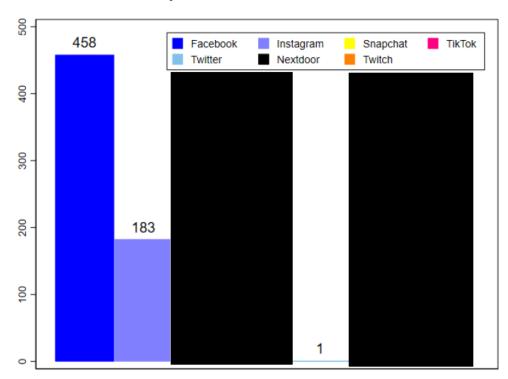
		Core Use of Friends and Family Sharing?	Social Graph of Friends and Family?	Shared Social Space for Broadcast Sharing with Friends and Family?
Specialized Social Networking Apps	LinkedIn	Professional Social Networking	No – Professional Connections	No – Feed of Professional Content
	Nextdoor	Proximity-based Social Networking	No – Neighbors in a Local Neighborhood	No – Feed of Local Content
	Strava	Fitness Social Networking	No – Athletes	No – Feed of Athletic Activities
Interest-Based Network Apps	Twitter	Public Discussion	No – Public Figures Following	No – Public Town Square
	Reddit	Community Conversations	No – Anonymous Subreddits	No – Public Discussion Forums
	Pinterest	Visual Discovery	No – Taste Graph	No – Virtual Pin Board
Entertainment Consumption Apps	YouTube	Video Entertainment	No social graph	No – Public Video Publishing
	TikTok	Video Entertainment	No – Content Graph	No – "For You" Public Video Feed
	Twitch	Live Video Entertainment	No social graph	No – Public Video Stream

Source: PX9000 (Hemphill Report) at § 3.2.2.4; *see* Appendix A for citations.

Other Apps Lack Core Use for Friends and Family Sharing: Reciprocal Connections

Share of Friends (or Reciprocal Connections) in Total Connections
January 2022 to June 2022, United States

Legend: Facebook, Instagram, Twitter, TikTok

- Facebook: 64%
- Instagram: 42%
- Twitter: 8%

Average Number of Friends (or Reciprocal Connections) Per User
January 2022 to June 2022, United States

Legend: Facebook, Instagram, Snapchat, TikTok, Twitter, Nextdoor, Twitch

- Facebook: 458
- Instagram: 183
- 1

Source: PX9000 (Hemphill Report) at Exs. 20, 21.

PDX0090-047
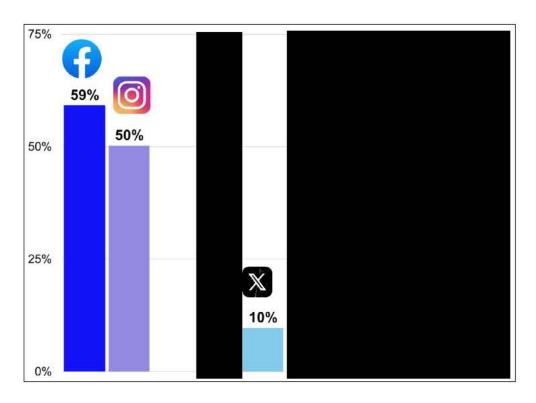
Other Apps Lack Core Use for Friends and Family Sharing: Posting Participation

Share of Monthly Active Users that Post
PSN and Non-PSN Apps
January 2021 – June 2022, United States
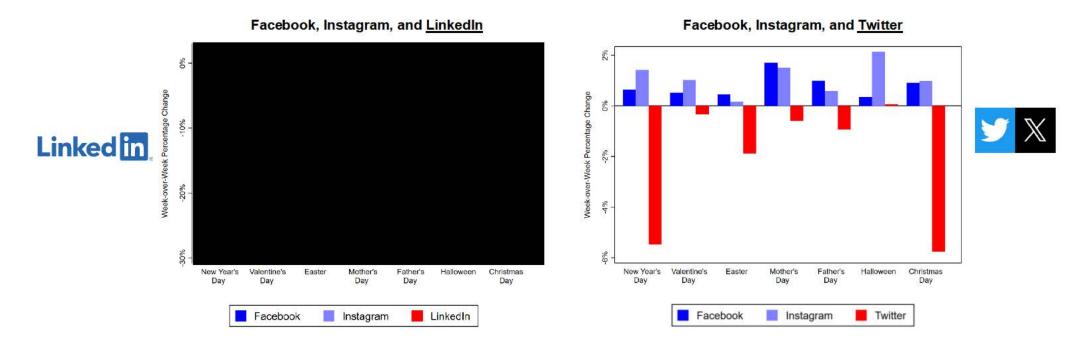
Note: Data for LinkedIn is worldwide.
Source: PX9000 (Hemphill Report) at Ex. 22; DX1307 at 37.

PDX0090-048
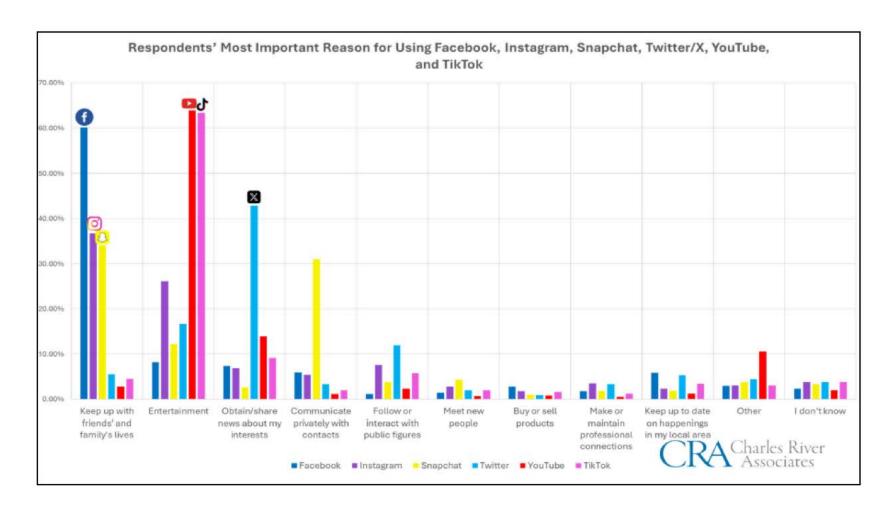
Other Apps Lack Core Use for Friends and Family Sharing: Holiday Usage

Week-over-Week Changes in Daily Active Users on Friends and Family Holidays

Facebook, Instagram, and LinkedIn

Facebook, Instagram, and Twitter

Note: Data spans various years for each platform.
Source: PX9000 (Hemphill Report) at Exs. 23, 25.

Surveys Indicate Distinct Core Uses: PSN Apps vs. Other Apps

Respondents' Most Important Reason for Using Facebook, Instagram, Snapchat, Twitter/X, YouTube, and TikTok

Legend: Facebook, Instagram, Snapchat, Twitter, YouTube, TikTok

Mobile Messengers Are Not Reasonable Substitutes

Mobile messengers are a distinct product offering, serving a distinct form of demand:

1. Private messaging of one-to-one and one-to-few

2. Direct immediate communication

3. Different contacts

Facebook Messenger

WhatsApp

iMessage

Google Messages

Signal

PDX0090-051

Mobile Messengers Are Designed and Used for Private Communication

	Core Use	Social Graph?	Shared Social Space?
Mobile Messengers	Private Communication	Contact Lists Rather Than a Social Graph of Connections Between Users	Limited or No Feed or Broadcast Capability

Ronak Shah (Apple)
Trial Testimony
(Apr. 29, 2025)

"Q. Are you aware of Apple ever offering . . . this sort of broadcast feature or feed functionality to its Messages application in the past?

A. No . . . .

Q. Does Apple build its Messaging product around a social graph?

A. No.

Q. Why hasn't Apple built its Messaging product around a social graph?

A. Messages isn't about . . . discovering new people. It's about communicating with the people that are in your life that you know, and so we've been focused on making that a great experience, not on user discovery or a social graph."

Source: PX9000 (Hemphill Report) at § 3.2.2.5; Shah Trial Tr. (Apr. 29, 2025) at 220:9-25.

PDX0090-052

Mobile Messengers Are Designed and Used for Private Communication

Will Cathcart
Trial Testimony
(May 7, 2025)

"Q. Over 90 percent of messages sent on WhatsApp are sent between one WhatsApp user and one other WhatsApp user, correct?
A. Roughly, yes.
Q. Those types of communications are called one-to-one messages, right?
A. Yes."

Javier Olivan
Trial Testimony
(Apr. 29, 2025)

"Q. And you recognize that in a way, the difference [between Facebook Blue and WhatsApp] was only ranking?
A. No. I mean, that's not quite true. . . . [I]t doesn't do profiles with rich information. It doesn't do things like Marketplace. It doesn't do at the time things like status or like really broadcast. . . . There was no way to add friends inside WhatsApp other than you had to add a contact in your address book to be available."

PDX0090-053

PSN Apps and Mobile Messengers Serve Distinct Demand

"From a user's perspective, a social networking service is not a substitute for a consumer communications service (or vice versa). Users of consumer communication services want to exchange urgent messages with a single recipient or a small group of their inner circle."

Facebook/WhatsApp
Responses to EC Questions
Regarding WhatsApp
Transaction (2014)

"Q.   Did you consider the services offered by **Hangouts to be different than the services offered through Google+?**

A.   Yes.

Q.   In what ways were they different?

A.   **The fundamental value proposition** for an end user for Hangouts **was the ability to message specific people.**

"So the fundamental promise for a messaging platform to the end user sending the message, is that message will get delivered to that end user or fail. We don't have that same promise for what we would call a social networking product in Google at that time."

Matthew Leske
(Google) Testimony
(Apr. 21, 2023)

PDX0090-054

PSN Apps and Mobile Messengers Serve Distinct Demand

Javier Olivan
Trial Testimony
(Apr. 29, 2025)

"Q. You consider messaging and sharing via an app like Facebook to be related but **offering different values for users**, right?

A. **Yes.**"

"Q. For certain types of things, it's more efficient to share them on Facebook to all friends in your experience?

A. I think **if I wanted to announce that I just bought a new dog to all my friends and everybody I know, Facebook is very effective**. I post it one time, and it will show on the feeds of everyone that is my friends and care about my content."

Chris Daniels
VP of WhatsApp
Testimony
(Jan. 19, 2023)

"Q. Did the WhatsApp and Facebook team have different guiding principles?

A. I don't know if the guiding principles were different. The implementations were different. I mean, **WhatsApp and Facebook are, like, very different things**. So what – like, Facebook is a social network where people are posting all sorts of content that they want their friends and potentially as many people as possible to see. And WhatsApp is a messaging app. So I think the privacy philosophies, yeah, **I do think they're quite different, because they're completely different user experiences with different intentions by the users when they post**."

PDX0090-055

Mobile Messengers Are Not Suited for Friends and Family Broadcast Sharing

Jacob Andreou (Snap) Testimony
(May 3, 2023)
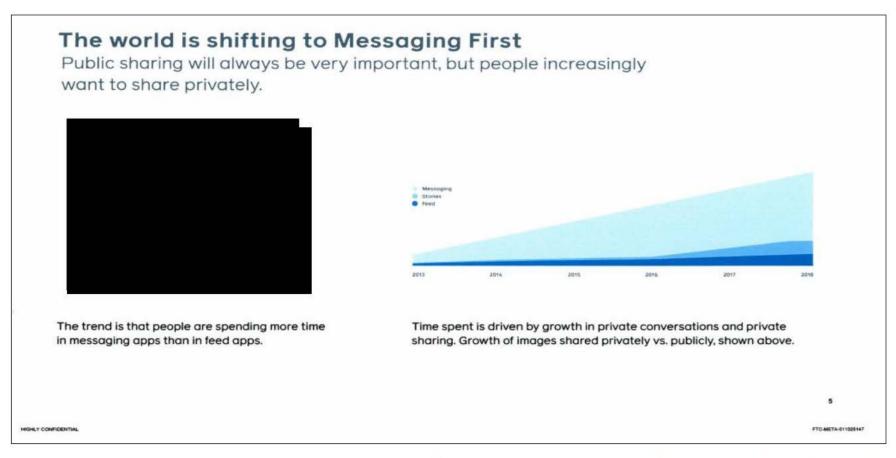
"Q. So today why might a user choose to create a story rather than send the same content as a Snap?

A. . . . Our users often use Stories as a much more subtle way to kind of get this message that they have created with the Snap in front of a large group of people. And it invites the people that care enough to reply to reply, but they get to reply privately in a one-to-one basis. **Whereas if they were to do this in a group chat, everyone would be subjected to a push. Everyone would come into the chat. And then like the one person who has a response would say something, and it would be very unusual for the other 98 people to be watching this exchange from the sidelines.**"

Dan Rose (Meta) Testimony
(Mar. 9, 2023)

"Facebook Messenger was designed for people to communicate with their friends on Facebook. So that was a different group that you could message using WhatsApp. For example, **you might have your plumber in your address book on your phone, but you might not be friends with your plumber on Facebook.**"

Source: PX9000 (Hemphill Report) at § 3.2.2.5; Andreou Dep. Tr. at 207:17-208:17; Rose Dep. Tr. at 117:23-118:12.

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PDX0090-056

Meta Claim: "Friends and Family Broadcast Sharing Is Shifting to Messaging"

The world is shifting to Messaging First

Public sharing will always be very important, but people increasingly want to share privately.

The trend is that people are spending more time in messaging apps than in feed apps.

Time spent is driven by growth in private conversations and private sharing. Growth of images shared privately vs. publicly, shown above.

FTC-META-011025147

5

Meta Board Presentation: "Messaging" (Feb. 13, 2020)

PDX0090-057

Meta Views Messaging as Complementary to Friends and Family Broadcast Sharing

Email from ██████ to Peter Deng (Apr. 26, 2012)

> "By providing the best private communication channel where people choose to share the important news in their life first, we can make it very easy to share this content with all your friends when you're ready. **Mobile messaging can be made the ultimate entry point for the larger Facebook experience**."

Understanding Content Anchored Conversations

Meta Market Strategy Presentation (July 19, 2018)

> "Messaging and friend broadcast sharing are often closely integrated, signaling **both play complementary roles in friend focused conversations**."

Will Cathcart Trial Testimony (May 7, 2025)

> "Q. And it shows images shared on messaging growing from 2013 to 2018, correct?
>
> A. Yes.
>
> Q. And it also shows image shares on Stories and Feed growing from 2013 to 2018, correct?
>
> A. Yes.
>
> Q. What that means is that public broadcast sharing and private messaging can contribute to the use of one another, right?
>
> A. Yes. . . ."

PDX0090-058

Meta Views Messaging as Complementary to Friends and Family Broadcast Sharing

"FB and WA are complementary . . . . One Feed app and one messaging app can win."

Email from Naomi Gleit to Alex Schultz, Javier Olivan, et al. (Jan. 28, 2018)

Mark Zuckerberg

"There are many countries where WhatsApp is the leading messaging service and Facebook is the leading social network . . . ."

Email from Mark Zuckerberg to Chris Cox and Alex Schultz (Feb. 14, 2019)

Javier Olivan

"Q. In your experience, feed-based consumption services like Facebook Blue and Instagram kind of coexist with messaging services, right?

A . Yes. That's what we have seen."

Javier Olivan Trial Testimony (Apr. 29, 2025)

PDX0090-059
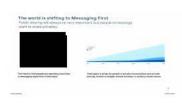
Meta Has Referenced Increase in Private Sharing for Years

"Direct has grown to insane heights over the past couple years in terms of MAP and sends."

Email from Kevin Systrom to Adam Mosseri
(April 9, 2018)
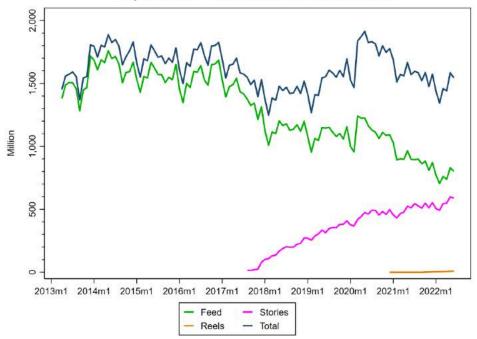
"Public sharing will always be very important, but people increasingly want to share privately."

Meta Board Presentation: "Messaging" (Feb. 13, 2020)

Broadcast Sharing Has Remained Robust Over the Last Decade
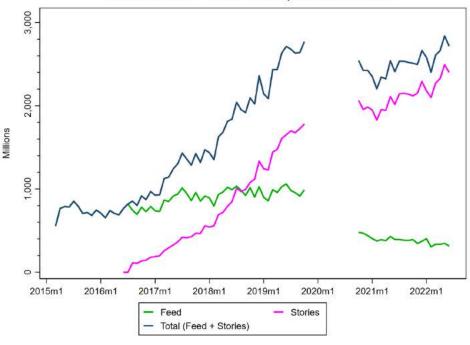
Facebook Original Broadcast Post Sessions
April 2013 – June 2022, United States

Instagram Feed and Stories Posts
March 2015 – June 2022, United States

Note: Instagram feed data for the United States are unavailable in the period December 2019 through August 2020, and incomplete in November 2019 and September 2020.

Source: PX9007 (Hemphill Rebuttal Report) at Exs. 7, 8.

PDX0090-061

1.2 (B) – Import of Other Activities

PDX0090-062

Other Activities: Not a Unique Circumstance

United States v. Google LLC (2023)

Federal Trade Commission v. Sysco Corp. (2015)

Federal Trade Commission v. Whole Foods Market, Inc. (2008)
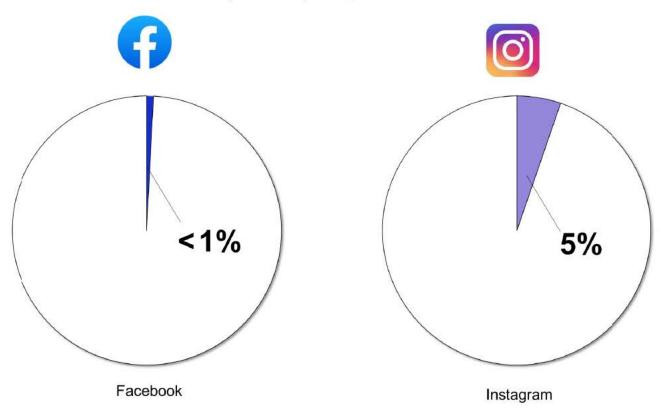
Other Apps Have Not Constrained Meta's Exercise of Monopoly Power

1. Facebook and Instagram are firmly grounded in friends and family sharing.

2. Other apps are not substitutes for friends and family sharing.

3. Direct evidence confirms that other apps do not discipline Meta's exercise of monopoly power.

Facebook and Instagram Are Firmly Grounded in Friends and Family Usage

Daily Active Reels Users Not Using Feed or Stories
April 24 - 30, 2022, United States

<1%

Facebook

5%

Instagram
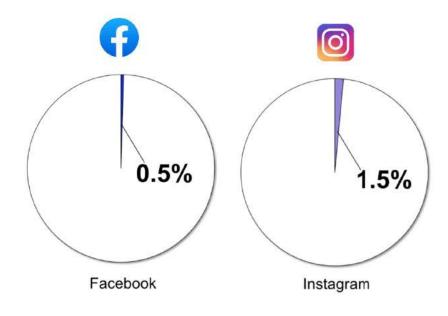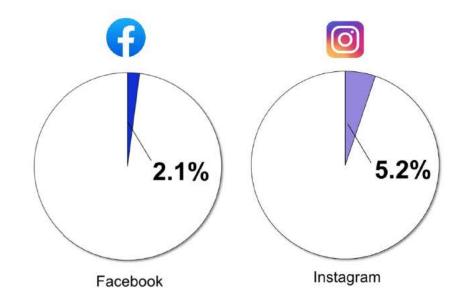
Note: Feed use defined as at least 30 seconds on Feed.
Source: PX9000 (Hemphill Report) at ¶¶ 656-659; Exs. C-40 to C-47.

Facebook and Instagram Are Firmly Grounded in Friends and Family Usage

Active Users Without Friends or Accounts Followed
April 24 - 30, 2022, United States

Active Users With 10 or Fewer Friends or Accounts Followed
April 24 - 30, 2022, United States

0.5%

Facebook

1.5%

Instagram

2.1%

Facebook

5.2%

Instagram

Note: The percentage of active users without friends or accounts followed reflect the fraction of user-days without friends or account followed. The data includes user-days for which information on user demographics, time spent, and ad impressions is available, and time spent is not zero.
Source: PX9000 (Hemphill Report) at Exs. 61, 63.

Facebook and Instagram Are Grounded in Friends and Family Sharing

"Discovery Engine goals will be achieved primarily by **expanding the pie of Feed VPVs and not necessarily at the cost of Friends and Family content** distribution."

Meta Long-Range Planning Spreadsheet (Sept. 2022)

"**Lesson: Recs should not displace friends and family content** .. .. Today, recommendations on IG are displacing valuable connected content. We will establish strict regression budgets to protect it, especially if it comes from friends and family."

Instagram Presentation on Recommendations (Aug. 2022)

"The two main jobs that people hire Instagram for are catching up with friends and being entertained. **Our friend use case remains resilient**, driven by healthy growth in Direct & Stories."

"**Friend content is sticky and increasing in share** of overall consumption on IG, with Stories being the destination for consuming content from friends."

Meta Document: "MZ IG Deep Dive" (Oct. 25, 2022)

Video and Other Formats Play a Distinct Role on PSN Apps

Mark Zuckerberg
CEO of Meta

"[T]here are some fundamental formats in social media like Feeds and Stories, and now I think this Reels short-form video format, that **within the context of a different network or community, the same format will take on different characteristics**. . . . [T]he kind of discussions that you might have in a feed on Twitter or on Pinterest are different from what you would do in Facebook or Instagram, even given a relatively similar format."

Mark Zuckerberg, Meta Q4 2021 Earnings Call (Feb. 2, 2022)

Adam Mosseri
Head of Instagram

"**We're going to bring your friends to the Reels tab on Instagram** . . . . So when you go to the Reels tab you'll see a few friends in the top right. And if you tap on that pill, you end up with a dedicated feed of Reels that your friends have liked . . . . **We're doing this because we want Instagram to be not just a lean-back experience**, but a participatory one, a social one, one where you actually explore your interests with your friends."

Adam Mosseri, Instagram Post (Jan. 17, 2025)

Video and Other Formats Play a Distinct Role on PSN Apps

> "**On Facebook, consumers most want [to] interact with Reels from, and create reels for, close friends and family**. . . . While it's important to build unconnected ecosystem to meet users expectation for FB Reels, we should continue to leverage family and friend social graph as FB's superpower to build differentiated Reels experience for users."

Meta document: "Facebook Reels recommended target audience" (Jan. 12, 2022)

> "How do the entertainment and close friends jobs intersect? There is something magical that happens within the overlap of these two spaces -- **instead of coming to Instagram to turn your mind off, which is a common mode on TikTok, people come to Instagram to participate and share**. We believe the intersection of the entertainment and close friends jobs is the ultimate differentiator of our app."

Meta document: "Instagram Differentiation" (Mar. 29, 2022)

Source: PX9000 (Hemphill Report) at ¶¶ 265-272; PX3007 at -006; PX3640 at -001.

Meta's Other Activities Support Friends and Family Sharing

Adam Mosseri
Head of Instagram

"There are really two jobs: one, connecting you with friends; and two, helping you explore your interests . . . . **those two things are symbiotic . . . these things are about connecting with your friends over your interests** . . . it's part of our core identity to connect people with friends, and we don't want to undermine that . . . ."

Adam Mosseri, Instagram Post
(July 9, 2024)

Source: PX9000 (Hemphill Report) at ¶¶ 265-272; PX0698 (embedded video).

Competition Is Not Symmetric: Meta Incorporated Other Activities into Its Friends and Family Social Networking Experience

Adam Presser (TikTok)
Trial Testimony
(Apr. 30, 2025)

TikTok Does Not Offer Friends & Family Sharing	Meta Encroaches on TikTok's "Turf"
"Q. Is it still the case today, as we sit here, as it was in 2024 that in your view, Facebook and Instagram are focused on users' interactions with existing friends and family, whereas TikTok differs from them in that respect? A. Yes."	"Q. I mean, given the fact that Meta has launched an Instagram Reels view that appears to look similar to TikTok, do you think that Meta competes with TikTok just by fast following or innovating? A. I think it's one of the ways that they compete with us. I think they have essentially looked at the product experience that we have offered and that's been recently successful, and they have built a version of that into their existing product."

Source: PX9000 (Hemphill Report) at ¶ 501; Presser Trial Tr. (Apr. 30, 2025) at 49:7-15, 51:18-22.

PDX0090-071

TikTok: Not a Reasonable Substitute

"[U]sers use Facebook to connect and network with friends and acquaintances. TikTok is used as an entertainment platform. Users use TikTok predominately to view, create, and share creative, humorous, or inspiring short video content."

Adam Presser
(TikTok)

"Q. Since the friends tab was released in 2022, would you say that from TikTok's perspective, it has been successful?

A. No, not really.

Q. As you sit here today, do you have an estimate of the current percentage of video views or time spent that occur within the friends tab?

A. It's also very miniscule, very, very small.

Q. How small if you had an estimate, sir?

A. About 1 percent."

Presser Trial Testimony
(Apr. 30, 2025)

PDX0090-072

"Complete Replacement": Google+ and Path

Q. "You would agree that **Google+** and Facebook competed head to head to address a friends sharing use case in 2011; right?

A. Yeah, I mean, I think even more broadly than that . . . . [T]hey also had a lot of different features and were launching a lot of different features for people to share and kind of connect in all different kinds of ways . . . . I think that they really were trying to be a **complete replacement** for everything we were doing with Facebook."

Q. "You would agree that **Path** had a social graph that was focused on close friends sharing; right?

A. Yes.

Q. And you would agree that during the time period of early 2012, **Path, Google+, and the Facebook application all competed to offer United States users the use case of online sharing with friends**; right?

A. **Yes.**"

Mark Zuckerberg

Mark Zuckerberg Trial Testimony
(Apr. 14, 2025)

PDX0090-073

1.2 (C) –   Direct Evidence of Monopoly Power

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Direct Evidence of Monopoly Power

1. **Sustained high profits:** Meta has earned persistently high profits

2. **Ad load:** Meta exercises substantial market power over users in setting ad load

3. **Price discrimination:** Meta targets inelastic demand

4. **Quality:** Meta has allowed quality to decline

5. **Cambridge Analytica:** User responses show lack of alternatives

Source: PX9000 (Hemphill Report) at § 3.3; PX9007 (Hemphill Rebuttal Report) at § 2.1.

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PDX0090-075

Meta Revenue and Income Are High and Increasing

Dollars in billions	2024	Q1 2025
Family of Apps Advertising Revenue	$160.6	$41.4
Cost of Revenue (firm-wide)	$30.2	$7.6
Gross Profit	$130.5	$33.8
Gross Margin	81.2%	81.7%
Family of Apps Income from Operations	$87.1	$21.8
Operating Margin	54.2%	52.6%

Note: Meta's Forms 10-K and 10-Q do not report cost of revenue for Family of Apps specifically. The table above shows Meta's firm-wide cost of revenue. Q1 2025 firm-wide revenue of $42.3 billion reflects an increase of 16% compared to Q1 2024, attributed to an increase in advertising revenue.

Source: PX0715 at -61, -75, -87, -101; Meta Q1 2025 Form 10-Q at 6-7, 13, 26, 28, 37-40.

Meta Has Earned Sustained High Profits

Kevin Hearle (FTC)
Trial Testimony
(Apr. 24, 2025)

"Q. So comparing Meta's internal rate of return to its cost of capital, what did you determine about Meta's profits?

A. I concluded that Meta has been highly profitable as an enterprise since its inception."

Meta's Annual Weighted Average Cost of Capital

10%

Meta's Average Annual Rate of Return

36 - 41%

Source: PX9000 (Hemphill Report) at § 3.3.1; Hearle Trial Tr. (Apr. 24, 2025) at 17:13-17:16; PX9005 (Hearle Report) at § V.

PDX0090-077

Meta Sets Ad Load to Maximize Profits, Not Engagement

In setting ad load, Meta faces a tradeoff: an increase in ad load increases revenue (for a given level of usage) but also decreases engagement

"In general, an increase in ad load is predicted to decrease user engagement."

Meta's Narrative Response to FTC's Civil Investigative Demand
(Sep. 30, 2019)

"Meta thus seeks to optimize ad load to maximize revenue gains and minimize impact on user engagement."

Meta's Response to FTC's Interrogatory No. 3
(Feb. 21, 2023)
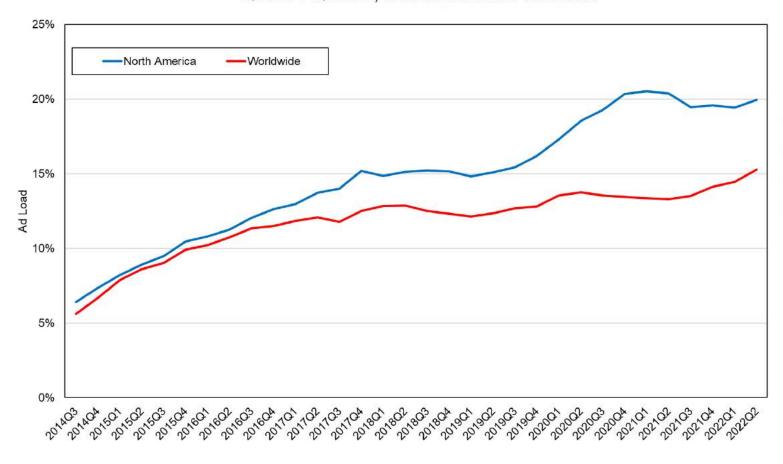
"[W]e also want to make sure that we don't degrade the experience by putting in too many ads and offputting people because they'll leave and they'll go to other services and they'll go to the competition."

Adam Mosseri Testimony
(Mar. 29, 2023)

Source: PX9000 (Hemphill Report) at § 3.3.2.2; Meta, Response to the August 27, 2019 Civil Investigative Demand Issued by the United States Federal Trade Commission, at 8 (Sep. 30, 2019); PX10295 at -011; Mosseri Dep. Tr. (Mar. 29, 2023) at 273:19-24.

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PDX0090-078

Meta Has Profitably Increased Ad Load Over Time

Facebook Feed Ad Load
Q3 2014–Q2 2022, North America and Worldwide

2014 Q3:	**6.4%**
2022 Q2:	**20.0%**
2023 (Jan.):	**23.2%**
2025 (Jan.):	**19.7%**
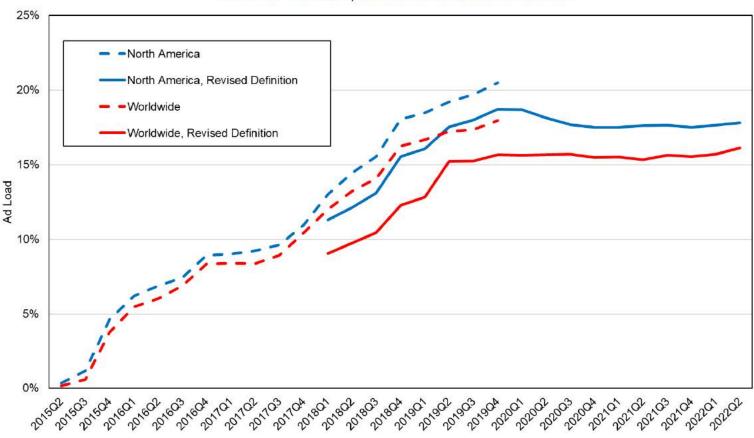
Note: See report notes for explanation of how ad load is measured for each surface.
Source: PX9000 (Hemphill Report) at ¶ 718, Ex. 53; FTC-META-012468454, FTC-META-014039755.

Meta Has Profitably Increased Ad Load Over Time

Instagram Feed Ad Load
Q2 2015–Q2 2022, North America and Worldwide
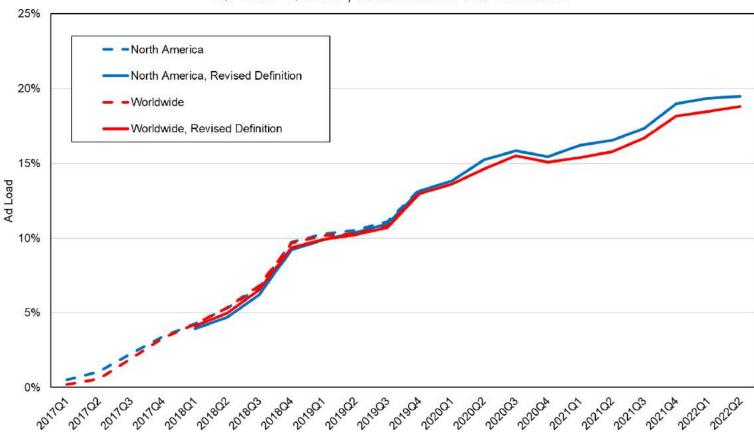
2015 Q2:   **0.3%**
2022 Q2: **17.8%**

Note: See report notes for explanation of how ad load is measured for each surface.
Source: PX9000 (Hemphill Report) at ¶ 719, Ex. 54.

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Meta Has Profitably Increased Ad Load Over Time

Instagram Stories Ad Load
Q1 2017–Q2 2022, North America and Worldwide

2017 Q1:   **0.5%**
2022 Q2: **19.5%**

Note: See report notes for explanation of how ad load is measured for each surface.
Source: PX9000 (Hemphill Report) at ¶ 719, Ex. 55.

Meta's Ad Load Increases Are a Reduction in Quality
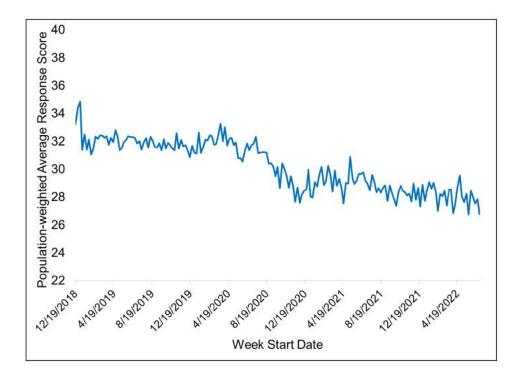
CACTUS Survey: "Too Many Ads on Facebook"
December 2016–June 2022, United States
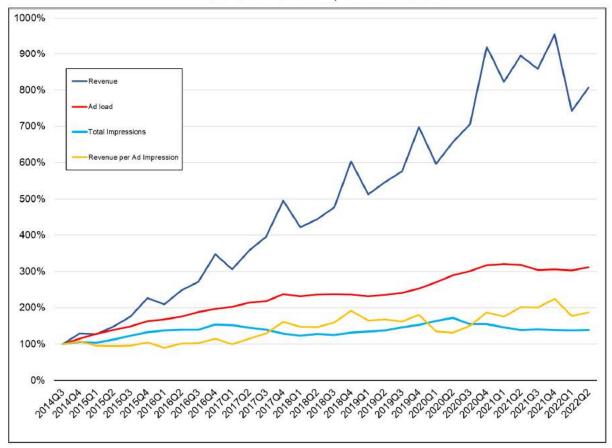
Instagram Ad Sentiment Survey: "Too Many Ads on Instagram"
December 2018–June 2022, United States

Source: PX9000 (Hemphill Report) at Exs. 70-71.

PDX0090-082

Meta Has Profitably Increased Ad Load Over Time

Components of Facebook Mobile Feed Ad Revenue
Q3 2014–Q2 2022, North America

Increase from Q3 2014 to Q2 2022
North America
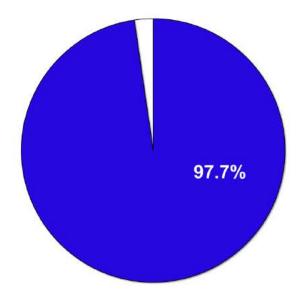
Revenue	**8.1 x**
Ad Load	**3.1 x**
Revenue per Ad Impression	**1.9 x**
Total Impressions	**1.4 x**

Note: 3Q 2014 = 100%; see report notes for explanation of how ad load is measured for each surface.
Source: PX9000 (Hemphill Report) at § 3.3.2.3; Ex. 56.

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PDX0090-083

Meta's Revenue and Profits Arise from Surfaces Most Focused on Friends and Family Content

North America accounted for 44% of Meta's $164.5B worldwide revenue in 2024, of which:

**Ad Revenue as a
Percentage of Total Revenue**
North America, 2024

**Facebook Mobile Feed, Instagram Feed, and Instagram Stories
as a Percentage of Ad Revenue**
North America, 2022 H1
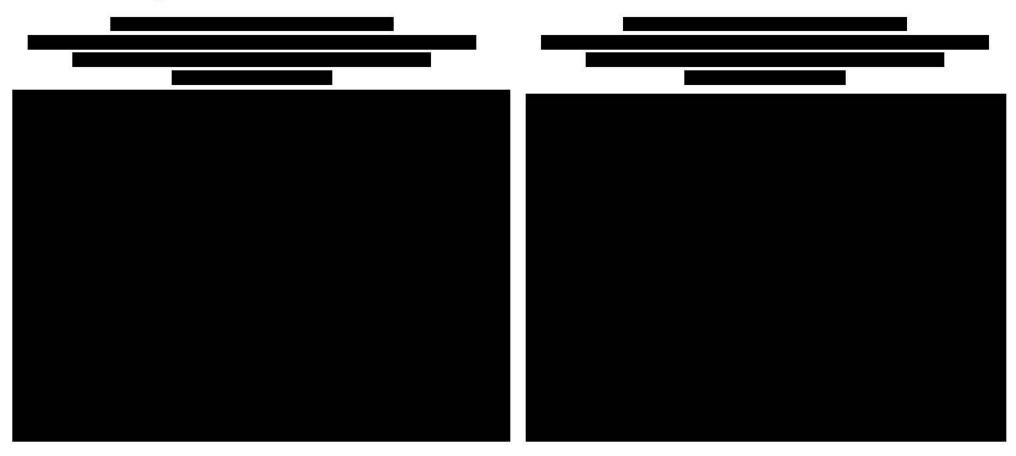
97.7%

Note: Facebook Stories accounted for ███ of worldwide ad revenue in 2022 H1.
Source: PX9000 (Hemphill Report) at Ex. 52; PX0715 at -87, -101; FTC-META-011921400; FTC-META-003310472; FTC-META005915454.

Meta's Revenue and Profits Arise from Surfaces Most Focused on Friends and Family Content

Meta's Ad Load System Sets a Higher Ad Load for Users with More Inelastic Demand

Personalized Ad Load	Sensitivity-based	Personalize ad load based on users' sensitivity towards ads (how much do we expect a user's topline organic metrics to regress if we increase their ad load) as predicted by an ads sensitivity model we trained and built.
Personalized Ad Load	User traits-based	Personalize ad load based on users' historical behavioral traits such as ad like-through rate, ad click-through rate, scroll rate, etc.

Meta Document: "Introducing 'SALT' (Smart Ad Load Techniques)" (2020)

"Q. And Meta's ad load algorithms operate such that ad load on Facebook and Instagram varies from user to user, right?

A. Yes, ad load varies from user to user."

"Q. And Meta's ad load algorithms consider the impact that ads have on how much a user engages with Facebook and Instagram as a separate variable in setting a user's ad load, right?

A. . . . [I]t would probably be using a variety of signals to try to predict if there might be a negative impact on engagement for some user."

John Hegeman Trial Testimony (May 1, 2025)

Source: PX9000 (Hemphill Report) § 3.3.2.4; Hegeman Trial Tr. (May 1, 2025) at 99:12-14, 100:4-15; PX15438 at -001 to -002.

Meta's Ad Load System Sets a Higher Ad Load for Users with More Inelastic Demand

Updating the Needy User Rule

Motivation

Currently we don't show ads for needy users and this business logic was set more than 3 years ago to protect new and less active users as they will be more likely to leave Facebook if we show them ads. Needy users are defined as those with friend count < 20 && L28 <= 26 and this rule has not been refreshed or re-evaluated since its launch. The current implementation, while

Meta Document: "Updating the Needy User Rule"
(Jan. 5, 2017)

"Needy user is a term that Meta uses to refer to a user that is new, stale, or at risk of going stale. . . . Meta aims to recommend high-quality accounts and content to needy users to increase their engagement with its services. Needy and other users may have different custom auction settings, which may lead to those users classified as needy users seeing larger gaps between ads than other users."

Meta's Response to FTC's Interrogatory No. 3
(Feb. 21, 2023)

Source: PX9000 (Hemphill Report) § 3.3.2.4; FB_FTC_CID_07049337 at -337; PX10295 at -015.

PDX0090-087

Meta Varies Ad Load on Facebook By Age

"FAM recently did an analysis of **sessions cost of ads** on critical cohorts. We observed that teens and Young Adults (YA) have a -6.1% and -3.7% hurt respectively on sessions in US/CA and WE (Western Europe), which is **disproportionately high**. . . . [B]y **reducing ad load by 80% for teens and 50% for YA**, we can recover +3.2% and +1.2% sessions for these cohorts respectively . . . ."

Email from Facebook App Monetization (FAM) Team Head to Mark Zuckerberg, et al.
(Apr. 15, 2021)

"If we've found that these demographics are disproportionately sensitive to ads, then there must be some demographics that are disproportionately insensitive to ads. Why wouldn't we consider increasing ad load for those people as part of this?"

Reply from Mark Zuckerberg
(Apr. 15, 2021)

Mark Zuckerberg

Source: PX9000 (Hemphill Report) at ¶¶ 734-742; PX12501 at -004.

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PDX0090-088
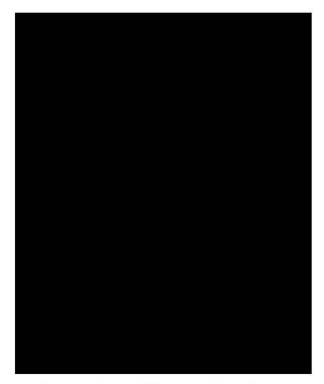
Meta Varies Ad Load on Facebook by Age

Facebook Mobile Feed Ad Load
September 2020–June 2022; North America
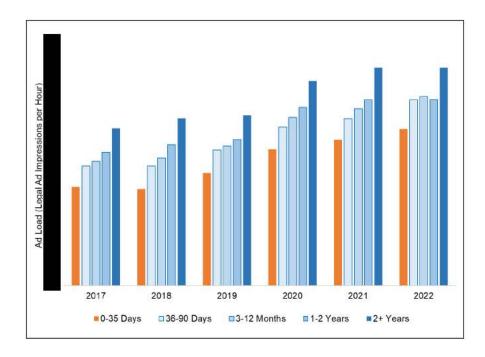
Facebook Feed Ad Load by Age
January 2025; United States
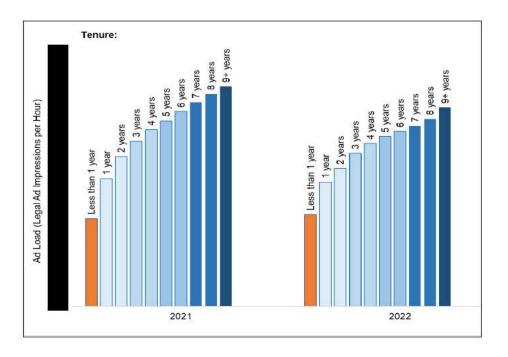
Note: Ad load reflects ad impressions as a percent of total impressions.

Source: PX9000 (Hemphill Report) at Ex. 59; FTC-META-014039755.

Meta Varies Ad Load on Facebook and Instagram by Tenure
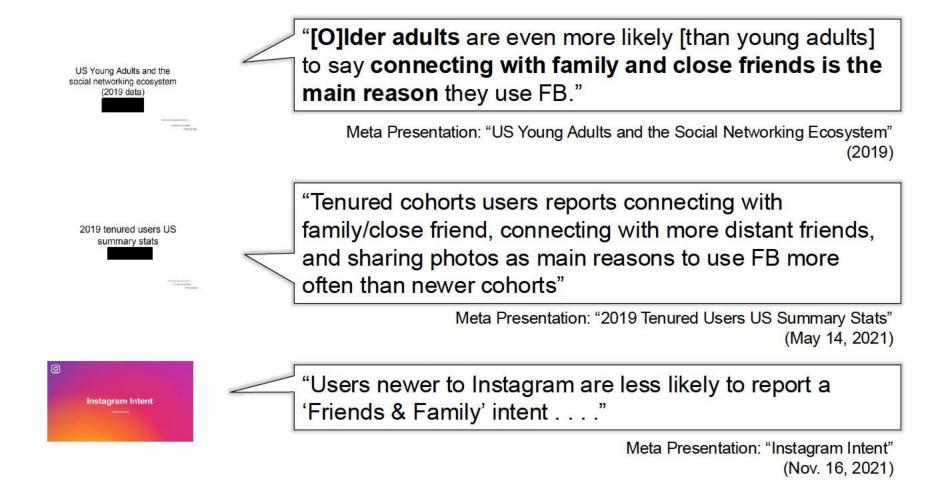
Facebook Ad Load by Tenure and Year
2017–2022, United States

Ad Load (Legal Ad Impressions per Hour)

2017 | 2018 | 2019 | 2020 | 2021 | 2022

■ 0-35 Days □ 36-90 Days □ 3-12 Months ■ 1-2 Years ■ 2+ Years

Instagram Ad Load by Tenure and Year
2021–2022, United States

Tenure:

Ad Load (Legal Ad Impressions per Hour)

Less than 1 year, 1 year, 2 years, 3 years, 4 years, 5 years, 6 years, 7 years, 8 years, 9+ years

2021 | 2022

PDX0090-090

Meta Price Discriminates Based on Demand for Friends and Family Sharing

US Young Adults and the
social networking ecosystem
(2019 data)

"**[O]lder adults** are even more likely [than young adults] to say **connecting with family and close friends is the main reason** they use FB."

Meta Presentation: "US Young Adults and the Social Networking Ecosystem"
(2019)

2019 tenured users US
summary stats

"Tenured cohorts users reports connecting with family/close friend, connecting with more distant friends, and sharing photos as main reasons to use FB more often than newer cohorts"

Meta Presentation: "2019 Tenured Users US Summary Stats"
(May 14, 2021)

Instagram Intent

"Users newer to Instagram are less likely to report a 'Friends & Family' intent . . . ."

Meta Presentation: "Instagram Intent"
(Nov. 16, 2021)

Meta Underinvests in Friends and Family Sharing

"I worry that we've gotten over-focused on [group & community content] at the expense of defending/growing the friend market as much as we can . . . ."

Message from John Hegeman to Meta Executives
(Feb. 6, 2022)

"Friend sharing continues to be a big asset for Facebook, but we're not investing as much in it. . . . How do we resolve the issues that Stories (in all apps) are an engagement lever but are consistently under-invested in?"

Meta Document: "PG [Product Group] Leads Dinner"
(Jan. 19, 2022)

"I believe that we've gotten meaningfully less effective at two critical use cases for people on Facebook:
- I have a few minutes to spare and I'd love to use that time to check in on what my friends and family are up to . . .
- I want to share what I'm doing, thinking, or interested in with the people I care about."

Will Cathcart Workplace Post (June 15, 2018)

Source: PX9000 (Hemphill Report) at § 4.4.3; PX12669 at -005; PX12497 at -001, -003; PX14987 at -002.

PDX0090-092

Meta Has Profitably Reduced Other Dimensions of Quality: Privacy and Data Collection

"Privacy is #1 response when people are asked what part of FB they want improved (% giving this answer is increasing; correlates with low CAU)"
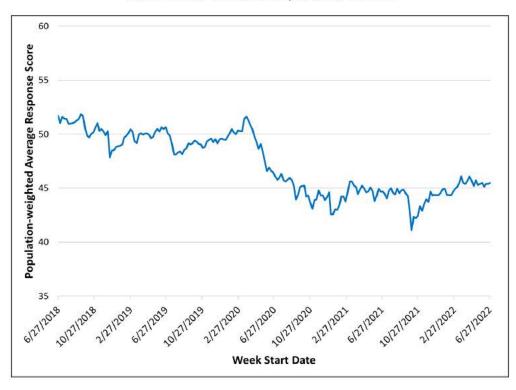
"Privacy controls are the top 1 or 2 user concerns in the largest countries."

"Privacy concern is the top product reason people don't use FB."
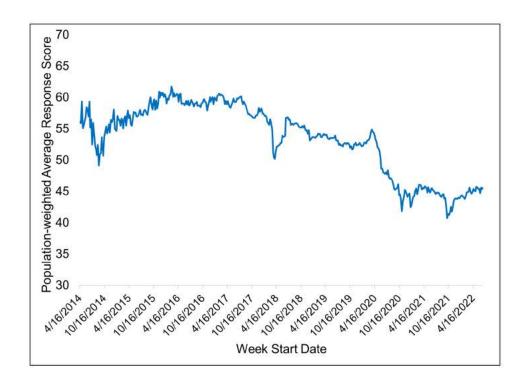
Meta Presentation: "Privacy Defense"
(July 31, 2015)

Main Tracking Survey: "How much control do you have over your personal information on Meta's apps and products?"
June 2018–June 2022, United States

Source: PX9007 (Hemphill Rebuttal Report) at Ex. 1; PX3771 at -018.

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PDX0090-093

Meta Has Profitably Reduced Overall Quality
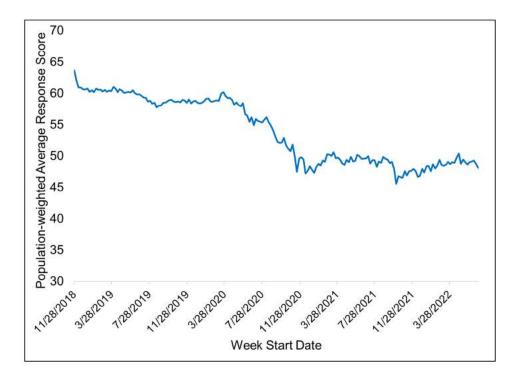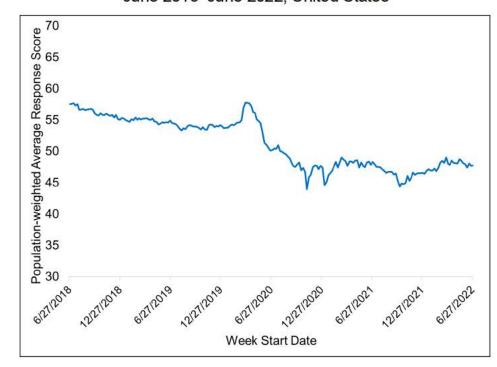
Main Tracking Survey: "Facebook Cares About Its Users"
April 2014–June 2022, United States

Main Tracking Survey: "Instagram Cares About Its Users"
November 2018–June 2022, United States

Source: PX9000 (Hemphill Report) at Exs. 65, 66.

Meta Has Profitably Reduced Overall Quality
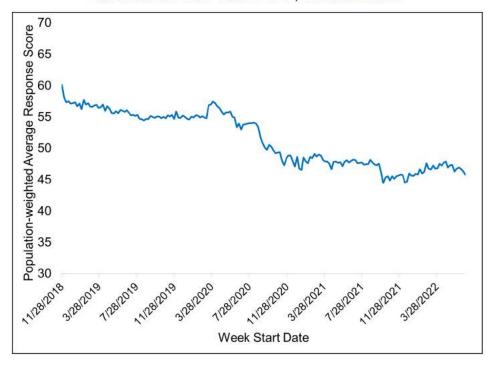
Main Tracking Survey: "Facebook is Good for the World"
June 2018–June 2022, United States
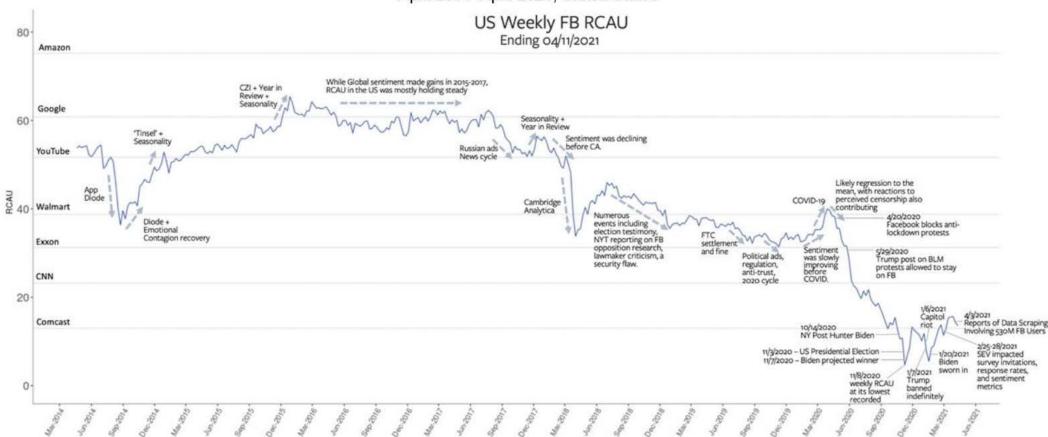
Main Tracking Survey: "Instagram is Good for the World"
November 2018–June 2022, United States

Source: PX9000 (Hemphill Report) at Exs. 67, 68.

Meta Has Profitably Reduced Overall Quality
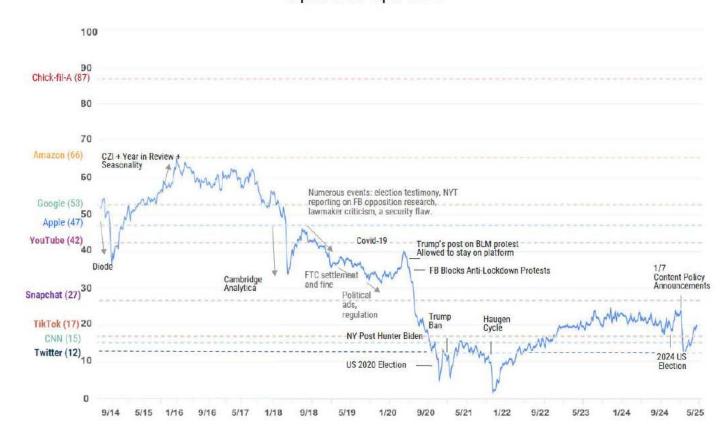
Relative Metrics Survey: "Relative Cares About Users"
April 2014–April 2021, United States
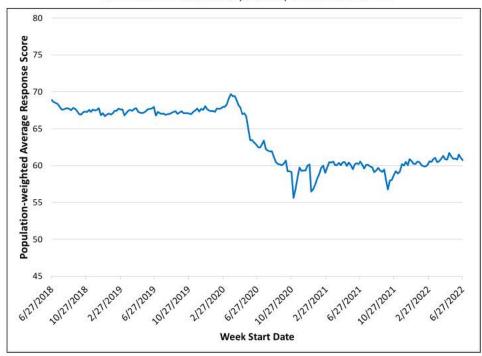
US Weekly FB RCAU
Ending 04/11/2021

Source: PX9000 (Hemphill Report) at Ex. 69.

Meta Has Profitably Reduced Overall Quality

Relative Metrics Survey: "Relative Cares About Users"
April 2014–April 2025

Source: DDX16.2; Cobb Trial Tr. (May 1, 2025) at 46:12-47:23 (discussing DDX16.2).

PDX0090-097

Meta Has Profitably Reduced Overall Quality
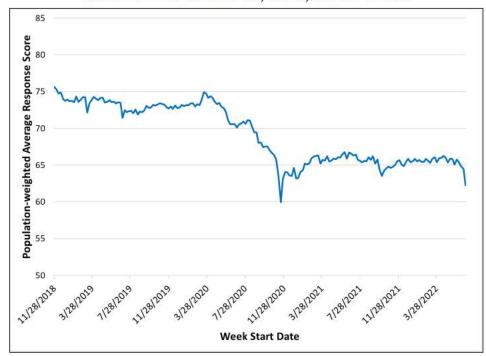
Main Tracking Survey of U.S. Facebook Users
"Overall, how satisfied are you with your Facebook experience?"
June 2018-June 29, 2022; United States

Main Tracking Survey of U.S. Instagram Users
"Overall, how satisfied are you with your Instagram experience?"
November 2018-June 29, 2022; United States

Source: PX9007 (Hemphill Rebuttal) at Exs. 1-2.

PDX0090-098

Meta's User Surveys Reflect Real Product Quality Experiences

Curtiss Cobb
VP of Research

"And then there is – there is the summation over time of these various shocks and the nature of the shocks that can also affect the trend, **as well as the obvious one, experience with a product can also contribute to the trend**."

"Q. Okay. Why has Meta kept cares about users as its main sentiment question since 2014?

A. [T]here are characteristics of this question that – that make it a – a reasonable summary of whether people are having positive or negative feelings towards the brand **and the product experience**."

Curtiss Cobb Testimony (Apr. 14, 2023 & Aug. 25, 2022)

"Q. Dr. Cobb, is it fair to say that those Panavision tests on Instagram correlated with a sharp – a decline in user sentiment on Instagram?
A. Yes, Panavision did. It's actually one of the things highlighted on here where there was an actual corresponding product experience."

"Q. And next to Instagram's 2020 relative cares about users drop, there's a suggested posts launch. Do you see that?
A. I do. . . .
Q. That would also be a products experience on Instagram?
A That would."
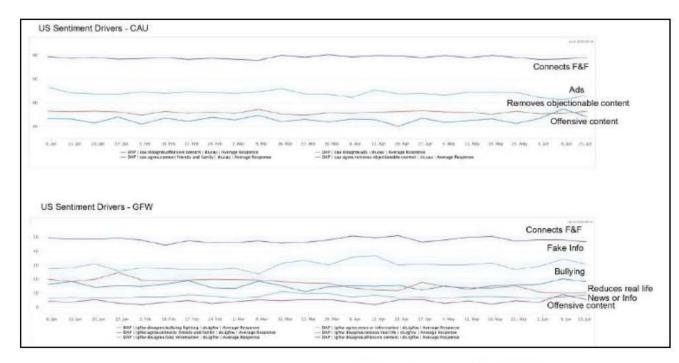
Curtiss Cobb Trial Testimony (May 1, 2025)

PDX0090-099

Meta's User Surveys Reflect Real Product Quality Experiences

US Sentiment Drivers

Meta Presentation: "Sentiment Review 2020H1" (June 26, 2020)
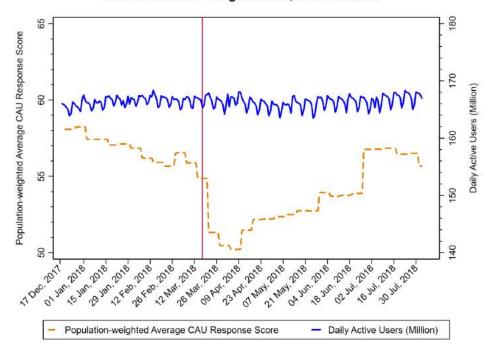
"Q. And this shows at the top U.S. sentiment driver for cares about users is connect friends and family for Facebook, is that right?

A. Yes.

Q. And then the second largest driver for U.S. sentiment on Facebook is user attitudes towards ads. Do I have that right?

A. References towards ads, yes."

Curtiss Cobb Trial Testimony
(May 1, 2025)

Source: PX9007 (Hemphill Rebuttal) at ¶¶ 731, 751-759, 776-780; PX3397 at -040; Cobb Trial Tr. at 68:1-8.

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PDX0090-100

Users' Response to the Cambridge Analytica Breach Shows Their Lack of Alternatives
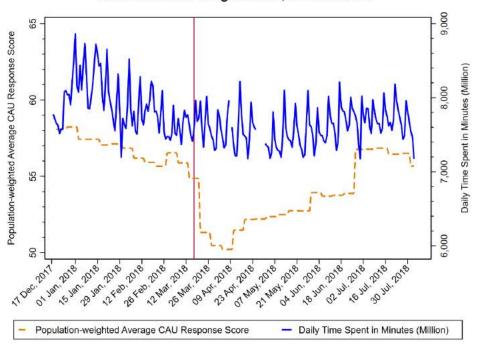
Facebook User Sentiment and Daily Active Users Around Cambridge Analytica News
December 2017–August 2018, United States

Facebook User Sentiment and Time Spent Around Cambridge Analytica News
December 2017–August 2018, United States

Source: PX9000 (Hemphill Report) at Exs. 72, 73.

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PDX0090-101

Other Apps Have Not Constrained Meta's Exercise of Monopoly Power

1. Facebook and Instagram are firmly grounded in friends and family sharing.

2. Other apps are not substitutes for friends and family sharing.
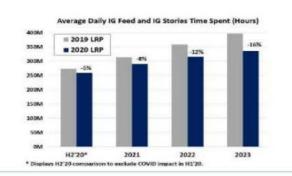
3. Direct evidence confirms that other apps do not discipline Meta's exercise of monopoly power.

Meta Claim: "TikTok Headwinds"
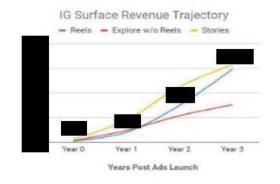
Investments: Instagram and Reels

Instagram: H2'20 outlook is meaningfully lower than last year's LRP and the forecast assumes this gap continues to widen over the LRP period, driven by trends over the past year in both pricing and engagement

- IG Feed and Stories (>90% of IG revenue) time forecast for H2'20 is -5% below that of last year's LRP, widening 3-4pp per year to -16% below by 2023 (~$3.6B of gap to LY 2023 LRP)
- Competitive factors, such as TikTok growth, explain a significant portion of time spent variance
- There is significant uncertainty to the competitive risks with a -$2.5B to +$3.0B (-1.7% to +2.0%) range around our 2024 ads forecast depending on the growth in TikTok engagement and ads business as well as the success of Reels

Average Daily IG Feed and IG Stories Time Spent (Hours)

* Displays H2'20 comparison to exclude COVID impact in H1'20.

Reels: Reels is a newly launched music-focused short form video product within Instagram that competes with TikTok

IG Surface Revenue Trajectory
— Reels — Explore w/o Reels — Stories

Year 0   Year 1   Year 2   Year 3

Years Post Ads Launch

TikTok growth estimated to drive >$3B in revenue risk in the 2024 overall ads outlook with downside risk up to total of $6B

Success case: Reels grows to ~⅓ of TikTok total time spent today to represent ~18% of overall IG App time by 2024 – mitigating Instagram time spent loss and generating new ads supply
- Grows to ~7 min/DAP, in-line with Stories today
- Represents ~$6B in Reels revenue by 2024, or ~$3B in incremental revenue

Requires substantial resource investment:
- Total Reels HC support grows +1,000 by 2024 (primarily R&D/ENG)
- Concentrated in Ranking, Creative Tools (Camera/AI/AR), Infra, and Creators (monetization/insights)
- OPEX grows to ~$0.5B by 2024 focused on content, music and curation
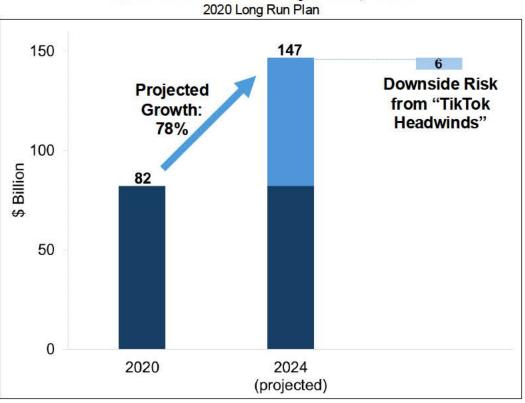
10
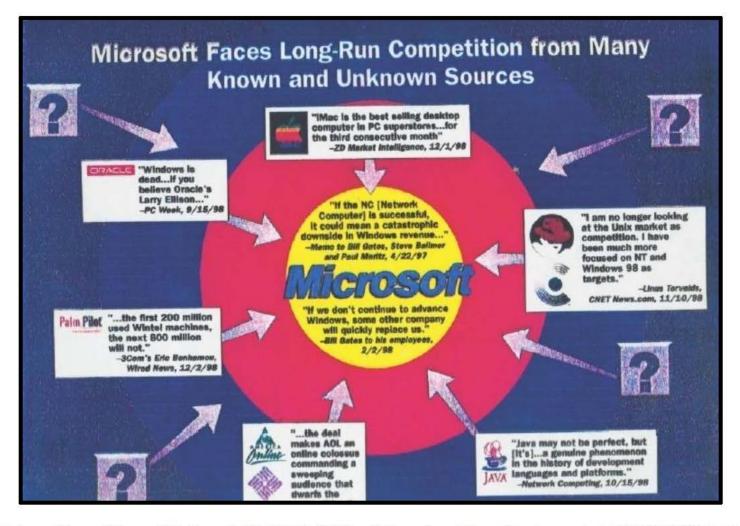
Confidential Materials - Do Not Distribute

Source: PX9000 (Hemphill Report) at ¶¶ 533-555; PX9007 (Hemphill Rebuttal) at ¶¶ 24, 101, 335-352; DX-1018 at p.15.

TikTok "Headwinds" in Perspective

Meta Ad Revenue Projection, 2024
2020 Long Run Plan

Projected Growth: 78%

Downside Risk from "TikTok Headwinds"

$ Billion

150
100
50
0

82

147

6

2020

2024 (projected)

Microsoft Claimed to Be "Hemmed In" By Competition
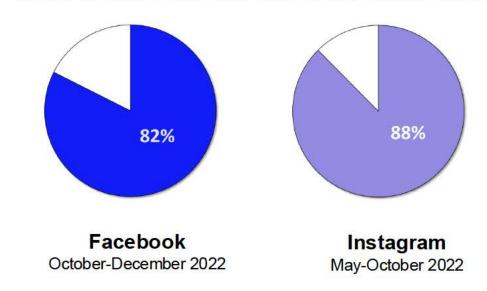
1.2 (D) –   The United States Is the Relevant Geographic Market

The Geographic Scope of the Relevant Market is the United States

1. Users in the United States would not substitute to a non-U.S. offering

2. Users in the United States face the same set of competitive alternatives

Share of U.S. Users' Friends in the United States

Facebook
October-December 2022

Instagram
May-October 2022

Geographic Market: Country-Specific Network Effects

Meta

"Facebook users who are located in a specific region may want to connect **mostly with other users located in that region**, with a more limited interest in connecting with users who are located in an altogether different region."

Meta Response to the United Kingdom's Competition and Markets Authority's Request for Information of July 18, 2019

"[O]ur growth hinges on having dense friend networks. **Dense friend networks typically are found within the borders of the country** because they'll speak the same language, they'll have the same cultural nuances, they'll generally have peers and friends in common. So it's a good way to frame up how we're going to grow our social networks."

"[T]he vast majority of communication in any market including the U.S. will be intra-market."

David Levenson (Snap) Testimony (May 10, 2023)

1.2 (E) –   Meta Has Held a Persistently Dominant Share of U.S. Personal Social Networking Services Market

Calculating Market Shares: The Standard Approach
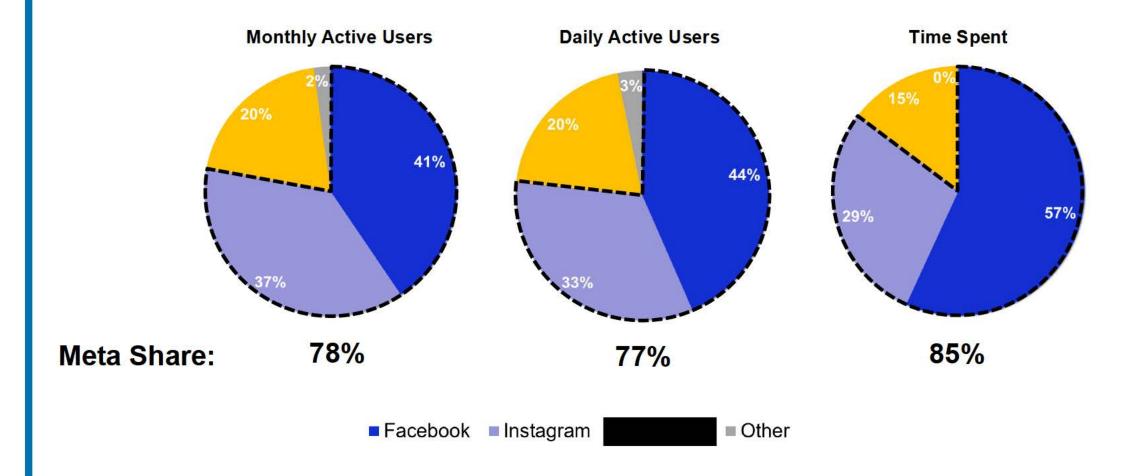
Merger Guidelines

U.S. Department of Justice and the Federal Trade Commission
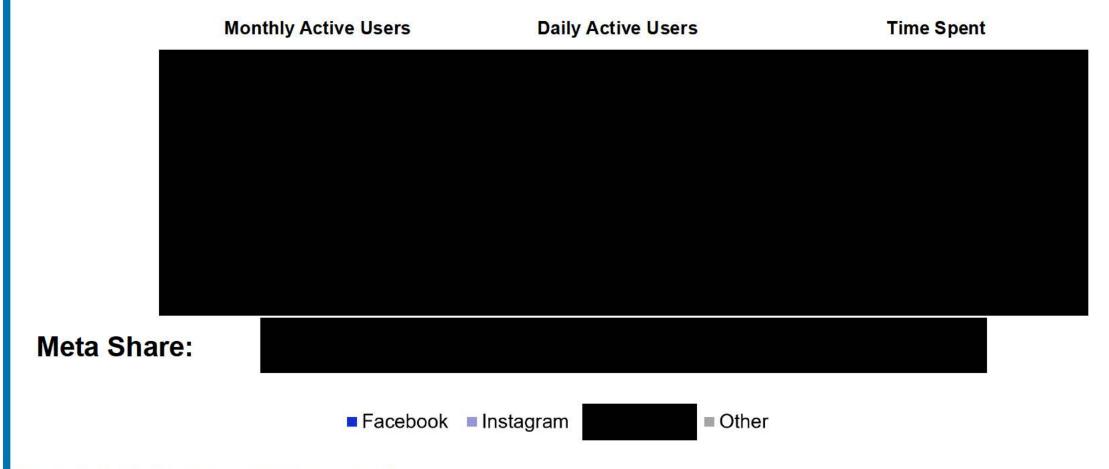
- The Agencies normally calculate product market shares **for all firms that currently supply products** (or consume products, when buyers merge) in a relevant market, subject to the availability of data. The Agencies measure each firm's market share **using metrics that are informative about the market realities** of competition in the particular market and firms' future competitive significance.

- Non-price indicators, such as number of users or frequency of use, may be useful indicators in markets where price forms a relatively small or no part of the exchange of value.

Source: PX9000 (Hemphill Report) at ¶ 32; 2023 Merger Guidelines § 4.4B.

PDX0090-110

Market Shares: 2022

Monthly Active Users

41%
37%
20%
2%

Daily Active Users

44%
33%
20%
3%

Time Spent

57%
29%
15%
0%

Meta Share: **78%** **77%** **85%**

■ Facebook ■ Instagram ■ [black box] ■ Other

Notes: "Other" includes MeWe, BeReal, Myspace, LINE, LiveJournal, Qzone, Renren, VKontakte, and Weibo.
Source: PX9007 (Hemphill Rebuttal) at Exs. A-5, A-9, A-13.

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PDX0090-111

Market Shares: 2025

Monthly Active Users **Daily Active Users** **Time Spent**

Meta Share:

■ Facebook ■ Instagram ■ Other
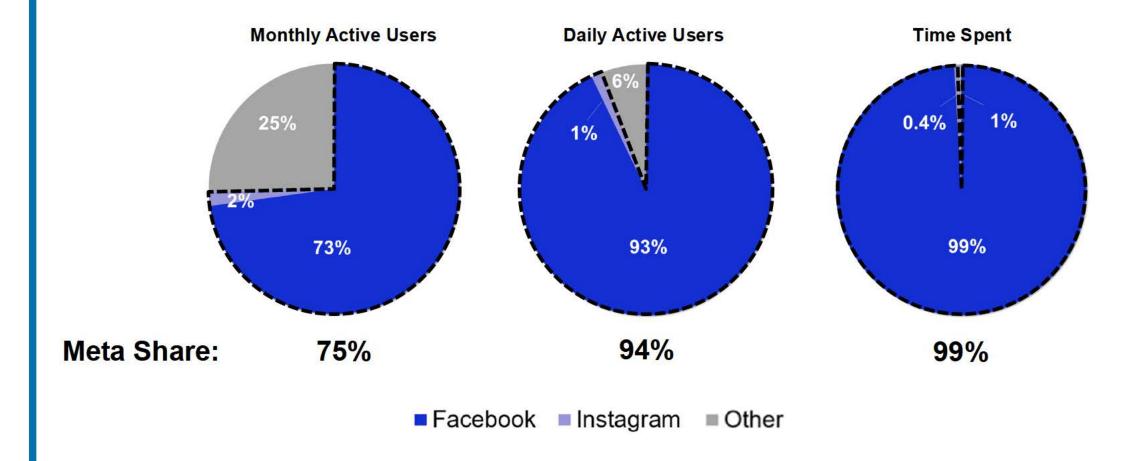
Notes: For "Other," levels are assumed to be the same as in 2022.
Source: DDX13.3; FTC-META-012478772, FTC-META-012481350, FTC-META-012478773, FTC-META-012478774, FTC-META-014039752, FTC-META-014039753, SNAP-METASUBPOENA-0000000; PX9000 (Hemphill Report) Third Party Monthly User Engagement Data.
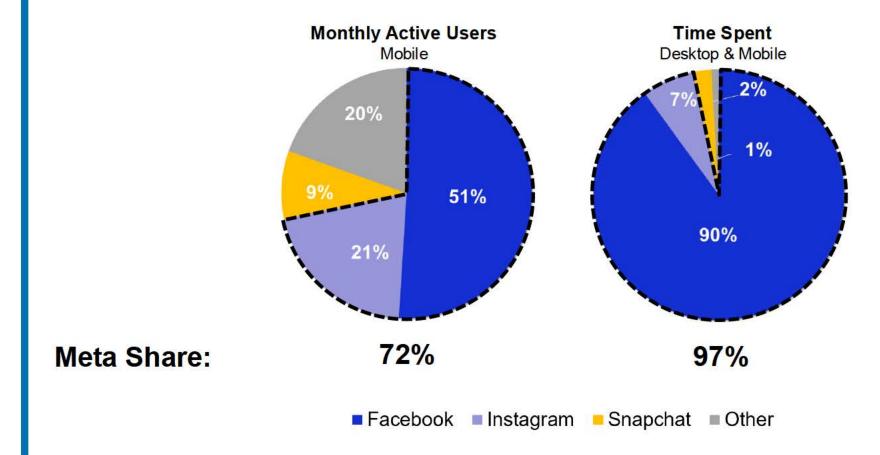
112

Market Shares: March 2012

Monthly Active Users

25%

2%

73%

Daily Active Users

6%

1%

93%

Time Spent

0.4%

1%

99%

Meta Share: **75%**   **94%**   **99%**

■ Facebook   ■ Instagram   ■ Other

Notes: "Other" includes Myspace, Google+, Orkut, and Path.
Source: PX9000 (Hemphill Report) at Exs. 39, 42, 45.

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Market Shares: 2014

Monthly Active Users
Mobile

51%

21%

9%

20%

Time Spent
Desktop & Mobile

2%

7%

1%

90%

Meta Share: 72%   97%

■ Facebook ■ Instagram ■ Snapchat ■ Other

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PDX0090-114

Market Shares: Monthly Active Users
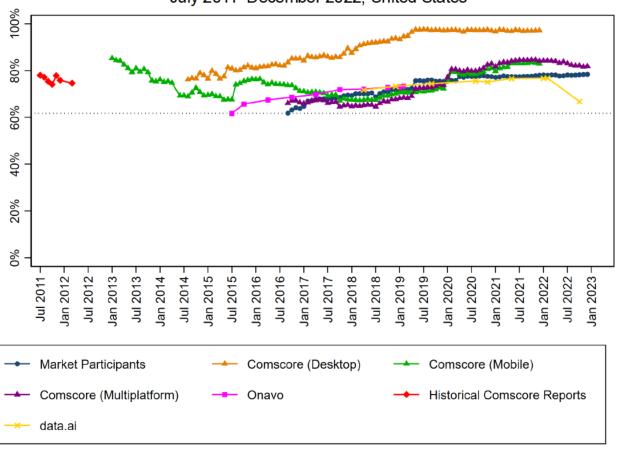
PSN Services Market Shares – Monthly Active Users
September 2016–December 2022, United States

Legend:
- Facebook
- Snapchat
- Google+
- KakaoStory
- Instagram
- MeWe
- Myspace
- LINE
- Facebook + Instagram
- BeReal
- Path
- Other

Source: PX9007 (Hemphill Rebuttal) at Ex. A-7.

PDX0090-115

Meta's Market Share: Monthly Active Users

Meta's PSN Services Market Share – Monthly Active Users
July 2011–December 2022, United States

Legend:
- Market Participants
- Comscore (Desktop)
- Comscore (Mobile)
- Comscore (Multiplatform)
- Onavo
- Historical Comscore Reports
- data.ai

Source: PX9007 (Hemphill Rebuttal) at Ex. A-6.

Market Shares: Daily Active Users

PSN Services Market Shares – Daily Active Users
January 2018–December 2022, United States

Legend: Facebook, Instagram, Facebook + Instagram, Snapchat, MeWe, BeReal, Google+, Myspace, Path, KakaoStory, LINE, Other

Source: PX9007 (Hemphill Rebuttal) at Ex. A-3.

PDX0090-117

Market Shares: Time Spent

PSN Services Market Shares – Time Spent
September 2015–December 2022, United States

Legend:
- Facebook
- Instagram
- Facebook + Instagram
- Snapchat
- MeWe
- BeReal
- Google+
- Myspace
- Path
- KakaoStory
- LINE
- Other

Market Shares: Stories and Feed Posts

PSN Services Market Shares as Measured by Stories and Feed Posts
January 2022–June 2022, United States

Meta Share:

■ Facebook   ■ Instagram

Source: PX9000 (Hemphill Report) at Ex. 47.

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Market Shares: Time Spent on Feed and Stories

Shares of PSN Services Market – Feed and Stories Only – Time Spent
February to June 2022 for Facebook and Instagram, September 2022 to January 2023 for ████████, United States

Meta Share:
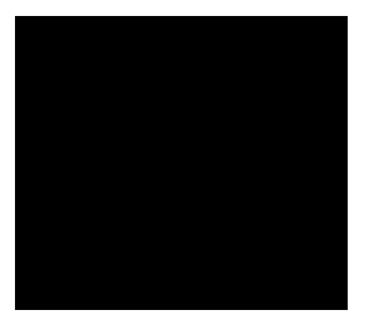
■ Facebook ■ Instagram

Market Share Sensitivity: Survey Results

Meta's PSN Services Market Shares Including Incidental Friend-Related Activity on Non-PSN Apps
United States

Survey Source (Year)	Prorated DAU	Prorated MAU	Prorated Time Spent
Malkiewicz (2023)	78.3%	76.7%	77.7%
Meta (2021)	72.4%	69.3%	72.0%
TikTok (2019)	74.0%	71.0%	73.8%
Audience Project (2019)	72.4%	69.3%	71.8%

Source: PX9007 (Hemphill Rebuttal) at Ex. 34; *see also* Ex. A14-A17.

1.2 (F) – Barriers to Entry and Expansion

Meta's Monopoly Power Is Protected by Strong Network Effects

"**We are hard to compete with, our network effects are substantial**, your friends are all here, you have made a big investment in your Facebook identity and network and that's hard to leave behind, and furthermore, every day, our users increase that investment in Facebook."

Facebook Document: "Top Investor Questions"; Sheryl Sandberg Talking Points (May 2, 2012)

Sheryl Sandberg
Former COO
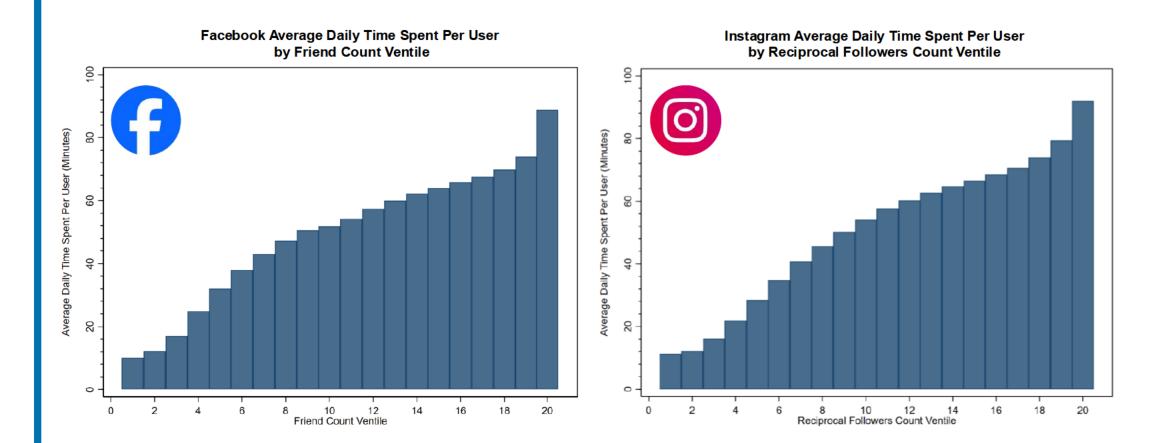
"Generally I think network effects are hard to beat. After 4 years of watching eBay try to kill itself from the inside **I was incredibly impressed at how hard it was to kill something with real network effects**. Similarly with Facebook's competitors (VK, StudiVZ, Tuenti, Orkut, etc...) who gained network effects it was super super hard to disrupt them even with a superior product."

Email from Alex Schultz to Jan Koum (May 18, 2016)
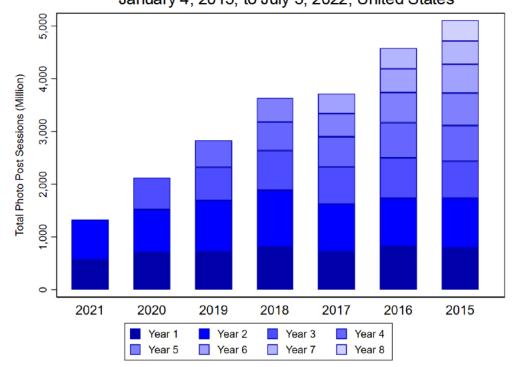
Alex Schultz
VP of Analytics and CMO

Source: PX9000 (Hemphill Report) at ¶¶ 666-668; PX1204 at -003; PX15200 at -002.

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PDX0090-123

Meta's Monopoly Power Is Protected by Strong Network Effects

Facebook Average Daily Time Spent Per User by Friend Count Ventile

Instagram Average Daily Time Spent Per User by Reciprocal Followers Count Ventile

Source: PX9000 (Hemphill Report) at Exs. 2, 4.

PDX0090-124

Meta's Monopoly Power Is Protected by Significant Switching Costs

Facebook Photo Post Sessions by Registration Year
January 4, 2015, to July 3, 2022, United States

"When you start using an app you have to pay some cost – learning how it works, adding your friends . . . . **once you've paid it you'll stick with it even if the relative quality declines**."

Meta Document: "Ratchet Effects in App Growth"
(June 25, 2018)

"[T]he construction of a social network requires affirmative proactive consent from hundreds, thousands, billions of people. And **reproducing those clicks one by one is painstaking**, especially when I've already made that investment elsewhere."

Bradley Horowitz (Google) Testimony
(May 17, 2023)

Network Effects, Switching Costs, and Capital Costs Make Entry and Expansion Difficult

"**Google+ failed to get users to switch from Facebook**, which was the leading app at the time. Required a separate, confusing Google+ login account; no clear differentiation from FB, and required categorization of contacts (Circles). People didn't post or engage with the product from the start, **as it was too similar to FB, which had leading network effects**."

Meta Document: "Apps that Have Declined / Died – Vignettes"
(May 3, 2018)

Roelof Botha
(Sequoia Capital)

" ████████████████ We've invested in other companies over the five, six years that have attempted to go after social. But the distribution advantages that Facebook and Instagram now enjoy are so powerful that it has been impossible to get any other company to find a wedge. ████████
████████████████████████████"

Roelof Botha Testimony
(Jan. 24, 2023)

Source: PX9000 (Hemphill Report) at ¶¶ 662-682; PX3659 at -003; Botha Dep. Tr. (Jan. 24, 2023) at 99:19-100:5.

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PDX0090-126

1.3 – Responses to Meta's Arguments

Meta Claim: "Ad Load Is Not So Bad"

Mark Zuckerberg

"[O]ver time, the quality of the ads as people report them to us has basically approached the quality of the organic content."

Mark Zuckerberg Trial Testimony
(Apr. 15, 2025)

Sheryl Sandberg
Former COO

"We always wanted the ads to be as high quality or even better than the organic content. And I think over time we achieved that."

Sheryl Sandberg Trial Testimony
(Apr. 17, 2025)

John Hegeman
Chief Revenue Officer

"[O]verall, the ads that we show don't have a very significant impact on the amount of people who choose to use our products or how they feel about them."

John Hegeman Trial Testimony
(May 1, 2025)

PDX0090-128

Ad Load Is a Meaningful Tax on User Experience

John Hegeman
Chief Revenue Officer

"[Q.] [W]e can agree that most users on Meta will generally prefer not to look at more ads if they instead have the option to look at fewer ads; is that right?

A. Yeah, I suspect many people would choose that.

Q. And you're not aware of any age cohort in the United States that derives a positive engagement effect from ads; right?

A. I'm not."

John Hegeman Trial Testimony
(May 1, 2025)

Kevin Systrom
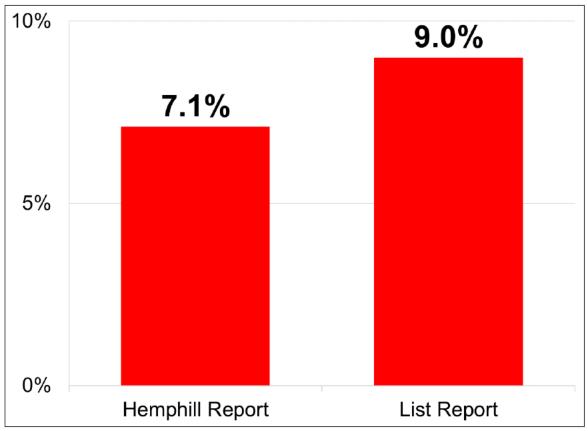
"Q. So maybe this goes without saying, but is the reason that increasing ads on Instagram would hurt engagement is because users don't like ads?

A. That's one way of saying it. Yes. Exactly."

Kevin Systrom Trial Testimony
(Apr. 22, 2025)

Ad Load Is a Significant Burden on Users
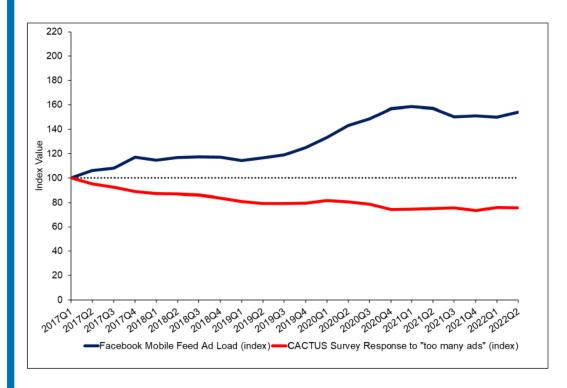
Effect of Zero Ads on Time Spent on Facebook
Zero Ads vs. Regular Ad Load, United States

Source: PX9000 (Hemphill Report) at Ex. C-50 (March 2021 and March 2022); List Report at ¶ 197 (as of January 2023).

PDX0090-130
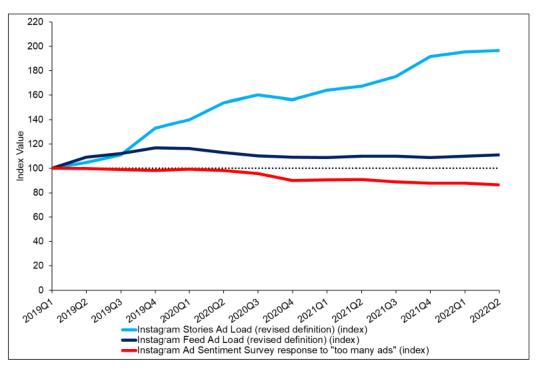
Ad Load Is a Meaningful Tax on User Experience

User Sentiment for Facebook Ads vs. Facebook Feed Ad Load Indexed to Q1 2017

Legend:
— Facebook Mobile Feed Ad Load (index) — CACTUS Survey Response to "too many ads" (index)

User Sentiment for Instagram Ads vs. Instagram Feed and Stories Ad Load Indexed to Q1 2019

Legend:
— Instagram Stories Ad Load (revised definition) (index)
— Instagram Feed Ad Load (revised definition) (index)
— Instagram Ad Sentiment Survey response to "too many ads" (index)

PDX0090-131

Meta Claim: "Friends and Family Sharing Is in Decline"

Table 1: U.S. Content from Friends as Share of Time Spent and Total Content Viewed on Facebook by Surface and Overall, January 2025

Facebook Surface	Share of Total Facebook Time from Friends on Surface [A]=[B]*[C]	Surface Share of Facebook Time [B]	Percentage of Time Spent on Surface from Friends [C]	Share of Total Facebook Impressions from Friends on Surface [D]=[E]*[F]	Surface Share of Facebook Impressions [E]	Percentage of Impressions on Surface from Friends [F]
Facebook Reels	0%	41%	0%	0%	23%	0%
Facebook News Feed	11%	40%	28%	13%	51%	25%
Profile	1%	4%	24%	2%	7%	23%
Permalink	1%	4%	27%	1%	3%	28%
Facebook Stories	3%	4%	69%	3%	5%	68%
Photos	1%	3%	31%	3%	8%	35%
Facebook Watch	0%	1%	0%	0%	0%	0%
video_chaining	0%	1%	1%	0%	0%	2%
Search	0%	1%	4%	0%	1%	6%
Facebook Groups	0%	1%	8%	0%	2%	6%
Other	0%	1%	19%	0%	0%	34%
Total	**17%**	**100%**		**21%**	**100%**	

Notes:

[1] Table includes top 10 surfaces in terms of share of time spent. The rest of surfaces are grouped into "Other".

[2] Per 2023 06 05 Meta's Sixth Set of Written Responses to FTC's Data 30b6 Questions, Facebook News Feed includes surface values "top_news", "most_recent_feed" and "seen_feed." Facebook Reels includes surface value "sfv_shorts." Profile includes surface value "timeline." Facebook Watch includes surface value "vh_live." Photos includes surface values "snowflake_medias" and "photos." Facebook Stories includes surface values "fb_stories" and "fb_stories_chaining." Facebook Groups includes surface values "groups" and "groups_tab."

Sources: FTC-META-014039755, 2023 06 05 Meta's Sixth Set of Written Responses to FTC's Data 30b6 Questions.

Source: DX1152.

Demand for Friends and Family Sharing Has Remained Large over Time
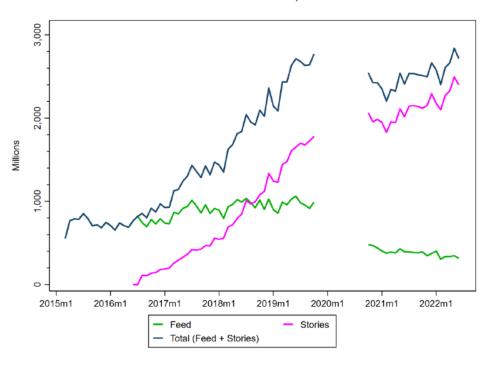
Facebook Original Broadcast Post Sessions
April 2013 – June 2022, United States

Instagram Feed and Stories Posts
March 2015 – June 2022, United States

Note: Instagram Feed data are unavailable in the period December 2019 through August 2020, and incomplete in November 2019 and September 2020.
Source: PX9007 (Hemphill Rebuttal Report) at Exs. 7, 8.

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Even Prof. Carlton's "Friend" Classifications Confirm That Demand Remains Large on Facebook Today

Facebook Impressions on "Friend" Content
January 2025, United States
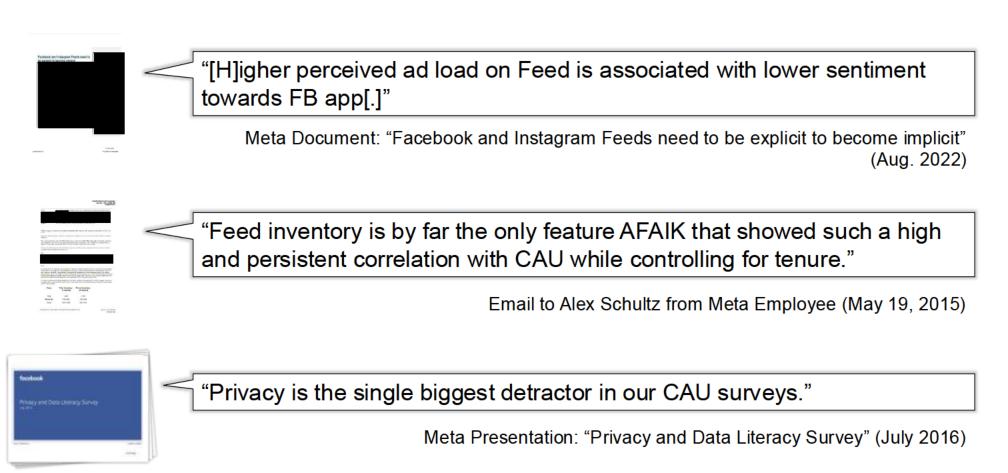
Even Prof. Carlton's "Friend" Classifications Confirm That Demand Remains Large on Instagram Today

Instagram Impressions on "Friend" Content
January 2025, United States

Monopoly Output Reduction: Poor Quality Lowers User Sentiment

"[H]igher perceived ad load on Feed is associated with lower sentiment towards FB app[.]"

Meta Document: "Facebook and Instagram Feeds need to be explicit to become implicit" (Aug. 2022)

"Feed inventory is by far the only feature AFAIK that showed such a high and persistent correlation with CAU while controlling for tenure."

Email to Alex Schultz from Meta Employee (May 19, 2015)

"Privacy is the single biggest detractor in our CAU surveys."

Meta Presentation: "Privacy and Data Literacy Survey" (July 2016)

Source: PX9007 (Hemphill Rebuttal) at ¶¶ 731, 751-759, 776-780; PX3570 at -009; PX3167 at -002; PX3774 at -029.

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PDX0090-136

Monopoly Output Reduction: Lower User Sentiment Associated with Reduced Engagement

"Sentiment is at an all time low with no significant recovery, likely driving headwinds for deletes/deactivations and disengagement."
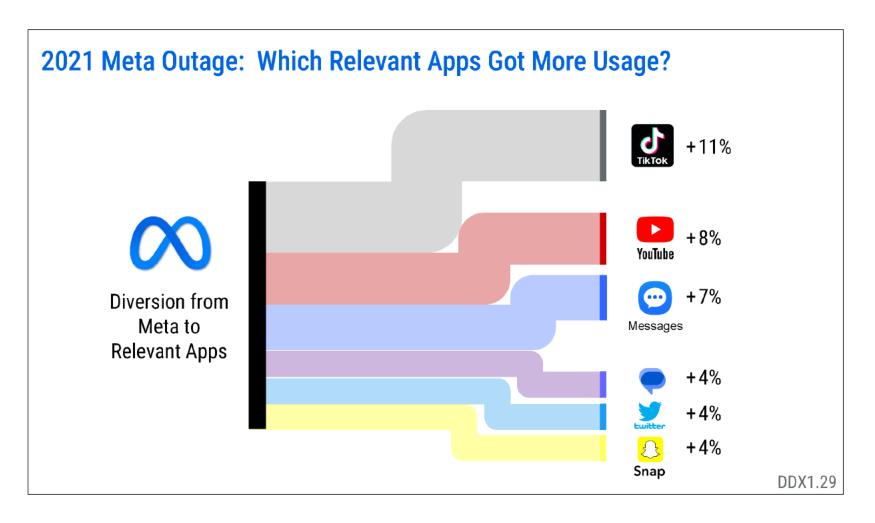
Meta Presentation: "FB US Long Term Themes" (Apr. 2021)

"In most countries, including the US, GFW [Good For the World], Trust, and CAU [Cares About Users] have strong positive correlations with sharing participation."

Meta Document: "Sentiment and Overall Sharing Participation are Correlated" (Jan. 2019)

Source: PX9007 (Hemphill Rebuttal) at ¶ 358; DX600 at 5; PX3391 at -001.

Meta Claim: "Outages Show Substitution and Inform Market Definition"

2021 Meta Outage: Which Relevant Apps Got More Usage?

Diversion from Meta to Relevant Apps

- TikTok +11%
- YouTube +8%
- Messages +7%
- +4%
- Twitter +4%
- Snap +4%

DDX1.29

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PDX0090-138

Meta's "Quantitative Analyses" Are Misleading and Uninformative

Price Increase Is. . .	2021 Meta Outage	List Pricing Experiment	2020 India Ban of Apps	List Switching Study
Applied to products in market, starting from competitive level	❌	❌	❌	❌
Small	❌	❌	❌	❌
Non-transitory	❌	❌		❌
Limited to products in market	❌		❌	❌

Source: PX9007 (Hemphill Rebuttal) at ¶¶ 25, 28, 211-228.

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Opinion 2:   Meta's acquisitions of Instagram and WhatsApp harmed competition and consumers of personal social networking services in the United States

Economic Framework

1. Examining whether the firm possesses monopoly power

2. **Examining whether the firm's acquisition harmed competition:**

   a. Is the acquisition likely, by eliminating the target as a competitive constraint, to preserve the firm's monopoly position?

   b. Are competition and consumers harmed by the elimination of the competitive constraint?

   c. Are there procompetitive effects of the acquisition, dependent upon the acquisition for their achievement, that are large enough to prevent the competitive harms?

PDX0090-141

Opinion 2: Instagram and WhatsApp Posed Significant Competitive Threats

Instagram posed a significant competitive threat to Meta in personal social networking services in the United States, such that the acquisition impeded competition and preserved Meta's monopoly power.
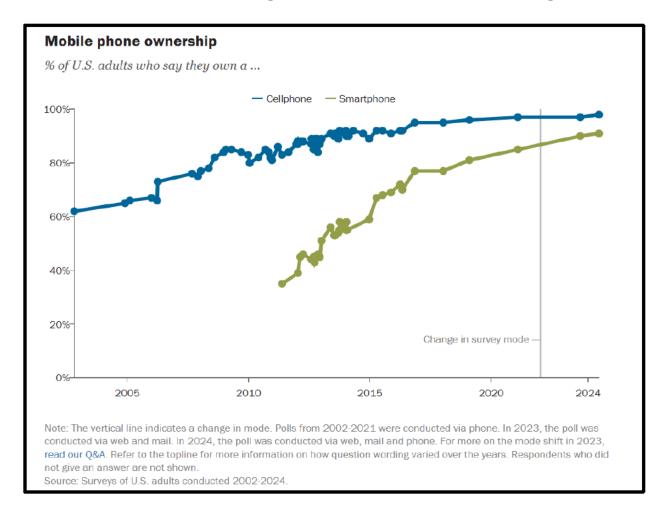
WhatsApp posed a significant competitive threat to Meta in personal social networking services in the United States, as a source of entry from mobile messaging, such that the acquisition impeded competition and preserved Meta's monopoly power.

PDX0090-142

Opinion 2: Instagram and WhatsApp Acquisitions Harmed Competition and Consumers

- Harm to competition
  - Eliminated head-to-head competition
  - Strengthened competitive moats and entry barriers

- Harms to consumers
  - Increased ad load
  - Diminished friends-and-family sharing experience
  - Privacy and data collection
  - No compensation to users

- Merger-specific procompetitive benefits not shown to outweigh the competitive harms

PDX0090-143

Shift to Mobile

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Shift to Mobile: Rapid Increase in Smartphone Adoption

Mobile phone ownership

% of U.S. adults who say they own a …

— Cellphone — Smartphone

Change in survey mode →

Note: The vertical line indicates a change in mode. Polls from 2002-2021 were conducted via phone. In 2023, the poll was conducted via web and mail. In 2024, the poll was conducted via web, mail and phone. For more on the mode shift in 2023, read our Q&A. Refer to the topline for more information on how question wording varied over the years. Respondents who did not give an answer are not shown.
Source: Surveys of U.S. adults conducted 2002-2024.

"About nine-in-ten (91%) [Americans] own a smartphone, up from just 35% in the Center's first survey of smartphone ownership conducted in 2011."

Pew Research Center,
"Mobile Fact Sheet"
(Nov. 13, 2024)

Source: Pew Research Center, "Mobile Fact Sheet," https://www.pewresearch.org/internet/fact-sheet/mobile (last updated Nov. 13, 2024).

Meta Recognized Shift to Mobile as an Existential Threat

> "We were certainly in the middle of this **very dangerous platform transition** . . . and that, historically, a lot of companies had not been able to make that leap."

Mark Zuckerberg Testimony (Aug. 2020)

> "We were in a period where we needed . . . to change the whole engineering process of the company to update it to what this new platform was. We had to remake what our whole business was. I think we were **quite vulnerable during that period . . . .**"

Mark Zuckerberg Testimony (Aug. 2020)

Meta Struggled with the Shift to Mobile

"[I]t's not a secret that **our current iPhone app is not that awesome** . . . . [I]t's probably a fair thing to say that people tolerate the Facebook mobile experiences because they like using the Facebook network primarily on their desktop."

Mark Zuckerberg at Meta Town Hall
(Apr. 6, 2012)

"[W]e had to start over and rewrite everything to be native. So that brings us to where we are now. We burnt two years. That's really painful."

Mark Zuckerberg at TechCrunch Conference
(Sept. 2012)

Source: PX9000 (Hemphill Report) at ¶¶ 97, 98; PX15180 at 0:40-1:10; TechCrunch, *Fireside Chat With Facebook Founder and CEO Mark Zuckerberg*, YouTube (Sept. 21, 2012), https://youtu.be/o2wPzjH2xwA?si=uaE6TlXQ1LnSDfe3&t=720.

Technology Transitions in Prior Monopolization Cases

> **"A new competitor 'born' on the Internet is Netscape.** Their browser is dominant with 70% usage share allowing them to determine which network extensions will catch on. They are pursuing a multi-platform strategy where they move the key API into the client to **commoditize the underlying operating system**."

GX-20 from *United States v. Microsoft Corporation (2001)*
Email from Bill Gates to Executive Staff and Direct Reports
(May 25, 1995)

Instagram
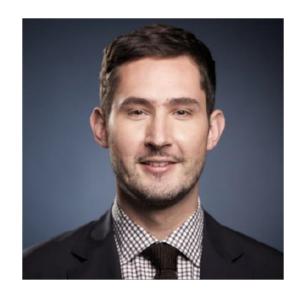
Instagram Seizes Opportunity of the Shift to Mobile

"**The best companies in the world get created around shifts in technology that open up opportunities**. And for us, that shift in technology was that people were going to go from computing on their desktop or their laptop to computing on the go on their phone. And **there was a brief moment and opening** where computing had shifted, but the services created for computing had not shifted to mobile in a big enough way. So that left **an opening for someone like Instagram to create a mobile-optimized experience . . . .**"

Kevin Systrom Testimony
(Sept. 15, 2020)

Instagram: Mobile-First Photo-Centric PSN App

Kevin Systrom

"We were a photo social network that let you post your photos to your friends . . . ."

Kevin Systrom Testimony
(Sept. 15, 2020)

"I just remember thinking that Instagram could be, one, the mobile social network . . . and, two, I believe that . . . . [T]he primary way we would communicate would be with photos, and possibly videos some day."

Kevin Systrom Testimony
(Sept. 15, 2020)

Instagram Provided an Attractive User Experience

"When you look at Instagram and Path and then go back to our NF [News Feed], **it looks like ours was built in the stone age**. It's crazy how small the photos are. It just screams that this is not a serious app for sharing photos."

Post to Meta Discussion Board from Mark Zuckerberg (Jan. 21, 2012)

Mark Zuckerberg

"The photos team is now focused almost exclusively on a new mobile photo app as **we gawk at Instagram's simple photo-sharing app taking off**."

Email from Chris Cox to mteam (Feb. 22, 2011)
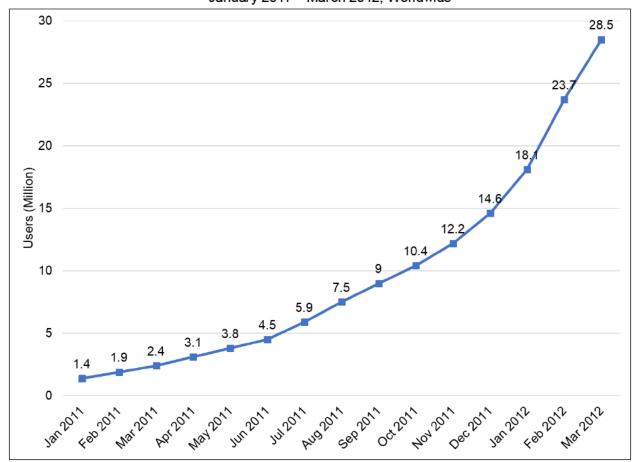
Chris Cox
Chief Product Officer

PDX0090-152

Instagram Was Growing Rapidly

Instagram Registered Users
January 2011 – March 2012, Worldwide

Instagram Had Strong User Engagement

Date: April 3/ 2012	Instagram	Facebook iPhone
# Users	30M+ registered users	116M MAU iPhone users 55M MAU photo uploaders
# Photo uploads	5M+ photo per day	20M photo per day
# likes	50M likes per day	56M photo likes per day
# comments	7M comments per day	54M photo comments per day
# total photos uploaded	1B+ photos uploaded	5B photos uploaded

Email from C. Liang to Chris Cox, Mike Schroepfer, and others
(Apr. 3, 2012)

Source: PX9000 (Hemphill Report) at Ex. 75; PX1295 at -002.

PDX0090-154

Meta Recognized Instagram as a Significant Competitive Threat

"In the time it has taken us to get ou[r] act together on this Instagram has become a **large and viable competitor** to us on mobile photos . . . . I do think **it's a crisis** that we don't have a mobile photos app out and I'd prioritize pushing that out as much as possible."
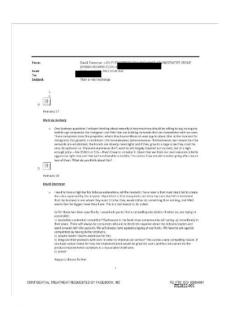
Email from Mark Zuckerberg to Meta Executives
(Sept. 8, 2011)

"I just need to decide if we're going to buy Instagram . . . . It's really expensive – probably ~$1 billion. I think they're **pretty threatening** to us . . . . Instagram can hurt us meaningfully without becoming a huge business . . . ."

Message from Mark Zuckerberg to ▮▮▮▮▮
(Apr. 5, 2012)

Source: PX9000 (Hemphill Report) at ¶¶ 120, 831; PX1180 at -002; PX12710 at -001, -002.

Instagram Excelled in a Distinct Social Mechanic

"[T]here are . . . **a finite number of different social mechanics** to invent. Once someone wins at a specific mechanic, it's difficult for others to supplant them without doing something different."

Email from Mark Zuckerberg to David Ebersman (Feb. 28, 2012)

Instagram Stood Out from Others

Kevin Systrom,
Testimony
(Sept. 15, 2020)

> Instagram was "growing very quickly, and we heard that [Path, TreeHouse, and PicPlz] weren't."

Email from B. Taylor
(Meta CTO) to
Mark Zuckerberg
(Jan. 22, 2012)
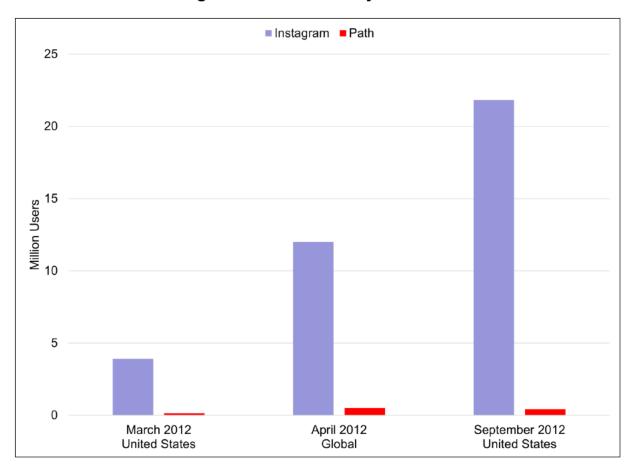
> "I don't care as much about Path. I personally worry more about Instagram . . ."

Email from Mark
Zuckerberg to
M. Andreessen
(Jan. 22, 2012)

> "Path has a huge amount of hype, but only a million or so people actually use it at all."

PDX0090-157

Instagram Stood Out from Others: Instagram vs. Path

Instagram and Path Monthly Active Users

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Instagram Had Other Potential Acquirers

Email from Mark Zuckerberg to Executives (Sept. 8, 2011)

"I view this as a big strategic risk for us if we don't completely own the photos space. If Instagram continues to kick ass on mobile or if Google buys them, then over the next few years they could easily **add pieces of their service that copy what we're doing now**, and if they have a growing number of people's photos then that's a real issue for us."

Message from Mark Zuckerberg to Mike Schroepfer (Mar. 9, 2012)

"Twitter has been courting [Instagram] aggressively, so we need to think about **what the world would be like if Twitter bought them** . . . . I generally think we should do this [buy Instagram]. I think we should be willing to pay even more . . . ."

Source: PX9000 (Hemphill Report) at ¶¶ 120, 904; PX1180 at -001; DX1096 at -20, -26.

WhatsApp

OTT Messaging Has Distinct Benefits

Jan Koum

"I, as a user of SMS, found the shortcomings to be as follows: . . . there was no way to know if your message actually made it to the recipient . . . there was no way to know how quickly the message arrived. . . . there was a limitation on the length of text that you could put in a single message. . . . there was no easy way to have a good conversation. . . . [and] with multimedia, while you could share images you wouldn't know if they'll be able to view it."

Jan Koum Testimony
(Oct. 2, 2020)

Brian Acton

"[B]y adopting an internet technology, you can provide a richer user experience, a more robust user experience, and a more featureful user experience [through OTT]."

Brian Acton Testimony
(Apr. 13, 2023)

Source: PX9000 (Hemphill Report) at ¶ 947, Koum IH Tr. (Oct. 2, 2020) at 46:10-19; Acton Dep. Tr. (Apr. 13, 2023) at 31:11-13.

Meta Recognized Mobile Messengers as a Threat to Pivot into PSN Services

"The sum-product of shift to mobile + messenger services **morphing into fully fleshed SSN sites** is IMO **the biggest competitive threat** we face as a business."

Email from Javier Olivan to Mark Zuckerberg, Sheryl Sandberg, and others (Jan. 9, 2013)

Javier Olivan
Meta VP, Growth

"Therefore, **the biggest competitive vector** for us is for some company to build out a messaging app for communicating with small groups of people, and then **transforming that into a broader social network**. Companies like Line and Kakao in Korea and Tencent in China are running this exact strategy and it's working reasonably well. They haven't expanded outside of Asia yet, but **this is a big risk for us.**"

Email from Mark Zuckerberg to Board (Feb. 11, 2013)

Mark Zuckerberg

Source: PX9000 (Hemphill Report) at ¶ 128; PX12108 at -002 ; PX10271 at -002.

Top OTT Messengers Pivoted Into PSN Services, Centered in Asia

facebook

Messenger competitive landscape

"Overview: the threat of messaging apps . . .

Pose a tremendous threat beyond messaging

- LINE, KakaoTalk, WeChat leveraging their messaging platform **to expand into social networking**
- Rolling out user profiles with timeline, status updates, news feeds
- Some now offering key features we lack: VoIP, video calling, stickers"
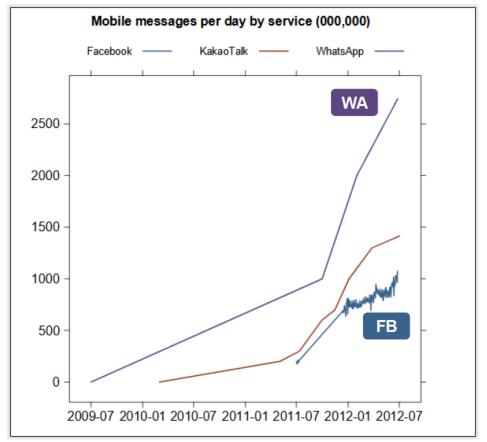
Meta Presentation: Messenger Competitive Landscape
(July 30, 2012)

"With the exception of WhatsApp, all of these other messaging apps [LINE, KakaoTalk, WeChat] are using messages as a **springboard to build more general mobile social networks**. . . . Given how important messaging is on mobile, this seems like a reasonable way for a network to grow to me"

Message from Mark Zuckerberg to Mike Schroepfer
(Apr. 22, 2012)

Source: PX9000 (Hemphill Report) at § 4.2.1.3, ¶¶ 961, 1071; PX10452 at -004; PX1116 at -001.

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WhatsApp Was a Global Category Leader in OTT Messaging

Mobile messages per day by service (000,000)

Facebook —— KakaoTalk —— WhatsApp ——

WA

FB

2500
2000
1500
1000
500
0

2009-07 2010-01 2010-07 2011-01 2011-07 2012-01 2012-07

Facebook Presentation: Mobile Messengers;
Growth and Engagement
(Sept. 25, 2012)

"The messaging market currently supports multiple players at scale with WhatsApp the **largest on a global basis**, and Kakao, WeChat, and LINE owning Korea, China, and Japan respectively.

WhatsApp has reached its **leading scale** of 360 million registered users without spending on user acquisition . . . ."

Sequoia Capital Memo to Investors
(June 3, 2013)

Source: PX9000 (Hemphill Report) at ¶ 1006; PX12105 at -011; PX10232 at -003.

Meta Recognized WhatsApp as a Threat to Pivot into PSN Services

"[W]e do not have any messaging offering that even competes in whatsapp's messaging space . . . . **the scary part**, of course, is that this kind of mobile messaging is a **wedge into broader social activity/sharing** on mobile we have historically led in web."

Email from Amin Zoufonoun to Javier Olivan
(June 3, 2013)

"Trust me – **this keeps me awake every night**. We are definitely **not playing in the same field** as whatsapp does (as evidenced by the fact that we only have 200M messenger to messenger daily sends as opposed to their 12B daily sends by now)."

Email from Javier Olivan to Amin Zoufonoun
(June 3, 2013)

Source: PX9000 (Hemphill Report) at ¶¶ 963, 966-967; PX12127 at -001.

WhatsApp Had Other Interested Potential Acquirors

"Overtures from Facebook, Google, Tencent, Microsoft and others continue."

Email from Jim Goetz to Jan Koum
(Jan. 22, 2013)

"After a recent blog post suggested that Google might be in talks to acquire Whatsapp for $1B, the company has been contacted by Facebook, Microsoft, Twitter, Yahoo, Tencent, and NHN."

Memo from Sequoia Capital to Investors
(June 3, 2013)

Source: PX9000 (Hemphill Report) at ¶ 1032; PX1363 at -001; PX10232 at -012.

PDX0090-166

Other Potential Acquirors Represented Pivot Threats

"[T]he case for Google acquiring WhatsApp has only gotten stronger in the past 6 months. G+ has shown itself to be a failure, while at the same time, Asian competitors to WA have proven the model of taking a mobile communication network and **leveraging it to bootstrap a social network** can be successful. . . . Consequently, if WA is acquirable at all, the risks to us not being the acquirer have grown."

Message from Ben Davenport to Javier Olivan
(Oct. 17, 2012)
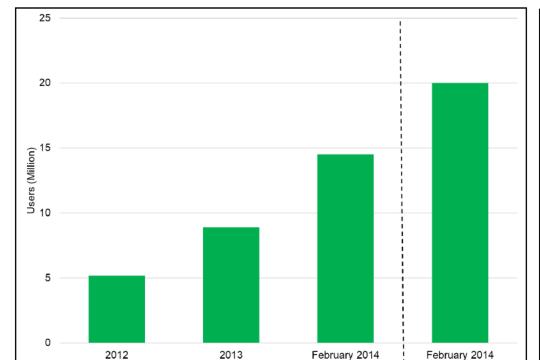
"That is definitely what I would do if I was [Google] . . . ."

Message from Javier Olivan to Ben Davenport
(Oct. 17, 2012)

Source: PX9000 (Hemphill Report) at ¶¶ 131-135; PX1297 at -001.

WhatsApp Was a Pivot Threat in the United States
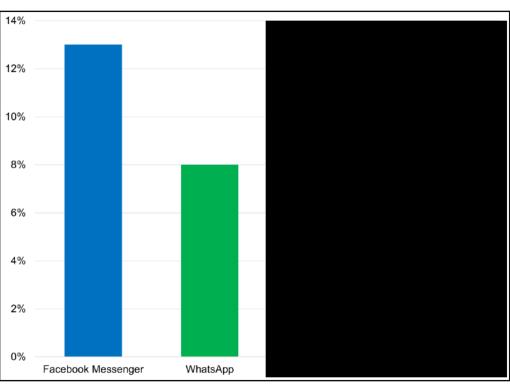
WhatsApp Monthly Active Users
United States, 2012-2014

Penetration Rate of Messaging Applications
United States, May 2013
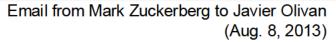
WhatsApp Was a Pivot Threat in the United States

"My point about WhatsApp's direction is that if they build substantive features beyond just making SMS free, that could be enough for them **to tip markets like the US** . . . ."

Email from Mark Zuckerberg to Javier Olivan
(Aug. 8, 2013)

Mark Zuckerberg

"I'd love to also write a post on my thoughts about why I am more motivated than ever to still be working on messenger:

. . . **The biggest prize is still up for grabs** – USA! USA! USA! ;)"
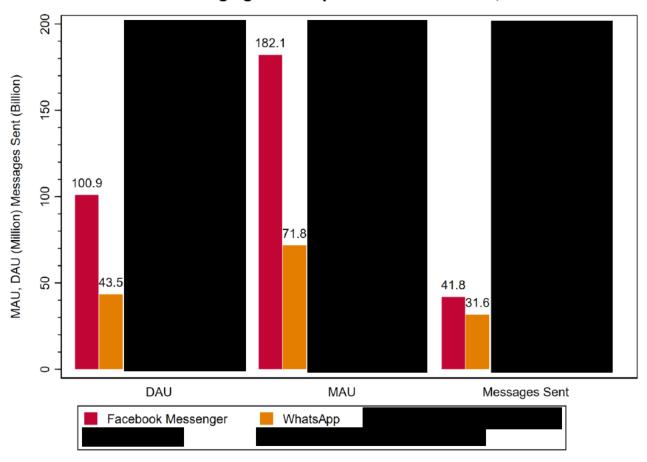
Email from Alex Schultz to Javier Olivan, et al.
(Feb. 20, 2014)

Alex Schultz

Source: PX9000 (Hemphill Report) at ¶ 1000; PX1486 at -001; PX11108 at -002.
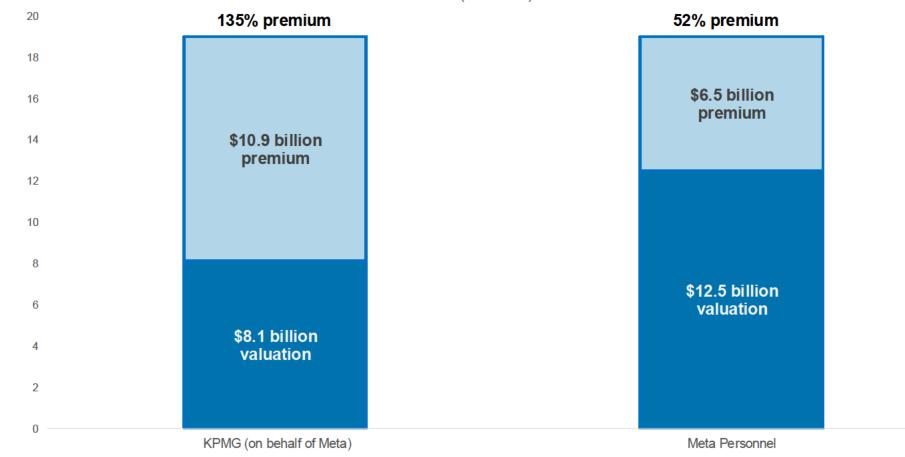
WhatsApp Has Grown in US Since Acquisition

Mobile Messaging Landscape in the United States, 2021

Source: PX9000 (Hemphill Report) at Ex. 79.

PDX0090-170
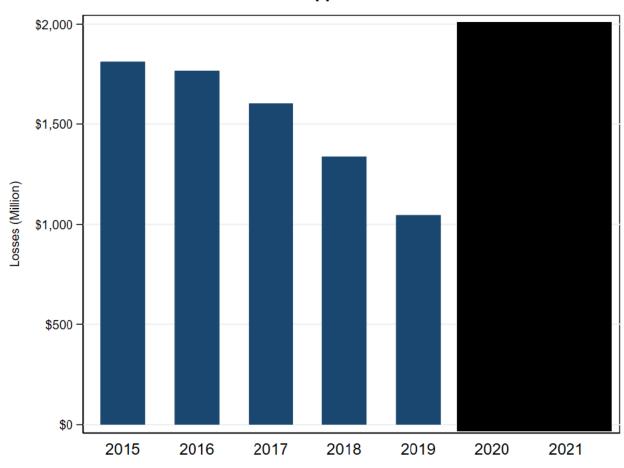
Meta Paid a Premium to Acquire WhatsApp

$19B Purchase Price v. Pre-Acquisition Valuations of WhatsApp As a Standalone Company
($ billions)

135% premium

$10.9 billion premium

$8.1 billion valuation

KPMG (on behalf of Meta)

52% premium

$6.5 billion premium

$12.5 billion valuation

Meta Personnel

PDX0090-171

Meta Has Incurred Large Losses on WhatsApp Since Its Acquisition

Global WhatsApp Annual Loss

Pivoting Into PSN Services Provided a Monetization Path

"WhatsApp's user base combined with industry standard monetization could yield meaningful high margin revenue."

Memo from Sequoia Capital to Investors
(June 3, 2013)

"[I]t's common that founders change minds over time. Especially if you are losing a lot of money, then you have to face reality. . . . They have responsibilities to their shareholder, to their investors. And more importantly, I believe, they have responsibilities to their employees. . . . You cannot tell them that you will never monetize and you will just keep losing money."

Prof. Jihoon Rim Trial Testimony
(Apr. 21, 2025)

Source: PX10232 at -004; Rim Trial Tr. (Apr. 21, 2025) at 27:22-28:19.

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Harm to Competition

Opinion 2: Instagram and WhatsApp Acquisitions Harmed Competition and Consumers

- **Harm to competition**
  - **Eliminated head-to-head competition**
  - **Strengthened competitive moats and entry barriers**

- Harms to consumers
  - Increased ad load
  - Diminished friends-and-family sharing experience
  - Privacy and data collection
  - No compensation to users

- Merger-specific procompetitive benefits not shown to outweigh the competitive harms

Source: PX9000 (Hemphill Report) at ¶¶ 798-799; PX9007 (Hemphill Rebuttal) at ¶¶ 723-726, 788-790.

PDX0090-175

The Acquisitions Eliminated Head-to-Head Competition

"[L]et's keep one thing in mind here: **Instagram is Facebook, and Facebook is Instagram**. Behavior will naturally shift to where we as an org create the most value for users—and as Mark said, **it's just our job not to go out of our way to shift behavior away from posting photos on FB.** In other words, **we shouldn't run any promotions that are in the tone of 'Try Instagram instead.'**"

Email from Kevin Systrom to Javier Olivan
(Oct. 25, 2012)

"[Since] we last talked about staffing and projects we could **cancel or slow** . . . I would add two more options to this list: **Snap** (now or post-launch) **since we are acquiring Instagram** . . . Just so I can be completely clear on this, my advice would be to cancel every single one of these projects . . . ."

Message from Mark Zuckerberg to Mike Schroepfer
(Apr. 22, 2012)

Source: PX9000 (Hemphill Report) at ¶ 1071; PX15244 at -002; PX1116 at -002.

PDX0090-176

The Acquisitions Eliminated Head-to-Head Competition

"WhatsApp has the opportunity to build out a social platform either as a standalone company or via acquisition by an existing social player."

Sequoia Capital Memo to Investors
(June 3, 2013)

Google Presentation: "Comm Companies Review"
(Feb. 3, 2014)

PDX0090-177

Meta Cannibalization Concerns and Instagram Ad Load Increase

"I think we're badly mismanaging this right now. **There's absolutely no reason why IG ad load should be lower than FB at a time when we're having engagement issues in FB**. . . . [I]t's possible we should even have a higher ad load on IG while we have this challenge so we can replace some ads with PYMK on FB to turn around the issues we're seeing."

Email from Mark Zuckerberg to Senior Meta Executives
(Jan. 30, 2018)

"I think [Zuckerberg's] framework is that [Instagram] Stories is net negative to FB time . . . . I told [Zuckerberg and Cox] **we're hurting a product that's working to make up for one that isn't**."

Message from Mark Rabkin to Adam Mosseri
(Oct. 15, 2018)

"Clearly he wants some painful trade offs . . . **He wants to stick it to IG**."
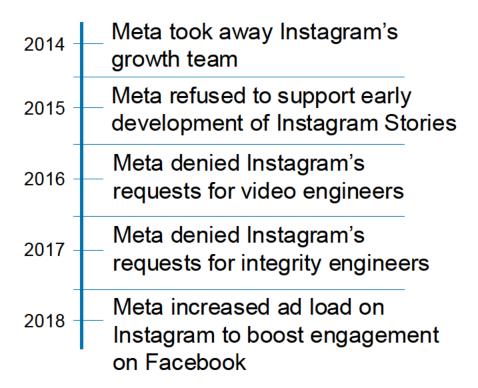
Message from Adam Mosseri to Mark Rabkin
(Oct. 15, 2018)

Source: PX9000 (Hemphill Report) at ¶¶ 1091-1095; PX15112 at -008; PX12347 at -003, -004.

Meta's Actions Undermined Instagram's User Experience and Growth

"My general sense was that we were – while we were given people every year, we were given far fewer than what would be reasonable if you actually wanted to invest in something that was as good as Instagram was in the world."

Kevin Systrom Trial Testimony (Apr. 22, 2025)

2014 — Meta took away Instagram's growth team

2015 — Meta refused to support early development of Instagram Stories

2016 — Meta denied Instagram's requests for video engineers

2017 — Meta denied Instagram's requests for integrity engineers

2018 — Meta increased ad load on Instagram to boost engagement on Facebook

PDX0090-179
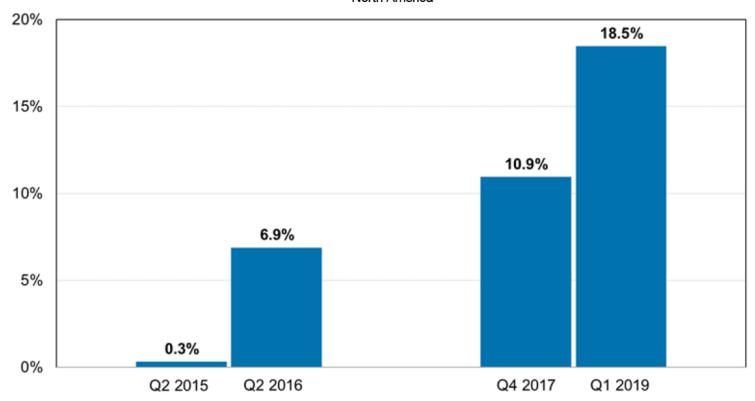
Instagram Ad Load Increases

Instagram Feed Ad Load
North America

Note: Ad load is measured as the ratio of VPV ad impressions to VPV total (ad and organic) impressions.

Meta Acquired Instagram to Serve as a Competitive Moat

> "On merging, I think what we'd do is keep their product running . . . . By not killing their products we prevent everyone from hating us and we make sure we don't immediately create a hole in the market for someone else to fill . . . ."

Message from Mark Zuckerberg in Aquarium
(Feb. 11, 2012)

Mark Zuckerberg

> "There are network effects around social products and a finite number of different social mechanics to invent. Once someone wins at a specific mechanic, it's difficult for others to supplant them without doing something different. It's possible someone beats Instagram by building something that is better to the point that they get network migration, but **this is harder as long as Instagram keeps running as a product.**"

Email from Mark Zuckerberg
(Feb. 28, 2012)

> "I'd just keep it running. Insurance . . . . By insurance I don't mean starve it. Just let it run relatively independently."

Message from Mark Zuckerberg to Mike Schroepfer
(Mar. 9, 2012)

PDX0090-181

The WhatsApp Acquisition Strengthened Meta's Competitive Moat
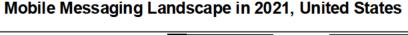
"[W]e understand that Facebook's intention is to prioritize market share and user growth over monetization in the near term in order to capture market share . . . . Further, **we understand that the deal held certain defensive value for Facebook**."
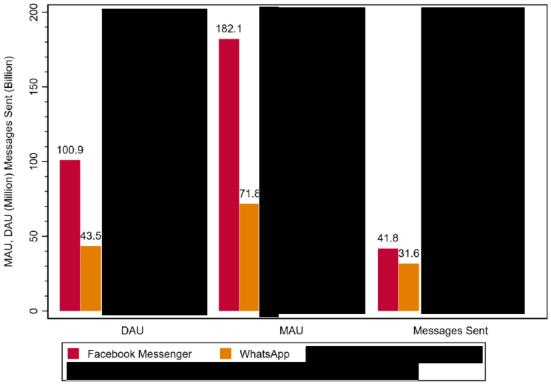
KPMG Valuation of WhatsApp for Facebook, Inc. (Oct. 6, 2014)

Mobile Messaging Landscape in 2021, United States

Bar chart, y-axis: MAU, DAU (Million) Messages Sent (Billion)

- DAU: Facebook Messenger 100.9, WhatsApp 43.5
- MAU: Facebook Messenger 182.1, WhatsApp 71.8
- Messages Sent: Facebook Messenger 41.8, WhatsApp 31.6

Legend: ■ Facebook Messenger ■ WhatsApp

Source: PX9000 (Hemphill Report) at ¶ 1119, Ex. 79; PX2994 at -009.

Harm to Consumers

Opinion 2: Instagram and WhatsApp Acquisitions Harmed Competition and Consumers

- Harm to competition
  - Eliminated head-to-head competition
  - Strengthened competitive moats and entry barriers

- **Harms to consumers**
  - **Increased ad load**
  - **Diminished friends-and-family sharing experience**
  - **Privacy and data collection**
  - **No compensation to users**

- Merger-specific procompetitive benefits not shown to outweigh the competitive harms

PDX0090-184

The Acquisitions Allowed Meta to Set a Higher Ad Load
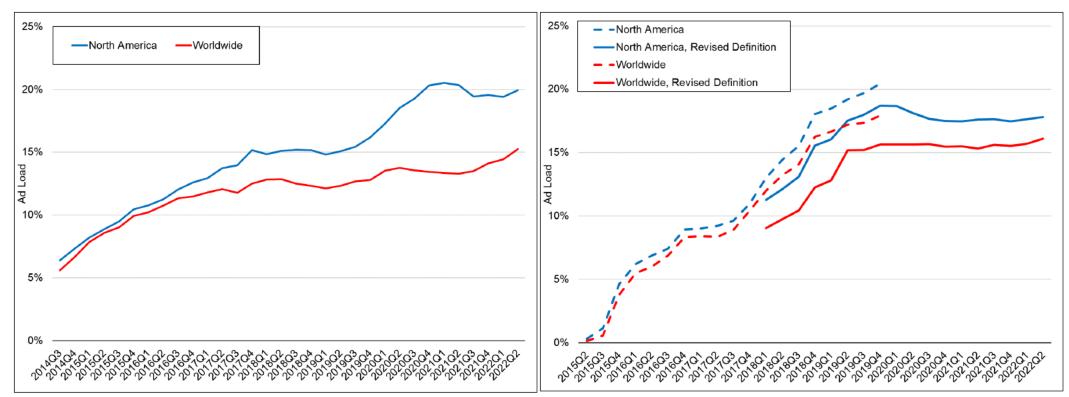

Facebook Mobile Feed Ad Load
Q3 2014 - Q2 2022, North America and Worldwide

Instagram Feed Ad Load
Q2 2015 - Q2 2022, North America and Worldwide

Source: PX9000 (Hemphill Report) at Exs. 53-54.

Meta Recognizes Underinvestment in Friends and Family Sharing

"It's not clear if we're investing enough in supporting the core engagement drivers in Facebook (Friending, Stories, IFR, Notifications, etc). . . . Friend sharing continues to be a big asset for Facebook but we're not investing as much in it. . . . Because of resourcing constraints, **IG has put some features with growth and engagement potential (Stories) into maintenance mode**. . . . **We're underinvesting in Stories across all apps."**

Meta Document: "PG [Product Group] Leads Dinner 1/19 – Summary of conversation about Facebook trends" (Jan. 19, 2022)

"I think if you tried to take stock of the overall market size that public content > friend content > group/community content and that this will remain true in the future as well . . . . **I worry that we've gotten over-focused on [group/community content] at the expense of defending/growing the friend market as much as we can . . . ."**

Message from John Hegeman to Meta Senior Executives (Feb. 6, 2022)

Source: PX9007 (Hemphill Rebuttal) at ¶¶ 730-71; PX12497 at -001, -002; PX12669 at -005.

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Poor User Experience with Respect to Friends and Family Content

FSS Survey Preliminary Analysis

02/10/2019

"US users have significantly more complaints mainly because **they do not see posts from enough of their friends** . . . . The issue 'do not see posts from enough of my friends' starts to increase dramatically when users have more than 20 friends."
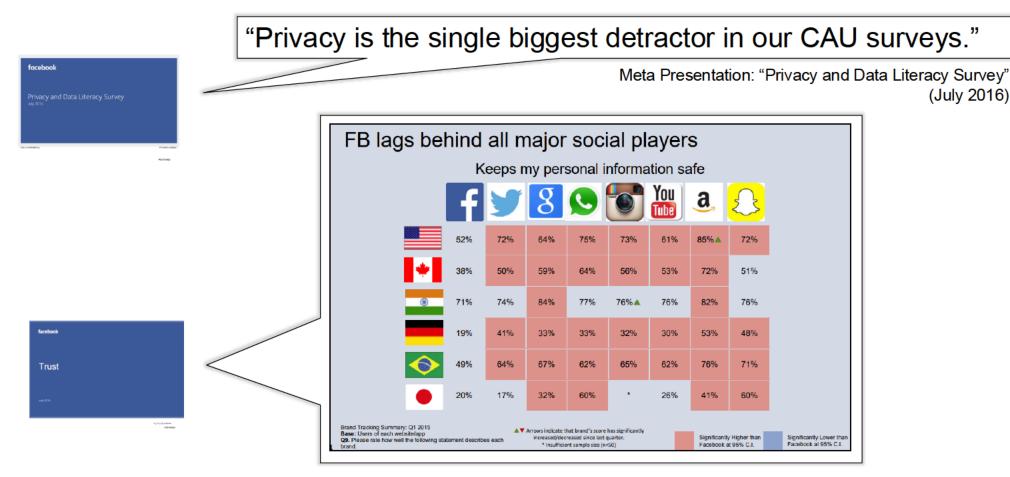
Meta Presentation: "FSS Survey Preliminary Analysis"
(Feb. 10, 2019)

Lorax H1 2021: FAST pain points

TL;DR

- The Lorax survey measures users' pain points with the FB app. Pain points that are above the median in both severity and prevalence are considered priority areas for improvement.
- Within Feed and Stories (FAST), the top pain points that emerged for US users in H1 2021 were: (1) Missing posts from friends; (2) receiving too many notifications; (3) seeing the same posts over and over again; (4) seeing too many unconnected posts.
- Each of these pain points represent ongoing areas of investment within FAST. This note outlines the current and future work to improve these issues.

"This pain point has a long history . . . . UX research in H2 2020 and H1 2021 drew attention to friend diversity as an unattended issue in the US and CA: **Users are seeing fewer friends (distinct friend actors) than they want**."

Meta Presentation: "Lorax H1 2021: FAST Pain Points"
(Oct. 14, 2021)

H1 2022 Lorax: FB Home pain points

TL;DR

The Lorax is an on-platform survey that is run regularly to identify the most prevalent and severe pain points with FB. 'Top' pain points are those that were above the median in both prevalence and severity (details). This document summarizes the top pain points that concern products within FB Home for US/CA users.

- Missing friends' posts and unbalanced feed composition continue to be top pain points.
- Repeated posts is a new top pain point for all US/CA users.
- Uninteresting posts is a new top pain point for YAs, but not older adults.
- Too much unconnected content continues to be a top pain point for older adults, but is no longer a top pain point for YAs.
- Unrequested app refresh is no longer a top pain point.

"Missing friends' posts and **unbalanced feed composition** continue to be top pain points."

Meta Presentation: "H1 2022 Lorax: FB Home Pain Points"
(Aug. 25, 2022)

User Frustration with Privacy and Data Collection Practices

"Privacy is the single biggest detractor in our CAU surveys."

Meta Presentation: "Privacy and Data Literacy Survey"
(July 2016)

FB lags behind all major social players

Keeps my personal information safe

			g			You Tube	a	
🇺🇸	52%	72%	64%	75%	73%	61%	85%▲	72%
🇨🇦	38%	50%	59%	64%	56%	53%	72%	51%
🇮🇳	71%	74%	84%	77%	76%▲	76%	82%	76%
🇩🇪	19%	41%	33%	33%	32%	30%	53%	48%
🇧🇷	49%	64%	67%	62%	65%	62%	76%	71%
🇯🇵	20%	17%	32%	60%	*	26%	41%	60%

Brand Tracking Summary: Q1 2015
Base: Users of each website/app
Q9. Please rate how well the following statement describes each brand.

▲▼ Arrows indicate that brand's score has significantly increased/decreased since last quarter.
* Insufficient sample size (n<50)

Significantly Higher than Facebook at 95% C.I.
Significantly Lower than Facebook at 95% C.I.

Meta Presentation: "Trust"
(July 28, 2015)

User Frustration with Privacy and Data Collection Practices

**Main Tracking Survey of U.S. Facebook Users
"How much control do you have over your personal
information on Meta's apps and products?"**

**Main Tracking Survey of U.S. Instagram Users
"How much control do you have over your personal
information on Instagram?"**

User Frustration with Privacy and Data Collection Practices

Meta Workplace Post from Matthew Idema (Oct. 10, 2019)

Decision #2: what control should we offer for ads data

Meta Presentation: "WhatsApp Status Ads Options" (Oct. 2019)

Source: PX9007 (Hemphill Rebuttal) at ¶¶ 735-736, 766-770; PX10068 at -001; PX15006 at -010.

User Frustration with Privacy and Data Collection Practices

Curtiss Cobb
VP of Research

"Q. And it's true that Meta's research showed that consumers believed **concerns about privacy and data collection outweighed any potential benefits of targeted ads**? A. Their stated opinions, yes."

Curtiss Cobb Trial Testimony
(Apr. 30, 2025)

Apple App Tracking Transparency (ATT) Opt-Out Rates

- ▓▓▓▓▓▓▓ for Facebook
- ▓▓▓▓▓▓▓ for Instagram

Ltr. from G. Block (Kellogg Hansen) to the FTC re FTC's Request for Production No. 104
(May 31, 2025)

Source: PX9007 (Hemphill Rebuttal) at ¶¶ 755-59, 776-780; Cobb Trial Tr. (Apr. 30, 2025) at 211:10-13 (discussing PX3774); PX10074 at -002, -003; PX13189 at -002.

Meta's Uncompensated Data Extraction

PROJECT BLUEJAY UPDATE

SEPT 15, 2020

Goals of Project BlueJay

BlueJay's goal is to use subscriptions/rewards to:

1. Develop a substantial incremental revenue stream that isn't vulnerable to the same risks as our ads business.

2. Incentivize people to opt into personalized ads and take other actions that create value for the FB network (e.g. group administration).

3. Improve perception of value exchange from FB products.

Meta Presentation: "Project Bluejay Update"
(Sep. 15, 2020)
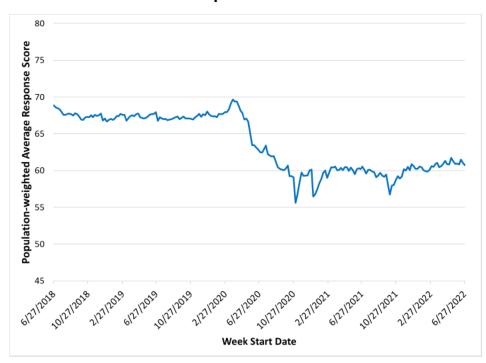
John Hegeman
Chief Revenue Officer

"I recall a discussion in which people could get . . . cash back for purchases if they also agreed to have those purchases be usable for personalizations of ads experiences."

John Hegeman Testimony
(Apr. 10, 2023)

Source: PX9000 (Hemphill Report) at ¶ 1191; PX12664 at -003, -007; Hegeman Dep. Tr. (Apr. 10, 2023) at 195:2-6.

Meta User Surveys Show Declining Overall Satisfaction

Main Tracking Survey of U.S. Facebook Users
"Overall, how satisfied are you with your Facebook experience?"

Main Tracking Survey of U.S. Instagram Users
"Overall, how satisfied are you with your Instagram experience?"

Source: PX9007 (Hemphill Rebuttal) at Exs. 1-2.

PDX0090-193

Meta's Claimed Procompetitive Benefits

PDX0090-194

Opinion 2: Instagram and WhatsApp Acquisitions Harmed Competition and Consumers

- Harm to competition
  - Eliminated head-to-head competition
  - Strengthened competitive moats and entry barriers

- Harms to consumers
  - Increased ad load
  - Diminished friends-and-family sharing experience
  - Privacy and data collection
  - No compensation to users
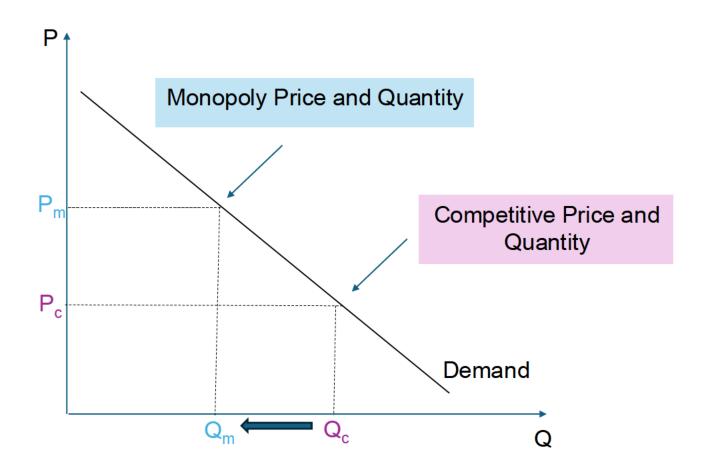
- **Merger-specific procompetitive benefits not shown to outweigh the competitive harms**

Monopolists Often Increase Output Over Time
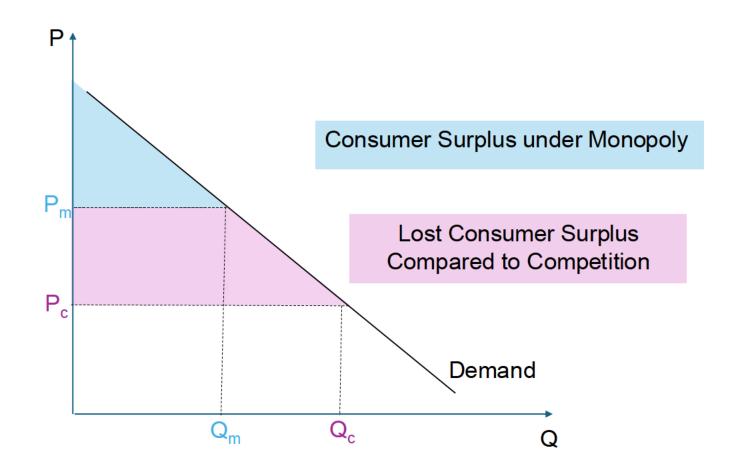
Google Daily Searches
Worldwide

The Exercise of Monopoly Power Reduces Output

The Exercise of Monopoly Power Reduces Consumer Surplus

Meta Revenue and Income Are High and Increasing

Dollars in billions	2024	Q1 2025
Family of Apps Advertising Revenue	$160.6	$41.4
Cost of Revenue (firm-wide)	$30.2	$7.6
Gross Profit	$130.5	$33.8
Gross Margin	*81.2%*	*81.7%*
Family of Apps Income from Operations	$87.1	$21.8
Operating Margin	*54.2%*	*52.6%*

Note: Meta's Forms 10-K and 10-Q do not report cost of revenue for Family of Apps specifically. The table above shows Meta's firm-wide cost of revenue. Q1 2025 firm-wide revenue of $42.3 billion reflects an increase of 16% compared to Q1 2024, attributed to an increase in advertising revenue.
Source: PX0715 at -61, -75, -87, -101; Meta Q1 2025 Form 10-Q at 6-7, 13, 26, 28, 37-40.

Economic Approach to Procompetitive Benefit Claims

- Benefit must be "passed through" to consumers of the relevant product

- Benefit must depend on the acquisition for its achievement

- This approach is reflected in the Merger Guidelines

PDX0090-200

Meta's Claimed Procompetitive Justifications

Monetization
- Meta's advertising systems benefited Instagram
- Meta implemented "Click-to" advertising and business messaging on WhatsApp

Infrastructure
- Meta's infrastructure benefited Instagram and WhatsApp

Integrity
- Meta's integrity systems benefited Instagram and WhatsApp

Cost Savings
- Meta's infrastructure delivered cost savings to Instagram and WhatsApp
- Meta has delivered other cost savings

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PDX0090-201

Meta's Claimed Procompetitive Justifications are Not Properly Attributed to the Acquisitions and Not Verifiable

Prof. Aral

- Meta's acquisition was not necessary for Instagram or WhatsApp to monetize successfully.
- Meta's monetization of WhatsApp has not been successful.
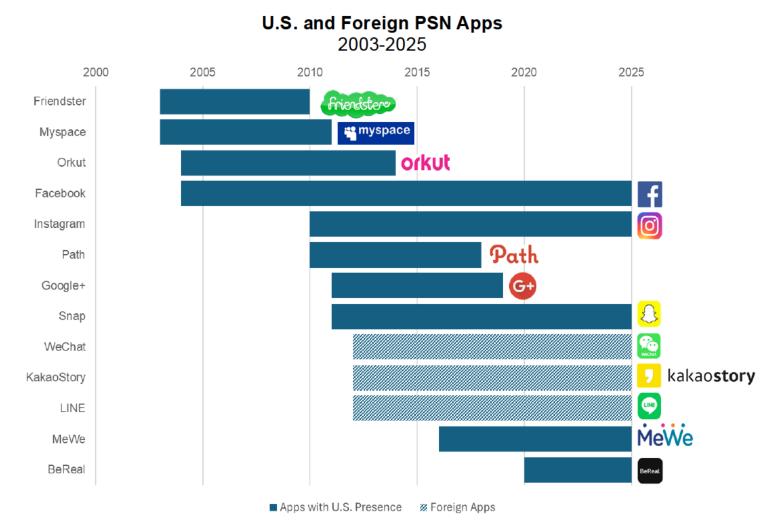
Mr. Bray

- Meta's acquisition was not necessary for Instagram or WhatsApp to continue to manage its infrastructure requirements.
- Access to Meta's infrastructure did not improve the user experience for Instagram or WhatsApp in any verifiable manner given available evidence.

Prof. McCoy

- Meta's acquisition was not necessary for Instagram and WhatsApp to continue to manage integrity issues.
- Meta's acquisition has not helped Instagram address integrity issues in any verifiable manner given available evidence.

Many of Meta's Claimed Procompetitive Benefits Have Not Benefited Users of PSN Services

- Higher ad load *harms* consumers.

- High advertising profits do not benefit users.

- Other claimed benefits do not accrue to users of PSN services.

- Fixed cost savings do not accrue to users.

Appendix A: Further Details on Apps

PDX0090-204

PSN Apps Serve Distinct Demand for Friends and Family Social Networking

U.S. and Foreign PSN Apps
2003-2025

■ Apps with U.S. Presence   ▨ Foreign Apps

Source: PX9000 (Hemphill Report) at § 3.2.2.3, ¶¶ 81, 85, 970-977.

Other Apps Lack Core Use and Functionality for Friends and Family Sharing

|		Core Use of Friends and Family Sharing?	Social Graph of Friends and Family?	Shared Social Space for Broadcast Sharing with Friends and Family?
Specialized Social Networking Apps	LinkedIn	Professional Social Networking [1]	No – Professional Connections [2]	No – Feed of Professional Content [3]
	Nextdoor	Proximity-based Social Networking [4]	No – Neighbors in a Local Neighborhood [5]	No – Feed of Local Content [6]
	Strava	Fitness Social Networking [7]	No – Athletes [8]	No – Feed of Athletic Activities [9]
Interest-Based Network Apps	Twitter	Public Discussion [10]	No – Public Figures Following [11]	No – Global Town Square [12]
	Reddit	Community Conversations [13]	No – Anonymous Subreddits [14]	No – Public Discussion Forums [15]
	Pinterest	Visual Discovery [16]	No – Taste Graph [17]	No – Virtual Pin Board [18]
Entertainment Consumption Apps	YouTube	Video Entertainment [19]	No social graph [20]	No – Public Video Publishing [21]
	TikTok	Video Entertainment [22]	No – Content Graph [23]	No – "For You" Public Video Feed [24]
	Twitch	Live Video Entertainment [25]	No social graph [26]	No – Public Video Stream [27]
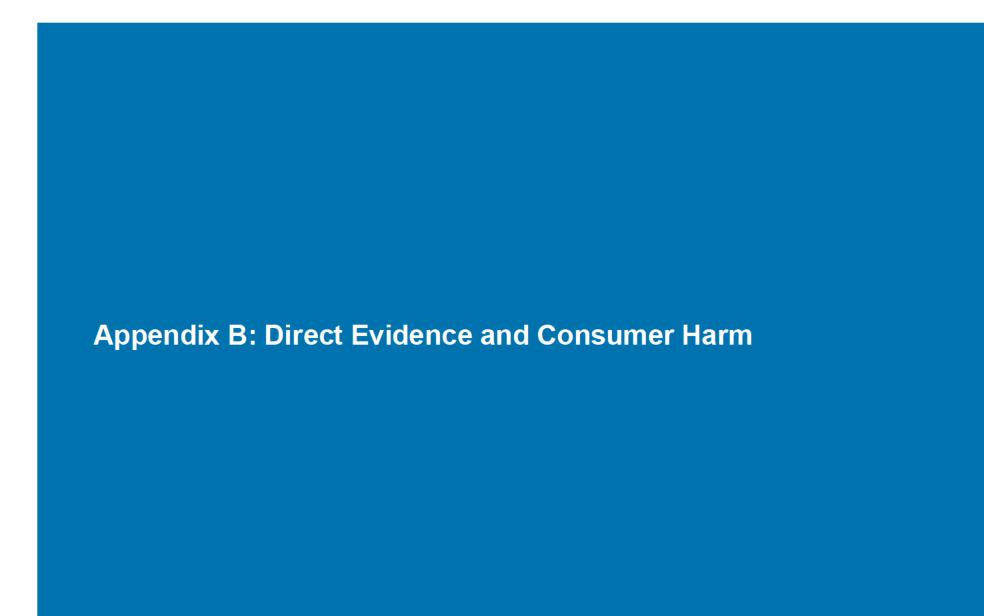
Source: PX9000 (Hemphill Report) at § 3.2.2.4.

PDX0090-206

Other Apps Lack Core Use and Functionality for Friends and Family Sharing

[1] PX9000 (Hemphill Report) at ¶ 400.

[2] PX9000 (Hemphill Report) at ¶¶ 400, 403.

[3] PX9000 (Hemphill Report) at ¶¶ 380, 400.

[4] PX9000 (Hemphill Report) at ¶ 414.

[5] PX9000 (Hemphill Report) at ¶¶ 417-419.

[6] PX9000 (Hemphill Report) at ¶ 420.

[7] PX9000 (Hemphill Report) at ¶ 429.

[8] PX9000 (Hemphill Report) at ¶ 430.

[9] PX9000 (Hemphill Report) at ¶ 431.

[10] PX9000 (Hemphill Report) at ¶ 442.

[11] PX9000 (Hemphill Report) at ¶¶ 448-454.

[12] PX9000 (Hemphill Report) at ¶ 455.

[13] PX9000 (Hemphill Report) at ¶ 471.

[14] PX9000 (Hemphill Report) at ¶¶ 472-473, 477.

[15] PX9000 (Hemphill Report) at ¶ 479.

[16] PX9000 (Hemphill Report) at ¶¶ 486-489.

[17] PX9000 (Hemphill Report) at ¶¶ 490-491.

[18] PX9000 (Hemphill Report) at ¶ 492.

[19] PX9000 (Hemphill Report) at ¶¶ 501-506.

[20] PX9000 (Hemphill Report) at ¶¶ 507-514.

[21] PX9000 (Hemphill Report) at ¶¶ 515-517.

[22] PX9000 (Hemphill Report) at ¶¶ 533-536.

[23] PX9000 (Hemphill Report) at ¶¶ 537-540.

[24] PX9000 (Hemphill Report) at ¶¶ 541-542.

[25] PX9000 (Hemphill Report) at ¶ 556.

[26] PX9000 (Hemphill Report) at ¶ 560.
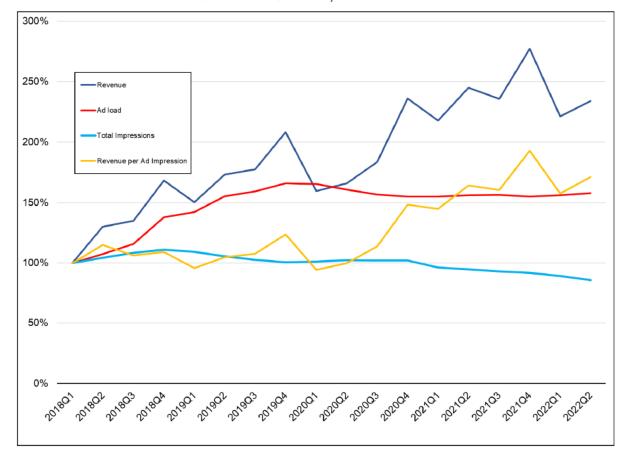
[27] PX9000 (Hemphill Report) at ¶ 563.

Appendix B: Direct Evidence and Consumer Harm

Meta Has Earned Persistently High Profits

($B)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Revenue																		
Family of Apps advertising revenue	N/A	N/A	0.8	1.9	3.2	4.3	7.0	11.5	17.1	26.9	39.9	55.0	69.7	84.2	114.9	113.6	131.9	160.6
Other revenue	N/A	N/A	0.0	0.1	0.6	0.8	0.9	1.0	0.8	0.8	0.7	0.8	1.04	1.8	3.0	3.0	3.0	3.9
Total revenue	**0.2**	**0.3**	**0.8**	**2.0**	**3.7**	**5.1**	**7.9**	**12.5**	**17.9**	**27.6**	**40.7**	**55.8**	**70.7**	**86.0**	**117.9**	**116.6**	**134.9**	**164.5**
Total costs and expenses	**0.3**	**0.3**	**0.5**	**0.9**	**2.0**	**4.6**	**5.1**	**7.5**	**11.7**	**15.2**	**20.5**	**30.9**	**46.7**	**53.3**	**71.2**	**87.7**	**88.2**	**95.1**
Income from operations	**(0.1)**	**(0.1)**	**0.3**	**1.0**	**1.8**	**0.5**	**2.8**	**5.0**	**6.2**	**12.4**	**20.2**	**24.9**	**24.0**	**32.7**	**46.8**	**28.9**	**46.8**	**69.4**
Gross margin	**73%**	**54%**	**71%**	**75%**	**77%**	**73%**	**76%**	**83%**	**84%**	**86%**	**87%**	**83%**	**82%**	**81%**	**81%**	**78%**	**81%**	**82%**
Operating margin	**-81%**	**-20%**	**34%**	**52%**	**47%**	**11%**	**36%**	**40%**	**35%**	**45%**	**50%**	**45%**	**34%**	**38%**	**40%**	**25%**	**35%**	**42%**
Gross margin omitting Reality Labs	**73%**	**54%**	**71%**	**75%**	**77%**	**73%**	**76%**	**83%**	**84%**	**86%**	**87%**	**83%**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Operating margin omitting Reality Labs	**-81%**	**-20%**	**34%**	**52%**	**47%**	**11%**	**36%**	**40%**	**35%**	**45%**	**50%**	**45%**	**41%**	**46%**	**49%**	**37%**	**47%**	**54%**

PDX0090-209

Meta Has Profitably Increased Ad Load Over Time

Components of Instagram Feed Ad Revenue
Q1 2018 - Q2 2022, North America

Note: 1Q 2018 = 100%; see report notes for explanation of how ad load is measured for each surface.
Source: PX9000 (Hemphill Report) at Ex. 57.

Meta Has Profitably Increased Ad Load Over Time

Components of Instagram Stories Ad Revenue
Q1 2018 - Q2 2022, North America

Legend:
- Revenue
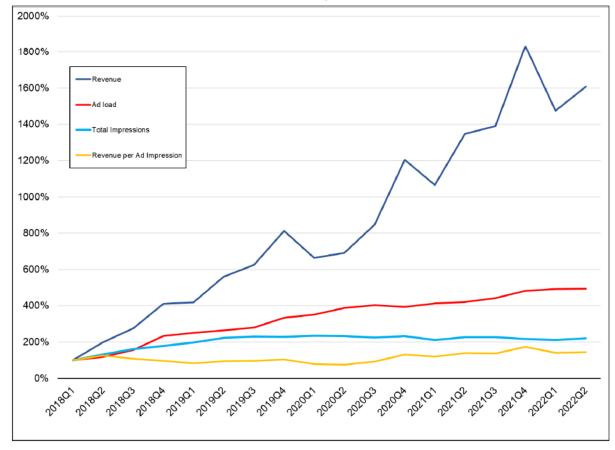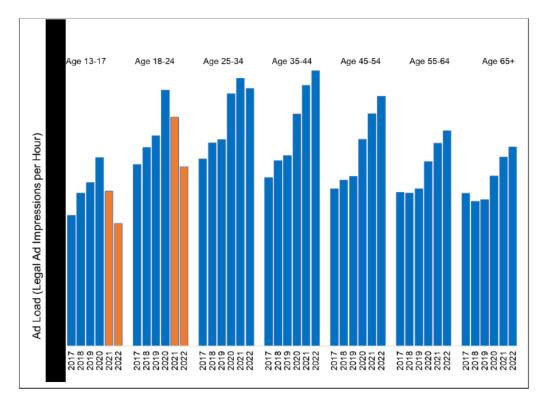- Ad load
- Total Impressions
- Revenue per Ad Impression

Note: 1Q 2018 = 100%; see report notes for explanation of how ad load is measured for each surface.
Source: PX9000 (Hemphill Report) at Ex. 58.

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Price Discrimination: Ad Load by Age on Facebook

Facebook Ad Load by Age Group and Year
2017 – 2022, United States

PDX0090-212

Meta's Revenue and Profits Arise from Surfaces Most Focused on Friends and Family Content
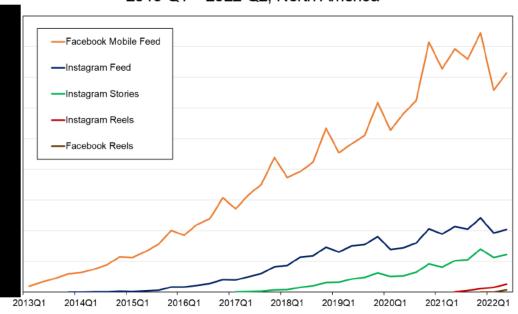
Facebook and Instagram Ad Load by Selected Surface
2014 Q3 – 2022 Q2, North America

Facebook and Instagram Ad Revenue by Selected Surface
2013 Q1 – 2022 Q2, North America

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Other Quality Surveys
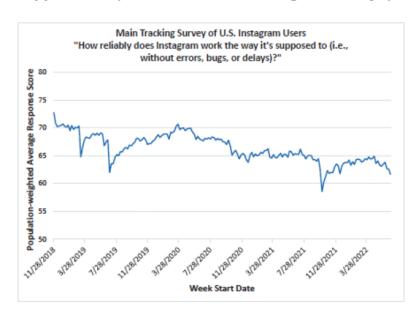
**Main Tracking Survey of U.S. Facebook Users
"How reliably does Facebook work the way it's
supposed to (i.e., without errors, bugs, or delays)?"**
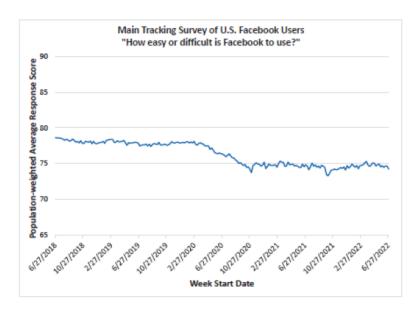
**Main Tracking Survey of U.S. Instagram Users
"How reliably does Instagram work the way it's
supposed to (i.e., without errors, bugs, or delays)?"**
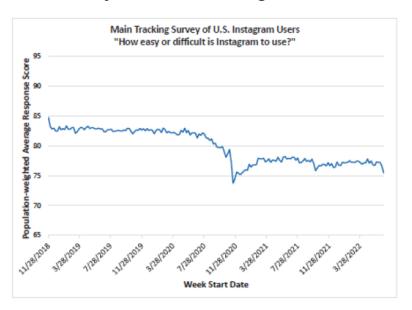
Source: PX9007 (Hemphill Rebuttal) at Exs. 1-2.

Other Quality Surveys

Main Tracking Survey of U.S. Facebook Users
"How easy or difficult is Facebook to use?"

Main Tracking Survey of U.S. Facebook Users
"How easy or difficult is Facebook to use?"

Main Tracking Survey of U.S. Instagram Users
"How easy or difficult is Instagram to use?"

Main Tracking Survey of U.S. Instagram Users
"How easy or difficult is Instagram to use?"

Source: PX9007 (Hemphill Rebuttal) at Exs. 1-2.

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Appendix C: Market Shares

Market Shares: Monthly Active Users
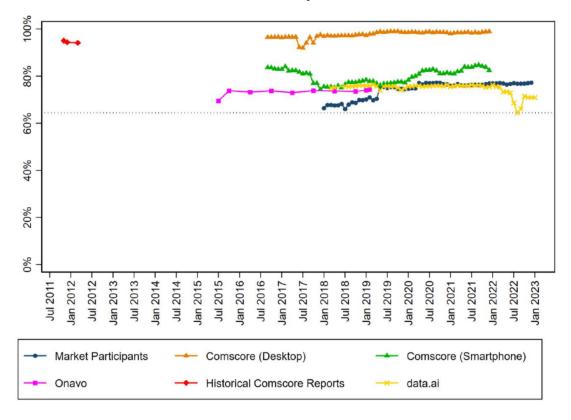
PSN Services Market Shares – Monthly Active Users
July to December 2011, March 2012, United States

|	July 2011 MAU ('000)	Share	August 2011 MAU ('000)	Share	September 2011 MAU ('000)	Share	October 2011 MAU ('000)	Share	November 2011 MAU ('000)	Share	December 2011 MAU ('000)	Share	March 2012 MAU ('000)	Share
Facebook	162,078	77.0%	162,387	76.2%	163,021	74.5%	166,000	73.2%	166,007	76.9%	162,486	75.0%	158,926	72.8%
Instagram	1,956	0.9%	1,956	0.9%	1,956	0.9%	1,956	0.9%	1,956	0.9%	1,956	0.9%	3,905	1.8%
Facebook+Instagram	164,034	78.0%	164,343	77.2%	164,977	75.4%	167,957	74.1%	167,964	77.8%	164,442	75.9%	162,830	74.6%
Myspace	36,253	17.2%	36,172	17.0%	33,658	15.4%	31,544	13.9%	28,073	13.0%	27,153	12.5%	27,824	12.7%
Google+	9,217	4.4%	11,603	5.4%	19,397	8.9%	26,354	11.6%	18,867	8.7%	24,312	11.2%	26,757	12.3%
Orkut	720	0.3%	720	0.3%	720	0.3%	720	0.3%	720	0.3%	720	0.3%	720	0.3%
Path	147	0.1%	147	0.1%	147	0.1%	147	0.1%	147	0.1%	147	0.1%	147	0.1%

Source: PX9000 (Hemphill Report) at Ex. 42.

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Market Shares: Daily Active Users

Meta's PSN Services Market Share – Daily Active Users
November 2011 – January 2023, United States

Source: PX9007 (Hemphill Rebuttal Report) at Ex. A-2.

Market Shares: Daily Active Users

PSN Services Market Shares – Daily Active Users
November 2011, December 2011, March 2012, United States
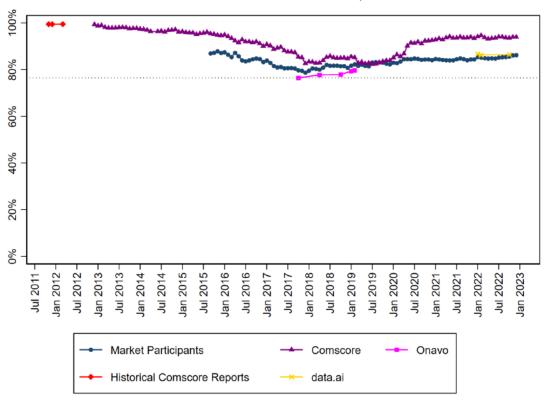
	November 2011		December 2011		March 2012	
	DAU ('000)	Share	DAU ('000)	Share	DAU ('000)	Share
Facebook	71,913	94.1%	69,953	93.4%	66,752	92.9%
Instagram	679	0.9%	679	0.9%	886	1.2%
Facebook+Instagram	72,592	95.0%	70,632	94.4%	67,639	94.1%
Myspace	2,295	3.0%	2,295	3.1%	2,295	3.2%
Google+	1,326	1.7%	1,748	2.3%	1,761	2.4%
Orkut	128	0.2%	128	0.2%	128	0.2%
Path	58	0.1%	58	0.1%	58	0.1%

Source: PX9000 (Hemphill Report) at Ex. 39.

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Market Shares: Time Spent

Meta's PSN Services Market Share – Time Spent
November 2011 – December 2022, United States

Legend:
- Market Participants
- Comscore
- Onavo
- Historical Comscore Reports
- data.ai

Source: PX9007 (Hemphill Rebuttal Report) at Ex. A-10.

Market Shares: Time Spent

PSN Services Market Shares – Time Spent
November 2011, December 2011, March 2012, United States

	November 2011		December 2011		March 2012	
	Time Spent (Million Min)	**Share**	**Time Spent (Million Min)**	**Share**	**Time Spent (Million Min)**	**Share**
Facebook	90,822	99.1%	94,115	99.1%	96,581	99.1%
Instagram	291	0.3%	291	0.3%	391	0.4%
Facebook+Instagram	91,114	99.5%	94,406	99.5%	96,972	99.5%
Myspace	315	0.3%	315	0.3%	322	0.3%
Google+	119	0.1%	141	0.1%	123	0.1%
Orkut	58	0.1%	58	0.1%	58	0.1%
Path	7	0.0%	7	0.0%	7	0.0%

Source: PX9000 (Hemphill Report) at Ex. 45.

PDX0090-221

Market Shares: Stories and Feed Posts

PSN Services Market Shares as Measured by Stories and Feed Posts
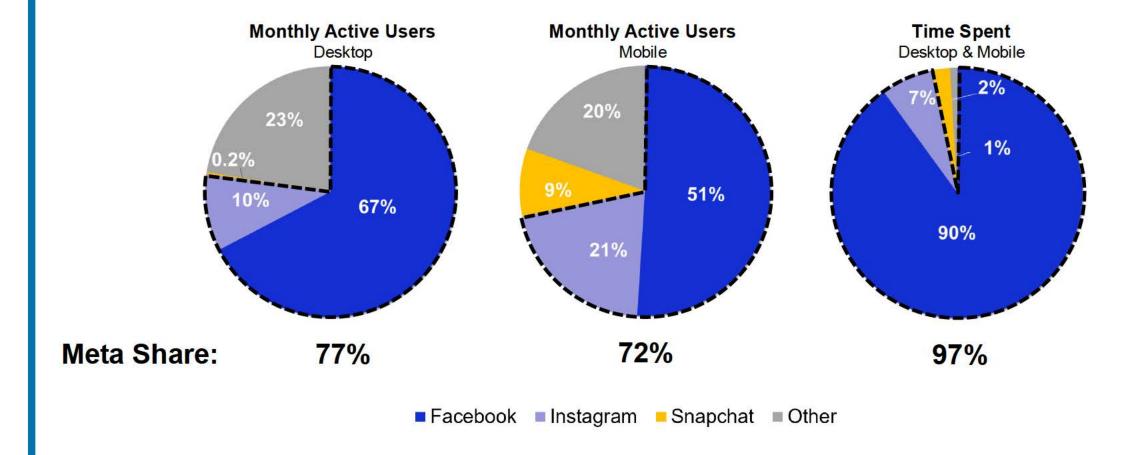
October 2020 – June 2022; United States

Source: PX9000 (Hemphill Report) at Ex. 47.

Market Shares: Time Spent on Feed and Stories

Shares of PSN Services Market – Time Spent (Feed and Stories)
February to June 2022 for Facebook and Instagram, September 2022 to January 2023 for Snapchat, United States.

Market Shares: 2014

Monthly Active Users — Desktop

Monthly Active Users — Mobile

Time Spent — Desktop & Mobile

Meta Share: 77% 72% 97%

Legend: Facebook, Instagram, Snapchat, Other

Notes: "Other" includes Myspace, Google+, Path, LINE, LiveJournal, Orkut, Pengyou, Qzone, Renren, Tuenti, VKontakte, and Weibo. Desktop MAU reported for August to December 2014.
Source: PX9000 (Hemphill Report) at Exs. C-30, C-31, C-32.

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