AMENDED Exhibit 107

PLAINTIFFS' OMNIBUS OPPOSITION TO DEFENDANTS' MOTIONS FOR SUMMARY JUDGMENT

Case No.: 4:22-md-03047-YGR
MDL No. 3047
In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation

(Meta) Zuckerberg Exhibit 14 3.27.25 mlr

Product Foundation

Problematic Use of Facebook: User Journey, Personas & Opportunity Mapping

[redacted] UXR, Well-being | March 2020

In partnership with Insitum and Convo

Personas created in collaboration with [redacted]

Facebook App Research

Artwork by Noma Bar

TL;DR

In Q4 2019 we conducted 24 in-person 1:1 interviews with 'problematic' Facebook users in the US, Brazil and India to determine which opportunities the team should pursue around excessive/problematic use of Facebook in 2020.

We tested 13 concepts crafted to address various problematic use (PU) sub-areas: sleep, productivity, relationships, parenting, loss of control, guilt.

	Our Findings	Our Recommendations
01	**Over 10 triggers contribute to the potential for problematic use (PU) but only 3 user attitudes associated with PU:** Lack of guilt, low self- control, and high pressure for giving timely replies.	Focus product opportunities around mitigating these user attitudes: increasing self-control and awareness and reducing pressure to respond. Use 3 identified PU personas for follow-up sprint or brainstorm.
02	**We removed 2 PU impact areas and added 2 more. This research uncovered 2 new PU impact areas, Safety Risks and Regretful Spending,** to add to Productivity, Sleep, Relationships, and Parenting. Fear of Missing Out (FOMO) and Loss of Control Over Time Spent (LCOTS) are not impacts. FOMO is one of the 10 triggers. LCOTS *is* PU, not a trigger nor an impact.	Ideate on solutions for Safety and Regretful Spending impacts. Eliminate Loss of Control Over Time Spent and FOMO as sub-topics to focus on for development.
03	**Most selected Productivity as their top PU priority area for FB to pursue. A loss of productivity (delayed work/chores, being late to appointments) affects sleep and relationships.** Sleep and Parenting were the next most voted areas.	Focus on Productivity as the main PU sub-area for future development because fixing it will benefit most other impact areas. Also consider a follow-up study with the updated list of impact areas and re-assess priority.
04	**6 of 13 concepts were highly rated for reducing PU across multiple impact areas. Two concepts (Time-to-Complete, You're All Caught Up) posed a risk of exacerbating PU for those with FOMO.** Highly rated concepts provided situational awareness, sense of control, customization, transparency and a sense of completion.	Recommend pursuing the top 6 concepts and brainstorming around the 6 identified opportunity areas: Increase PU awareness, Increase focused sessions, communicating Availability, encouraging restfulness, supporting healthy commitments, and removing time sensitivity.

Overview

01 **Context**

02 **Goals & Methods**

03 **Understanding the Current PU Experience**

04 **PU Personas**

05 **PU Concept Feedback**

06 **PU Opportunity Areas**

Source: "WB 2020 H1 Plan", Chandra Mohan Janakiraman

01

Context

- Facebook Well-being strategy
- Definition of Problematic Use
- Problematic Use prevalence
- Why should we care?

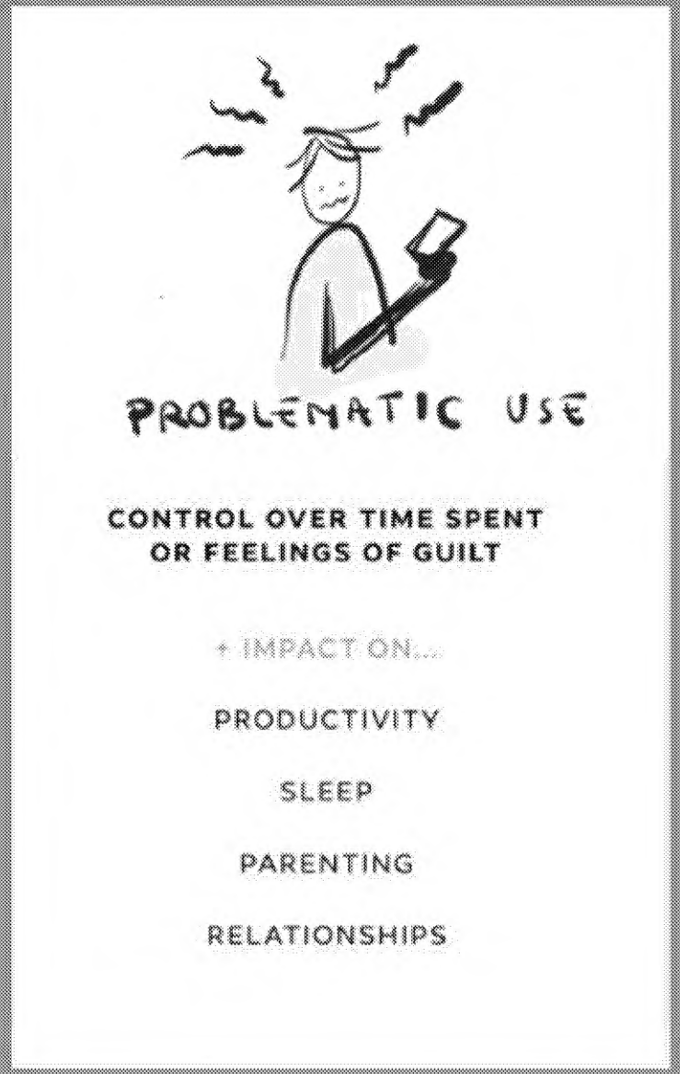
Definition

Problematic Use

We define Problematic Use (PU) as experiencing **both** of the following issues "very often" or "all the time":

- **Lack of control** or **feelings of guilt** over Facebook use.
- **Negative impact** in at least one of the following areas: productivity, sleep, parenting, or relationships.

This is sometimes referred to as "social media addiction" externally.



Source: "WB 2020 H1 Plan", [redacted]

Strategy

Facebook Well-being

- **The best external research indicates that Facebook's impact on people's well-being* is negative.** FB can have a negative effect when people feel a lack of control over the experience or when use undermines other aspects of life.
- We've identified **3 drivers** that might be contributing to negative well-being**: Problematic Use, Loneliness, and Social Comparison
- In H2 2019, we conducted foundational research to unpack **Problematic Use** (PU). This report presents our findings on PU, specifically.

** Well-Being Wiki: https://our.internmc.facebook.com/intern/wiki/Well-Being_Wiki/
Source: "WB 2020 H1 Plan", [redacted]

"

I spend too much time on social networks and Facebook. I could study more, I could read a book, I could exercise. Because I spend too much time on Facebook, I waste my time and I don't do useful things...

– P3, 22 (f) Brazil

Problematic use affects about 12.5% of people on Facebook.

The rate is especially high in some countries like the Philippines (25%) and India (23%). The US falls in the middle of countries surveyed (~10%).

Source: "Facebook's Measurement Strategy for Problematic Use [Well-Being]: Survey & First Results", Anneke Buffone

Why should we care?

Problematic Use

- **People perceive the impact.** In a comparative survey with competitors, people perceived lower well-being and higher problematic use on Facebook compared to any other service. (Twitter, YouTube, IG, WA, Snapchat, Reddit, World of Warcraft) [1]
- **There is increasing industry activity in this space.** Apple and Google continue to invest in this space, generating a steady series of announcements. Pinterest and Instagram also have well-being offerings. *See our Competitive Audit* [2].
- **Tightening of standards and regulations.** The World Health Organization (WHO) is revising its internet disease standards/definitions, potentially considering inclusion of problematic/excessive use. In Aug 2019, US lawmakers announced the first potential legislation banning addictive features on social media apps: *The Social Media Addiction Reduction Technology (SMART) Act* [1].
- **Concerns over deactivation/deletion.** A PU survey found that problematic users were **4x more likely** to consider D&D compared to those without PU (20% vs. 5%). [3]

Sources: (1) "WB 2020 H1 Plan", [redacted] (2) Competitive Audit, Gauri Pendse; (3) "Facebook's Measurement Strategy for Problematic Use [Well-Being]: Survey & First Results", [redacted]

03

Understanding the Current PU Experience

- What are people's **current issues** related to problematic use with FB?
- Who do they consider **responsible** for remedying PU behavior?
- What **steps have people taken**, if any, to assert control over PU?

PII

All participants could relate to problematic use.

- India 1:1 participants were less aware of PU than the US and Brazil, but all were experiencing life impacts.
- Intercept participants who did not have PU knew people who did.

Opportunity: Potential for a broader PR win even if specific solutions are for those with PU.

PII

The time I spend is not healthy, it's like an addiction. *Opening the app every half hour, it's not healthy."*

P4, 24 (f) Brazil

PII

"When you have a beer on the weekend, you drink it. You have to. It's the same thing with Facebook."

P7, 32 (m) Brazil

PII

"I love Facebook. It's done great things, but there is a dark side to it and ***you can get into this rabbit hole and might not get out.*** *I think younger generation is in that hole."*

P2, 45-54 (m) US

If they had PU, they seemed to have it on many social media apps.

Most of those who fit the definition of problematic use were on multiple social media apps: Instagram, Twitter, Snapchat, WhatsApp, and more.

Opportunity: Create holistic solutions across multiple apps to tackle PU.

PII

"I open Facebook, Instagram, Pinterest, WhatsApp, Snapchat, and Twitter every day, several times a day."

P1, 29 (f) Brazil (recruiting screener)

PII

*In my free time I'm on my mobile, WhatsApp, Facebook. Instagram and Snapchat not as much. Mostly WhatsApp and Facebook. I've been using them the longest... **I spend 3-4 hours a day for both WhatsApp and Facebook.** In the night I spend more time on it.*

P3 40 (f) India

CONFIDENTIAL

Those who had loss of control but did not feel guilt saw a difference between time "spent" time "wasted".

- FB was useful for fulfilling social obligations and staying informed: Maintaining relationships, showing care for others and passing time (called "time pass" in India).
- For them, "wasted time" referred to consuming low quality content or activities like reading long posts, memes, videos, etc.
- They did wish they could curb the "wasted" portion and instead spend time with others, sleeping, exercising, being productive, etc.

Opportunity: Help low guilt problematic users notice and reduce their "wasted" time.

PII

I've got some good things on FB so that's the reason why I've devoted so much time on it... This is something that I'm confessing to myself I want to devote time to my loved ones; ***FB is helping me to take care of my social obligations."***

P6, 35 (m), India

PII

"[I spend my time] ***60% useful and 40% useless*** *[things] because you can't control what is there [newsfeed] and so you see everything."*

P3, 22 (f) Brazil

PII

"I will feel I've spent 3 hours - so many hours! ***So, it's a positive... The more time I spend I feel great!*** *So many posts and videos I've seen is great. My work is getting done, my posts are done, I've done everything."*

P5, 22 (f) India

Most saw it as the user's responsibility to control their FB use.

- Many compared FB to other inventions that have driven "addictive" behavior in their day (e.g. television).
- Some actively seeking solutions did think FB should be doing more.
- However, most welcomed Facebook creating tools to help.

Opportunity: Delight people by exceeding expectations.

PII

"It's not Facebook's problem, it's my mindset."

P1, 35-44 (m) US

PII

It's ours only...how will they take responsibility? It's like if the phone is used in day and night, it's not THEIR responsibility. It's on us. no one else can do anything to it."

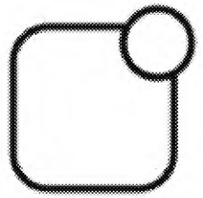
P4, 30 (m) India

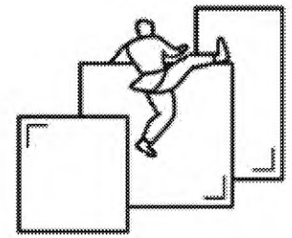
PII

"It's great for FB to be helping with controlling use."

P4, 24 (f), Brazil

Problematic Use Journey Map



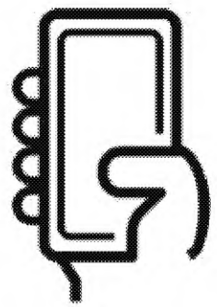


Triggers

- Notifications
- Entertaining content
- Videos (e.g. auto-play)
- Groups
- Fear of missing out (FOMO)
- Mystery of the algorithm
- Marketplace/Ads
- Recent post/comment
- Time-bound content
- Boredom/free time

Attitudes

- Self-control: Do I have to look now? Can I wait?
- Awareness/guilt: How is my FB use affecting myself and others? Do I feel guilty?
- Pressure for timely replies: Do I feel a cultural, personal, or business need to respond?



Problematic Use

Loss of control over time spent on Facebook

Life Impacts

- Loss of productivity
- Sleep disruption
- Relationship impacts
- Parents feel they are neglecting their kids
- Safety risks
- Regretful spending

Remediation Tactics

- Increase awareness (time trackers)
- Set controls (iOS ScreenTime, turn off notifications)
- Add friction (logout, physical distance)
- Reduce posting/ commenting frequency
- Leave FB (deactivate, delete the app)

Facebook App Research

We heard about 10+ triggers contributing to PU habits.

- **Notifications** – Getting too many minor/irrelevant notifications. Try to only look at important ones but get sucked into longer sessions.
- **Entertaining content** - Many said they'd open FB with a clear intent (like checking the news, a specific group, or work-related posts), then get distracted by something entertaining
- **Videos** – Easy to get immersed (especially before bedtime). Auto-play exacerbates the issue.
- **Groups** – Get exponentially more notifications, engaged in chat threads
- **Fear of missing out** (FOMO) – Worry about missing important world news or updates in their social circles.
- **Mystery of the algorithm** – Uncertainty over if they will see posts from those they want; if they can find a post again later.
- **Marketplace / Ads** – Vigilance of buyers/sellers, sales, lower resistance to purchasing at night
- **Recently post/comment** – Higher curiosity to see responses
- **Ephemeral content** (e.g. Stories, birthdays) - Catch it before it's gone
- **Boredom/free time** – Desire to fill downtime or "time pass"

PII

__Red dots are toxic__ on the home screen.

P4, 25-34 (m) US

People liking things can be addictive. __I feel compelled to see who liked it.__ I think it's a bad habit because [I'm] always checking.

P2, 45-54 (m) US

__The algorithm doesn't always know what I want to see.__ I have to do the work to find what I want to see.

P7, 35-44 (f) US

What bothers me the most is getting so entertained; __I lose track of time. Especially with the videos.__ Wow, I spend a lot of time on the videos because __they start automatically__ and when I realize it, I'm already watching.

P1, 29 (f) Brazil

PU was essentially defined as a loss of control over time spent on Facebook.

- **The majority intended to have a quick look**, but would get hooked by something on FB, losing all track of time.
- People who used FB for a **mix of personal and professional** (e.g. "Side Hustle Sam" persona) struggled at keeping focus on the work-related posts and not getting distracted by personal FB content.

PII

I'm on Facebook everyday, every moment. Literally, every moment; *just not when I'm in the shower. It's a habit, I just have been doing this for a few years... I lose the notion of time."*

P3, 22 (f) Brazil

All problematic users were experiencing multiple life impacts.

- **Loss of productivity** - (1) Giving up. The person won't do the task/ activity outside FB. (2) Postponing the beginning. The person will take more time to start the task/ activity off FB. (3) Extending the duration. The person will take more time to complete the task because will stop to check FB.
- **Sleep disruption** – (1) Delaying/reducing sleep hours due to loss of time control; (2) Waking up and checking FB prolonging a return to sleep; and (3) Sleep loss due to disturbing content, like politics or violence.
- **Relationship impacts** - People together but separately on their phones. And a false sense of closeness created by seeing updates on FB, but fewer offline visits.
- **Parents neglecting their kids** – Parents focused more on FB than caring for or bonding with their children. Or refrained from reprimanding kids for risk of later "retaliation" on their own use.
- **Safety risks** – Loss of situational awareness around environmental dangers (moving vehicles, pickpockets).
- **Regretful purchases** – Spending money on things they didn't need.

PII

I was late to my cousin's wedding because I was watching a video. He's my godfather so it was a shame. Why were you late? I was on Facebook; I forgot the time.

P3, 22 (f) Brazil

Sometimes I don't pay the attention I should to my son. I love to play with him, and the phone sometimes distracts me".

P7, 32 (m) Brazil

One day I was stepping out of the train. I should've been in the middle, but I was on the edge only. I was on my phone. A person kind of pushed me inside. I got saved! After that, I just sit and do it.

P4, 30 (m) India

Sometimes I lose sleep. If I have to wake up at 6am and I'm on FB at night, I look at the phone and it's 2am. Sometimes I'm so involved that I go on and it's hard to wake up the next morning.

P5, 20 (f) Brazil

Facebook App Research

Only a few had attempted remediation tactics, and none had found a full solution. Most flailed with fruitless tactics or resorted to extreme measures.

- **Increasing awareness** – More tech savvy users sought out phone level or 3rd party apps to help them be more objective about the time they are spending. Setting alerts and seeing reports of daily or weekly usage. Many were frustrated that this data relied on them to "pull" it and happened after the fact.
- **Setting controls** – Adopting phone level or 3rd party features to control their use. Many mentioned iOS ScreenTime, setting alarms, or turning off notifications.
- **Adding friction** – Creating barriers to use, such as turning off the Internet, logging out of their account or putting their phone in another room, or piling phones together.
- **Reduce posting/ commenting frequency** – A few mentioned they'd stopped posting as much to reduce the draw to look at responses.
- **Leave FB** – Many mentioned they'd taken the extreme measure of deleting the app or deactivating at least once to curb use.

PII

*I turn off notifications. **I don't want them to be poppin' up on me.** If I commented on your picture, then I get a notification from people commenting who aren't even my friends.*

P3, 45-54 (m) US

*Apple tells you how much time you're on **so I'm trying to track** that to minimize it.*

P2, 45-54 (m) US

*I tried to set up a certain time to spend on FB, but **it was impossible.***

P3, 22 (f) Brazil

05

PU Opportunity Areas

- What future opportunities should we pursue to address PU?

Increase Awareness of PU

How might we improve people's awareness of the time they spend and how it's impacting their lives?

Unaware Uditi

Groupie Gustavo

Side Hustler Sam

Challenges to Address

- Mindless scrolling
- Unaware of the time or duration of use, especially if clock is hidden
- Auto-play of Videos, Stories
- Not in touch with their usage patterns over time
- May not see time spent as "wasted time", rather time to connect with others or stay informed.
- Little or no guilt and therefore a low desire for solutions.

Possible Solutions

- **Time Spent Alerts** (e.g. Encouraging Breaks, Daily or Weekly time reminders)
- **Surface usage patterns** – Help people fully understand how their use is unhealthy. Show activity-level data, hour-by-hour graph, goal setting and seeing progress over time, or active/passive use.
- **Pause points** (E.g. You're all caught up) or stopping every few Stories/Videos instead of automatically playing the next one.
- **Large clock**. Simply surfacing the time.
- **Session counters** - Surface number of times they've opened Facebook

Increase Focused Sessions

How might we help people make better use of their time within the platform? How help people find what they are looking for and not get as distracted?

Side Hustler Sam

Groupie Gustavo

Unaware Uditi

Challenges to Address

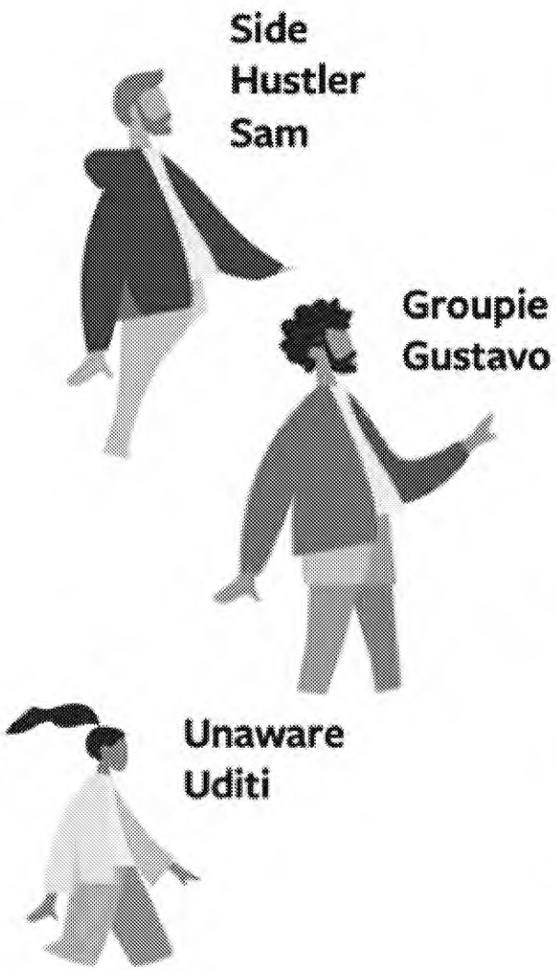
- Open FB to quickly check and get sidetracked by other aspects of FB
- Current notifications page is a long list of combined updates, forcing people to sift through it to find ones of interest
- News feed is a jumble of posts from everything one follows. Many are confused why the NF prioritizing some content and not others.
- Low tech literacy - unfamiliarity with finding/changing Settings.
- No customization options for feed or notifications

Possible Solutions

- **Grouped/Batched Notifications** (e.g. Grouped Notifications) Batch notifications by topic area.
- **Personal vs Professional split.** Upsell Workplace (?) or give people better ways to only see their work-related posts/alerts.
- **Content Bucketing** (e.g. Choose Your Circle) Changing NF into a more tabbed format letting someone just see posts from that "circle" (family, local, world news, interest groups, etc.)

Communicating Availability

Help people convey their availability and keep up their desire to be polite/professional?



Challenges to Address

- Feel the need to be responsive for business purposes
- Desire to be viewed as polite
- Talking with people in other time zones
- Cultural pressure to give likes or respond to comments in a timely way (esp. India)
- Tagging behavior – In many parts of the world, people tag friends, don't message each other directly
- People may not trust or respecting a status if posted (maybe on too long)
- Both short and extended breaks from FB

Possible Solutions

- **Show status** (e.g. Public Status Indicator, OOO setting, @silent, BalanceBot, Beach Mode) – let people externally communicate if they are busy and for what reason.
- **Quiet Mode status.** Show others when someone is in a Quiet Mode.
- **Automated status replies** if status set to busy Most OK with a standard FB-created message, a few wanted to customize it.
- **Show time zone** - Without actively setting a "busy" mode, let others see time of day [consider privacy concerns]

Encourage restfulness around bedtime

Help people convey their availability and keep up their desire to be polite/professional?

Groupie Gustavo

Unaware Uditi

Challenges to Address

- For some, nighttime is their only "me" time to check FB
- Many were in the habit of checking FB before bed.
- Entertaining/engaging content!
- Notifications draw them in
- Upsetting content or interactions making it harder to sleep
- Self-control is lower at night
- LED lights (blue light) in phones and computers interfere with the brain naturally releasing sleep hormones

Possible Solutions

- **Scheduled Quiet Mode** – with preset bedtime downtimes
- **Quiet Mode (QM)**– surface shortcuts to Quiet Mode at certain times or after long sessions.
- **Extending QM to Messenger and Family of Apps** - In testing most expected QM to work on Messenger. Simpler way to set QM across family of apps (FB, IG, WA, Messenger)
- **Content curation** (e.g. Wind-down mode) Limit the types of content people have access to at night, such as no violence, politics, etc.
- **Switch to yellow light option** (note: not Dark Mode) - not tested, but yellow light is known to be better closer to sleep times.

Remove time sensitivity

How can we reduce the sense of time pressure to see or not miss content?

Groupie Gustavo

Unaware Uditi

Challenges to Address

- People, especially those with FOMO, don't want to miss out on seeing content that is time boxed (e.g. Stories)
- Some think content "disappears" as they've tried to re-find something and were unable to again.
- Desire to be the first to see and reshare certain content, like Memories
- Don't want to be the last to hear about news, world events or friend updates.
- Want to stay up to speed on topics of interest (politics, sports, new technology, etc.)

Possible Solutions

- **Scheduled Posts** - Allow people to pre-write and schedule happy birthday posts instead of only same day
- **Reduce time-based components, where possible.** Extend times or allow people to still see missed content if they were in a QM.
- **Eliminate FOMO-inducing triggers**, like saying "See what you've missed"
- **Align content with daytime hours** - e.g. Rethink the standard time Memories are posted to be during daytime hours; or let people choose a time when they get them.
- **Improve Search** to help people find specific posts or comments

TL;DR

In Q4 2019 we conducted 24 in-person 1:1 interviews with 'problematic' Facebook users in the US, Brazil and India to determine which opportunities the team should pursue around excessive/problematic use of Facebook in 2020.

We tested 13 concepts crafted to address various problematic use (PU) sub-areas: sleep, productivity, relationships, parenting, loss of control, guilt.

	Our Findings	Our Recommendations
01	**Over 10 triggers contribute to the potential for problematic use (PU) but only 3 user attitudes associated with PU:** Lack of guilt, low self- control, and high pressure for giving timely replies.	Focus product opportunities around mitigating these user attitudes: increasing self-control and awareness and reducing pressure to respond. Use 3 identified PU personas for follow-up sprint or brainstorm.
02	**We removed 2 PU impact areas and added 2 more. This research uncovered 2 new PU impact areas, Safety Risks and Regretful Spending,** to add to Productivity, Sleep, Relationships, and Parenting. Fear of Missing Out (FOMO) and Loss of Control Over Time Spent (LCOTS) are not impacts. FOMO is one of the 10 triggers. LCOTS *is* PU, not a trigger nor an impact.	Ideate on solutions for Safety and Regretful Spending impacts. Eliminate Loss of Control Over Time Spent and FOMO as sub-topics to focus on for development.
03	**Most selected Productivity as their top PU priority area for FB to pursue. A loss of productivity (delayed work/chores, being late to appointments) affects sleep and relationships.** Sleep and Parenting were the next most voted areas.	Focus on Productivity as the main PU sub-area for future development because fixing it will benefit most other impact areas. Also consider a follow-up study with the updated list of impact areas and re-assess priority.
04	**6 of 13 concepts were highly rated for reducing PU across multiple impact areas. Two concepts (Time-to-Complete, You're All Caught Up) posed a risk of exacerbating PU for those with FOMO.** Highly rated concepts provided situational awareness, sense of control, customization, transparency and a sense of completion.	Recommend pursuing the top 6 concepts and brainstorming around the 6 identified opportunity areas: Increase PU awareness, Increase focused sessions, communicating Availability, encouraging restfulness, supporting healthy commitments, and removing time sensitivity.