AMENDED Exhibit 45

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

H2/H1 2018 Youth Team Review

H2 Summary

GOALS

	A	B	C
1	Focus Area	If we're successful in H2 ...	Results
2	U13		
3	Messenger Kids	We'll successfully launch & get to product market fit with at least one cohort of children under 13.	Messenger Kids was launched successfully on Dec 4th. It's too early to tell if the product has market fit.
4	Teens		
5	Onboarding & Connection	We'll have helped teens successfully onboard to Facebook and connect to their teen friends. Goal: +10% teen WAP@14 in regions where we're strong but at risk, which will result in a teen DAP increase.	We pivoted away from onboarding as a focus to a goal of "find levers for growth". The team was successful in finding 3 levers that increase topline teen metrics.
6	Audience Controls	We'll have identified an approach to audience controls which leads to a step function increase in sharing. Goal: +3x Post Sessions among one or more cohorts.	Our small groups work has shown promising results but we have yet to find a solution that unlocks meaningful teen sharing despite taking several bets in H2.
7	Sharing Formats ie: polls, reshares, memes	We will have successfully proven or disproven that new sharing formats targeted to teens can increase engagement.	Launched visual polls sharing format which showed 2.5x engagement with teens over adults.

HIGHLIGHTS

- Launched Messenger Kids, Facebook's first product in the under 13 category.
- Acquired TBH, an app popular with US teens with a team of four who have deep specialized knowledge building apps in the teen space.
- Discovered our first 3 levers that increase teen engagement on FB Blue.
- Shipped our Age Affinity model to accurately predict teen/non-teen classification of Facebook users globally. Recall improvement 73% → 85% (non-US).
- Finished staffing key youth leadership roles (Analytics, PM, Eng) and grew from 24 to 66 engineers.
- Spun up a new Youth Defense Team which monitors company-wide experiments to defensively flag negative teen impact by tests other teams are running.
- Our Small Groups as Audience Control work was shipped and will provide the foundation for Facebook's overall Small Groups focus area in 2018. Although final test results are forthcoming, early signs are encouraging and indicate that small groups may help unlock additional sharing for teens.

LOWLIGHTS

- Teen MAP in the US and western countries continues to decline as confirmed by our new global age affinity model.
- We failed to grow the team as fast as we'd like which has slowed progress.
- There are still many things that we do not know about teens & youth overall. We will kick off key understand work in H1 to improve this.

LEARNINGS:

The new "Coming of age": Our responsibility to get this right

In H2, our understanding of the youth market, its challenges, and the relationship that youth are experiencing with their devices and apps has grown. Most importantly, it's become clear that, although the initial focus of our team was to solve "the teens problem" at Facebook, there is greater meaning and importance to our work.

The world that children are growing up in is remarkably different than the one we grew up in. What was a common rite of passage for western teens, getting your drivers license at 16, is no longer as desirable for today's teens. The new rite of passage for youth is getting a smartphone and a social media account. For most children in the western world, access to a tablet happens as young as the age of 2, and many teenagers have had a smartphone since the age of 10. Yet most social apps are not built with their specific needs in mind.

Much like how children start with training wheels before riding a bike, the social apps they use should reflect their developmental needs, adapt to them as they grow up and provide them with the tools they need to learn how to use these products responsibly.

We have an opportunity to build products that are uniquely suited to young people as they grow, and help ensure that they mature to be the most empowered, knowledgeable, well-connected and socially conscious generation ever.

The road forward isn't clear. There's no blueprint for how social media should build positive experiences for youth and support healthy developmental needs. Parents are desperate for safer and better solutions and children need products that meet their needs.

Coming of age is an experience of firsts. Not just a first tablet and smartphone but also a first date, a first sleepover and a first job. These are defining moments that shape how we grow up and who we become.

As an adult, Facebook makes many of our life experiences and firsts more meaningful. Sharing photos of a newborn baby with remote family and friends on Facebook creates a shared experience and adds more meaning to these life events.

What if Facebook's family of apps made all of the firsts and special moments that define "coming of age", even more meaningful and helped young people feel more supported when they need it.

That's the coming of age experience that we have the opportunity and responsibility to build and the Youth Team is excited to help make this a reality for our kids and for all young people.

Teens:

- **Community Learnings**

  Across all social time spent with US communities, 74% is spent in affinity groups like family and friends while another 18% is spent in interest groups that are focused on shared interests. High school interest communities often have multiple online groups with a complex overlap of memberships–for example, the soccer club, soccer rookies, soccer team captains, etc (Source). This will inform our Small Groups work.

- **Messenger Learnings**

  We learned that Messenger is a key reason that teens come to the Facebook platform, 43% of US teens signing up for Facebook do so "to message" and teens cite this reason twice as often as adults (Source). This will inform our growth work.

- **FB Lite Learnings**

  Teens are more likely to choose FB Lite than adults (Source). On FB Lite, teens friend more, message more, and have higher retention than FB4A and mTouch (Source). Teens using FB Lite also report higher satisfaction with their experience (Source). This will inform our growth work.

Tweens (Source):

- The majority of US kids with phones use social media by age 9.
- Parents know about and connect to U13 on social media.
- Facebook is likely U13's first social media app (driven by parents).
- U13s use multiple social media apps, but struggle to articulate FB's value.

Kids:

- Children need to be taught digital social etiquette in Messenger Kids (Source).
- Kids struggle with unstructured communication (Source).

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work (16 HC for MSG / 23 HC for IG). Going forward, the Youth Team will focus primarily on FB Blue and on new apps which we will acquire and/or build. This will allow each of our teams to move faster, operate independently and to focus on areas where we can add the most value.

- **H1:** In H1, we will provide full age-estimation modeling for Instagram, similar to those developed for Facebook in 2017 H2. We will do our first analysis of WhatsApp, and decide on what capabilities to develop in 2018 H2. Finally, we will ensure dashboards tracking teen Family growth, as well as engagement on Blue, are made available.

Facebook Blue + New Apps: Define and execute the strategy for Youth

HIGH LEVEL SUMMARY:

Three years from now we want to be the most relevant social products for Youth worldwide. To get there, we are focusing on each youth life stage, "Kid" (6-10), "Tween" (10-13) and "Teen" (13+) and are building social products for them. The needs of youth, and their relationship with parents, are meaningfully different for each of these life stages and we need to think of them differently.

1. For Kids, we are focused on messaging. We launched Messenger Kids in December. It's too early to tell how this is doing, and in H1 we will focus on making sure Messenger Kids is retentive.
2. For Tweens, we need to develop a strategy to get them onto Messenger and Facebook. In H1 we will be doing the understand work needed to have a plan we can execute on in H2. We plan to focus on ramping kids from Messenger Kids to Messenger as they grow up, and finding a plan for letting tweens use Facebook Blue.
3. For Teens, we are focused on two areas:
    a. Fixing Core Facebook use cases that don't work well for teens:
        i. Increase teen sharing (primarily through better audience controls): In H2 we launched several audience bets, none of which were successful in unlocking teen sharing on Facebook. In H1 we'll take more bets in this area.
        ii. Increase teen engagement with the Facebook feed: We launched a visual polls product and learned that teens vote 2.5x more than adults on these types of formats. In H1 we'll shift our work towards new tactics to increase teen engagement with the feed to drive more meaningful social interactions.
        iii. Ensure that the core Facebook platform meets the needs of teens:
            1. We built a new "Teen Defense" team to monitor and alarm on company wide tests that have teen impact.

2. We spun up a new "Youth Empathy" team to discover negative experiences teens have on our platform. In H1 we'll build tools to address those experiences.
3. Teens 16 and under in Europe will no longer be legally allowed to login to Facebook in 2018 due to new GDPR regulations. We will work with the Facebook GDPR team on a solution for this.

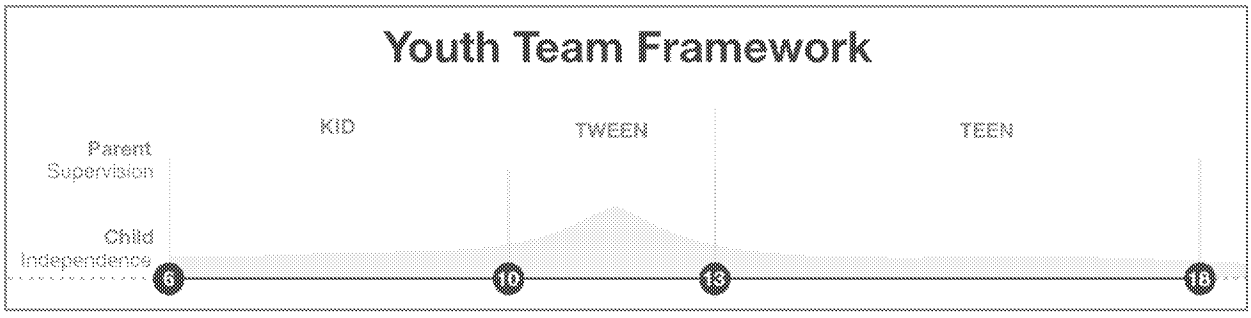
b. Amplify Facebook use cases that currently work for teens: In H2 we found three growth levers that will lead to growing teen engagement. In H1, we'll deploy these levers and we'll run more boundary tests to find new levers. We'll also optimize Facebook's core components like NUX, PYMK and ranking models for teens. We're excited about the potential in this area and expect to see positive teen impact in H1 from these tactics.

We'll also continue to iterate on TBH, an app we acquired in H2, with a goal of making it retentive with teens and will keep a watchful eye on the market for other potential acquisitions to accelerate our strategy.

Youth Team 3 Year Goal: Provide youth in every market with the most relevant products for meaningful social interactions in a responsible way.

YOUTH FRAMEWORK:

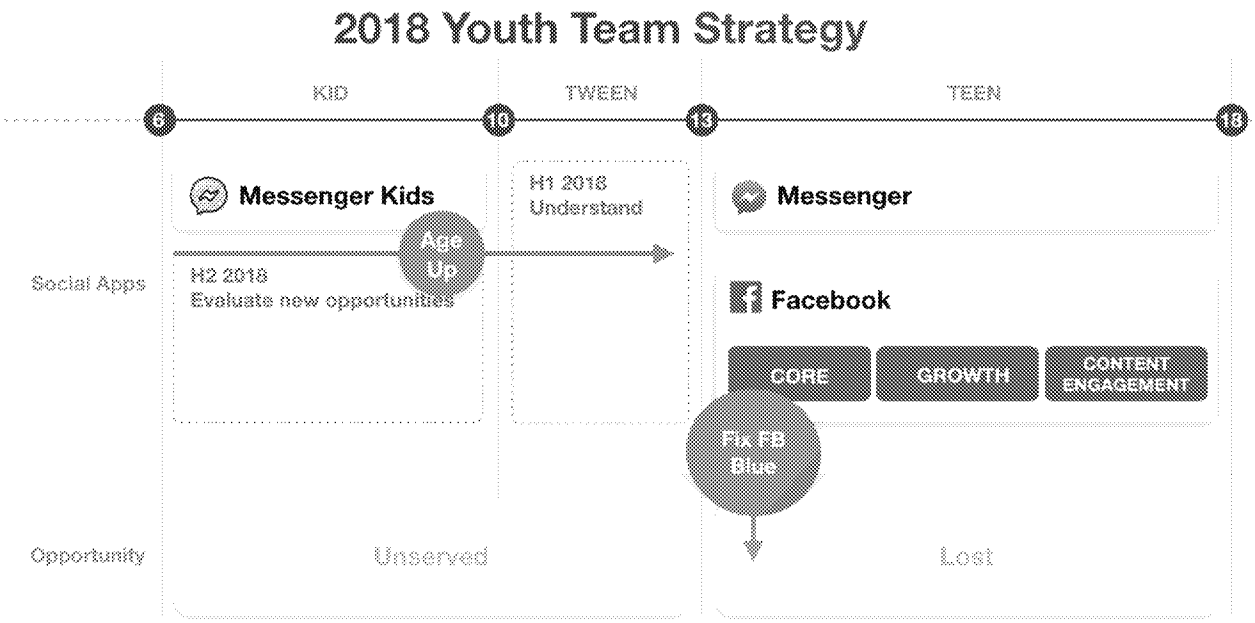
- To win with Youth, we will build social products which uniquely satisfy the needs of Youth at each of the "Kid", "Tween" and "Teen" lifestages. These products will adapt to the changing needs of youth or will facilitate transitions to a better suited app as they age up. In H2 we evolved our thinking by better understanding the dynamics of building social products for youth.



- Our new Youth framework highlights that building products for young people has 3 discrete stages. Each age group presents a different set of product needs, and as children grow up, these needs change. Building a "one-size fits all" product is not possible when building for youth. It's also important to consider the parent / child dynamic at each lifestage in our product decisions. The need for parental control & supervision (strong in the early years) and child independence (strong need for independence in the teen years) change over time and strongly influences how a product will succeed with a spe-

cific age group. This dynamic is very important when considering how to build products for young people. This framework will help to guide our thinking as we make progress towards our 3 year goal.

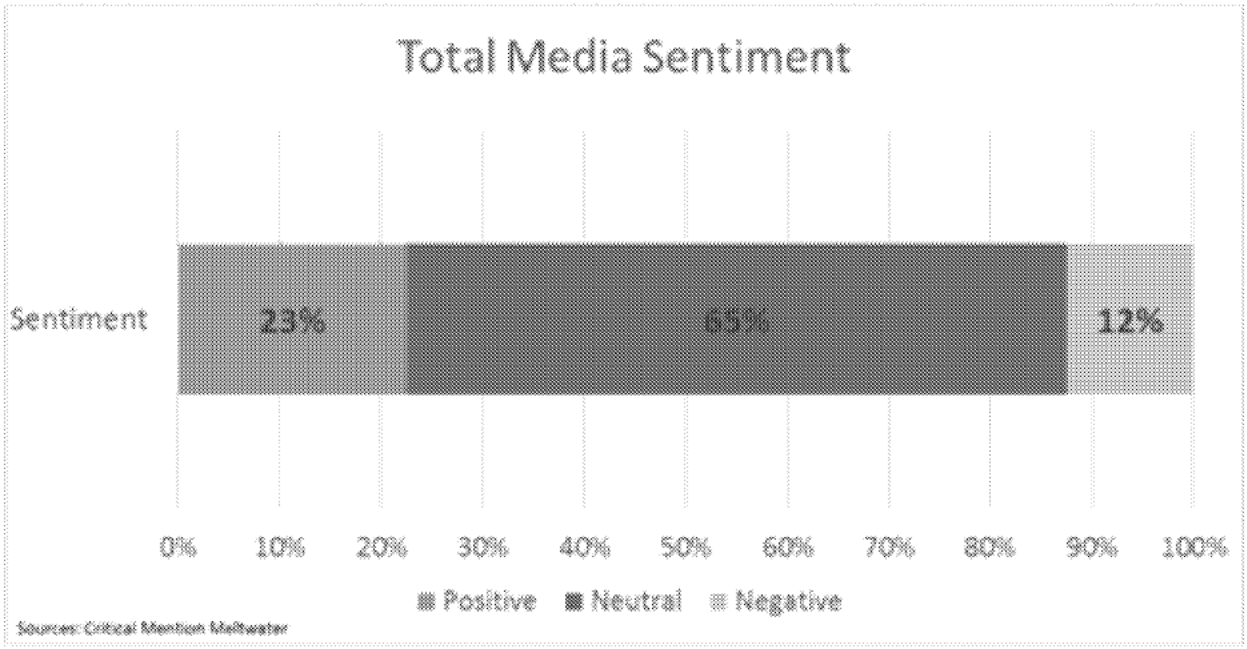
2018 YOUTH STRATEGY:



Under 13

- **Strategy:** For parents of children under 13, safety is the #1 concern when providing their kids with a social messaging product. In 2018 we will continue to focus on our first bet in this space, Messenger Kids, which meets parents needs for safety and is fun for kids. Winning with U13 will require different solutions for the 6-10 and 10-13 age groups. Messenger Kids will be targeted primarily to 6-10. To be successful with tweens and to age young people up through our products, we will need to build solutions that specifically address the 10-13 segment.

- **H2:** On December 4th we successfully launched Messenger Kids to the US. Considering the sensitive nature of the launch, successfully landing the narrative of Facebook entering the U13 space with the public and press was a key objective. The launch was well executed and the narrative surrounding the app was controlled and landed well with the majority of press coverage being positive / neutral (6,555 press mentions, 88% positive/neutral, 12% negative,). This was important, landing our U13 narrative well with the press/public will give us space to continue to iterate and build new products for this segment. It's too early to tell how retentive Messenger Kids is with parents and children.



- **H1:** We will dedicate the majority of our U13 resources towards iterating on Messenger Kids with the primary goal of achieving stable retention. Once retention goals are

achieved we will focus on growth. We will also continue our understand work to identify a tween product strategy which we can execute in H2 2018. Our tweens product strategy will enable children who are active on Messenger Kids to age-up into our apps for teens (ie: Messenger). We will also identify a tweens strategy for FB Blue.

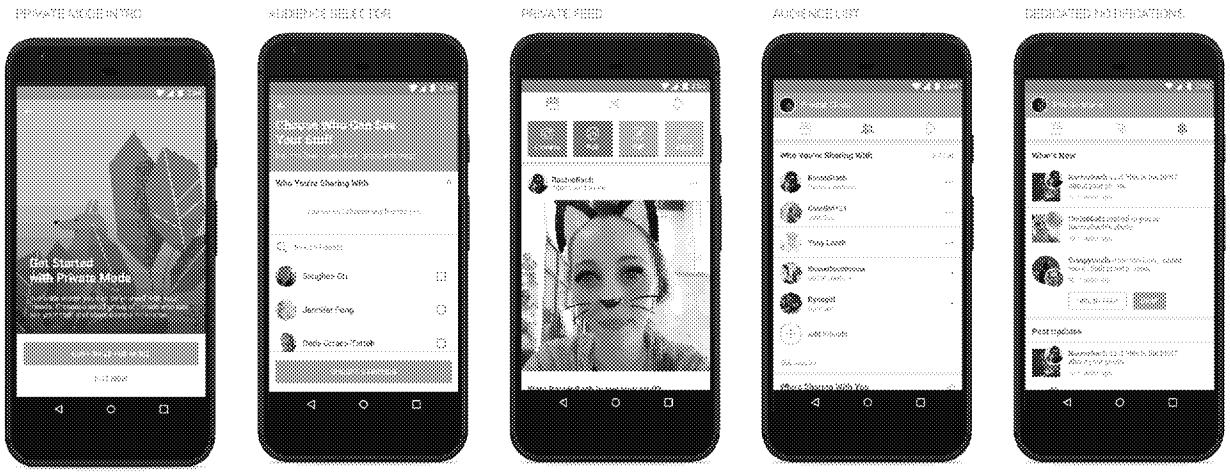
Teens

- **3 Year Vision for Teens:** Facebook is the social hub for teens, housing meaningful interactions with close friends, family, communities and interests.
  - Here are the beliefs, based on what we've learned, that will guide our work towards building what we think the best version of Facebook could be for teens:
    - Teens want a simplified, light-weight, fresher version of Facebook. (FB Lite, Simplified UI)
    - Teens want a safe place where they can express themselves without their parent's involvement. (Private mode, Small Groups)
    - Teens want separate spaces to interact with close friends, family and real world communities (HS School, interests, etc).
    - High school (and the related groups, clubs, hobbies, and classes) is one of the key ways we'll engage with teens (HS Communities, HS Graph, HS Recommendations).
    - Messaging is a driving component of teen social interactions and will be core to how we win with teens (Messaging First Tests).
    - Friend & public content can be powerful drivers of meaningful social interactions (“Teen Feed” Tests).
    - Teens have evolving identities and need a product that allows them to curate how they present themselves to the world (Profile).
    - Teens love novelty and are highly open to trying new forms of content, interaction, and experiences (“TBH” Social Compliments, AR).
    - Teens want control and certainty over which audiences they are sharing to (Share Sheet).
  - Our work in 2018 will build on these beliefs to help validate our path forward towards winning with teens.

PRODUCT CONCEPTS:

- **Strategy:** Our teen strategy can be broken down into 2 approaches: 1) Fixing Core Facebook use cases that don't work well for teens and 2) amplifying social use cases latent within Facebook which currently work well for teens but are not optimized and are difficult to discover (ie: high school groups, meme groups). Our goal with this strategy will be to avoid losing ground where we're at-risk with teens while we learn how to win in all markets.
- **Fix Facebook for Teens**
  - **Sharing:** Teens need a space to share with their friends that is safe and lets them express themselves without judgement from parents and authority figures. Currently, many of these teens don't feel comfortable sharing & interacting on Facebook primarily due to the large number and types of friends they've accumulated. Our strategy here is to find product solutions which make it easier, and safer, for teens to share with smaller groups of friends, and to create new teen specific prompts, formats and mechanics to enable them to share in new ways with their friends.
  - **H2:** We spun up several bets to give teens better audience controls. Although we have yet to find a solution which unlocks sharing for teens, our Small Groups work is showing encouraging results. In H2 we shipped our completed Small Groups MVP which addressed retention issues of the earlier version. Other audience bets in H2:
    - Private Mode: Conceptualized, designed and began development on a new teen specific surface, Private Mode, to create a safe and private space for teens to interact with their close friends.
    - Graph reset: Built and tested an MVP for a graph reset tool which enables teens to create and share to lists of friends. We found that Graph Reset had no significant impact on teen posting behavior. Only 4% of teens who were exposed to our tool opened it suggesting that privacy controls alone may not be enough for teens to feel comfortable sharing more. We will fold learnings from graph reset into broader/more ambitious audience initiatives.

- **H1:** We remain confident that better audience controls will lead to additional teen sharing. In H1 we will continue our work to find an audience solution for teens which leads to an increase in sharing on Facebook. We believe that controlling audience is a key barrier to teens feeling comfortable sharing.
  - Private Mode: We will test our new "Private Mode" audience bet in February which will give teens a private space for sharing on Facebook.



  - Small Groups: Now that our Small Groups MVP work is completed, in Q1 we will transition the infrastructure we've built to the Groups team. We will continue to build on top of this small groups platform by exploring new sharing formats that are built specifically for teens within groups and new specialized small group verticals (e.g. "close friends", "study groups") to provide more utility and opportunity for teens to share. We will also continue to work with the Stories team to ensure that the Stories sharing format is fully incorporated within small groups.
  - Other bets: We will continue to test new audience control ideas (ie: Simple SUMA for audience control, a more aggressive graph reset) and will look for opportunities to be even more aggressive with our bets.

- **Teen Feed Engagement:** Teens have a need to engage with their friends, communities and interests. We will help teens do this by improving the feed experience for them. We will ensure that we are providing a meaningful experience (and not passive consumption of content) by focusing on driving more meaningful social interactions for teens.
- **H2:** Our primary project related to making the feed more engaging was the launch of Visual Polls, a lightweight poll format designed to be fun to interact with and easy to create. We shipped Visual Polls and learned that Teens are significantly more likely to interact with polls than adults (2.5x votes per VPV, 1.5x comments, and 2.5x likes) and youth (13-22) are significantly more likely to produce than

adults (61% higher production participation rate and 60% more post sessions).

- **H1:** Our plans in H1 are to increase MSI by focusing on improving the feed experience for teens. Our H1 roadmap is currently being discussed as we lock in the definition for Teen MSI. We expect to solidify our product roadmap in Jan/Feb.

- **Teen Defense:** Our new teen defense team monitors, alarms and, where appropriate, blocks and escalates any changes to Facebook systems and features, by any team within the company, that result in a negative change in top-line teen metrics.
- **H2:** We formalized our Youth Defense Task Force, tools and dashboards. This team focuses on building pipelines and systems to detect and respond to experiments and rollouts across Facebook that negatively affect teen metrics (teen MAP, DAP, TS and PS). The team also identifies experiments run by teams that disproportionately *positively* impact teens to help us identify new levers for teen growth (i.e. Save targeted tab experiment by the interfaces team drove Teen DAP by +1.7%).
- **H1:** We will work to improve our pipelines, tools, and dashboards to accurately monitor company-wide experiments for teen impact, both for new growth-lever discovery, and to prevent product changes from negatively impacting the teen experience on Facebook.

- **GDPR:** In 2018 new regulation will come into effect which will cause teens below 16 to no longer be legally allowed to use social media in some European countries without parental consent.
- **H2:** Completed work to understand and identify the potential impact of the new European GDPR regulation on Facebook. Taking no action would result in a loss of ~7.5M FB teen MAP and all future teens under 16.
- **H1:** We will work with the Facebook team coordinating Facebook's global GDPR updates to implement a solution to address this new regulation in Europe to avoid losing teens active on Facebook. A solution here will serve as a test-bed for us to learn from, which could help us find an optimal future FB tweens solution (ie: COPPA compliant FB).

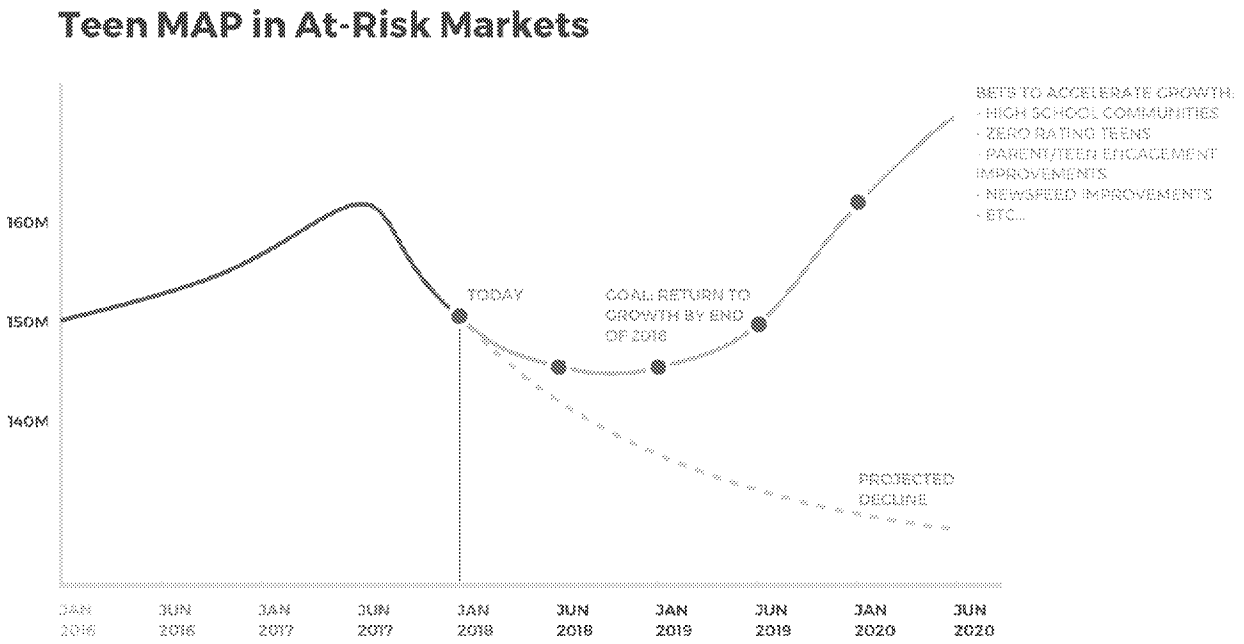
- **Youth Empathy:** Identify experiences on FB which negatively impact teens (ie: friends liking and surfacing old, embarrassing, or no longer relevant, photos back to the top of the feed) and build product experiences that promote more positive teen interactions and build strong connections with their friends and family.
- **H2:** Identified the need for a Youth Empathy team and began staffing it to understand how Facebook can be a better environment for teens. The team is primarily focused on removing negative experiences for teens on Facebook and better understanding the positive experiences that help them build more meaningful connections.

- **H1:** In Q1 we will focus on understanding the scope of what can be done to improve the Facebook platform for teens. Specifically we will; identify what are teen negative experiences; develop a taxonomy for these experiences; understand what tools we could build to help teens and how prevalent these experiences are. We will begin implementing solutions later in the half. Over the long term, this work will inform a broader strategy to promote teen Well Being on Facebook and to make sure we are creating a healthy, positive environment for teens with our products.

- **Amplify Facebook Use Cases Which Currently Work for Teens:**
  - Teen Use Cases: Although many teens no longer feel comfortable sharing to their friends on Facebook, there are use cases on Facebook which teens do enjoy such as high school group communications and meme / public content. Part of our strategy will be to aggressively experiment and discover use cases which currently work well for teens and to optimize and amplify them. There are likely many use cases which we haven't discovered yet. We will systematically run tests to discover more use-cases and will optimize the teen FB experience around them.
  - Core Facebook Components: Many of Facebook's core components (friending, NUX, feed-ranking etc.) have historically been optimized for global engagement, and will require changes to work for teens specifically. We will experiment and optimize these core Facebook components for teens.
  - **H2:** We focused on identifying casual levers that drive top-line teen impact (MAP, DAP, PS) and identified 3 new levers that can impact teen growth. The first lever we discovered was that driving school-profile completion drives meaningful group joins, and thereby, teen engagement on Facebook. The second lever we found was meme & entertaining content related. By running a series of feed experiments to undo meme demotions for teens, we've seen increases to both teen DAP and MAP. For our third lever, we found that boosting teen producer content in newsfeed leads to an increase to teen MAP, DAP and PS. We have a series of other boundary tests that are in flight which are promising (provide a messenger-first experience for teens on FB-Lite, reducing/segmenting parent-teen interactions, and increasing presence “green-dot” indicators for users).
  - **H1:** We will focus on exploiting levers we've discovered to increase teen MAP in at-risk markets with the goal of stopping the teen MAP decline and resuming growth by the end of 2018. We are planning on doing this by working across core Facebook components (New-User Experience, Profile, Friending, Feed, Interfaces etc.) and through vertical use-cases (School Communities, Family Community, Memes/ Entertaining Content). We will also be running our first battery of compound tests in early H1 as well (where we combine all the levers we have found so far into one country-wide saturation test). It's worth noting that our approach may result in different user experiences for teens vs adults. In H1 we will understand and define what a possible graduating experience will look like to support teens aging up on Facebook.
  - One specific area we will focus a significant amount of effort on is school communities. We will work on the infrastructure to support school-related work (school

graph completion). On top of this infrastructure we will build better recommendation systems (school groups you should join, school PYMK unit etc.) and product experiences (dedicated tab/bookmark + composer experience). Over an 18 month period we expect to drive an estimated +5% teen DAP (+2.5% teen MAP) from our high school work.

- We will also continue to experiment to discover new growth levers and will also explore big bets which could move the needle for teens like zero-rating Facebook for teens (our internet.org holdout shows +7% to teen DAP lift).



- **New Teen Apps:**
  - Separate non-Facebook branded apps can be helpful in several ways to our teens strategy. A new brand could help us avoid the Facebook brand-tax we see with teens in some markets and starting with a clean canvas can enable us to innovate without the constraints of Facebook's core app. Teens like trying new apps and don't shy away from testing new things. Despite this, it's our belief that we can still win with teens on our core FB Blue app and for 2018, aside from opportunistic acquisitions, and our work on our newly acquired TBH app, we will explicitly focus the bulk of our teen efforts towards engaging with teens on FB Blue.
  - **H2:** We acquired TBH, a fast growing teen app which enables teens to share anonymous positive feedback with schoolmates. The app achieved impressive traction with US high schools since its launch in August (growing to 5.5M US teens in its first 12 weeks) but has yet to achieve stable retention. The value of the deal can be broken out into several components:
    - TBH App: The app has shown early engagement with teens, it's our hope that the app can be retentive long term and grown meaningfully globally.
    - TBH Team: The TBH team has deep expertise building apps for teens. We will