

Operator

Good afternoon. My name is Mike, and I will be your conference operator today. At this time, I would like to welcome everyone to the Facebook second quarter 2017 earnings call. All lines have been placed on mute to prevent any background noise. After the speakers' remarks, there will be a question-and-answer session. This call will be recorded. Thank you very much.

Ms. Deborah Crawford, Facebook's Vice President of Investor Relations, you may begin.

Deborah Crawford - Facebook, Inc.

Thank you. Good afternoon and welcome to Facebook's second quarter 2017 earnings conference call. Joining me today to discuss our results are: Mark Zuckerberg, CEO; Sheryl Sandberg, COO; and Dave Wehner, CFO.

Before we get started, I would like to take this opportunity to remind you that our remarks today will include forward-looking statements. Actual results may differ materially from those contemplated by these forward-looking statements. Factors that could cause these results to differ materially are set forth in today's press release and in our quarterly report on Form 10-Q filed with the SEC. Any forward-looking statements that we make on this call are based on assumptions as of today, and we undertake no obligation to update these statements as a result of new information or future events.

During this call, we may present both GAAP and non-GAAP financial measures. A reconciliation of GAAP to non-GAAP measures is included in today's earnings press release. The press release and an accompanying investor presentation are available on our website at investor.fb.com.

And now I'd like to turn the call over to Mark.

Mark Elliot Zuckerberg - Facebook, Inc.

Thanks, Deborah, and thanks, everyone, for joining today.

This quarter we reached an important milestone for our community. 2 billion people now use Facebook every month, and more than 1.3 billion people use it daily. We also saw good results on the business, with total revenue growing by 45% year over year to \$9.3 billion, and advertising revenue up 47% to \$9.2 billion.

We're proud of the progress we're making, and it also comes with a responsibility to make sure that we have the most positive impact on the world that we can. That's why last month we updated Facebook's mission. For the past decade, we focused on making the world more open and connected. We have a lot more to do here to give people a voice and help everyone stay connected with their family and friends, but now I believe we have a responsibility to do even more. Our new mission is to bring the world closer together.

A big part of this mission is building communities. Communities give us the sense that we're part of something bigger than ourselves, that we're not alone, and that we have something better ahead to work towards. Last month, we had our first-ever Facebook Community Summit to talk about our product roadmap, focused on building what we call meaningful communities. Meaningful communities on Facebook are groups that quickly become an important part of your social network experience and your real world support structure. And right now, over 100 million people are members of these groups, from new parents to people suffering from rare diseases. These groups often span online and offline and bring people together physically as well as over the Internet.

Our goal is to help more than 1 billion people join meaningful communities. And part of this involves helping people discover the right groups, which is why we're building technology like AI to better understand people's interests and suggest groups that might be meaningful to them. And in the six months after we started working on this, we've already helped more than 50% more people join meaningful communities than had before them, so we have a lot more to do here.

We also want to make it easier for people to build and lead communities. Last month, we launched new tools for group admins, making it easier for them to get Insights into who their members are, filter member requests, and remove bad actors and their content quickly to keep a positive and safe environment.

Next, I want to give a quick update on what we're building over our three time horizons: making our existing services more useful now; building new ecosystems over the next five years around our products that a lot of people already use; and creating foundational technologies to achieve our mission over the next ten years.

So we're pleased with the growth that we're seeing with Stories. Instagram Stories now has more than 250 million people using it daily, and WhatsApp Stories also now has more than 250 million people using it daily. We're always working to improve and give people more ways to share. And this

quarter we added the ability to reply to Stories with a photo or video and share a replay of live video on Instagram.

I am excited about how AI will improve people's experiences across our products. We're finding AI is both delivering consistent improvements to many of our systems, like News Feed, search, ads, security, and spam filtering and more. But more than just improving these existing experiences, I expect AI to change the way that we do business in some important ways. So for example, today to keep our community safe, we rely on people flagging content that might violate our community standards for us to review. In the future, AI will be able to help flag more of this content faster before people have even seen it.

Now we've started using AI to fight terrorism and keep propaganda and extremist accounts off Facebook. We've even started experimenting with using AI to understand texts that might be used to promote terrorism.

When it comes to News Feed, we currently mostly show you content from people and pages you're connected to. And we can write this better with algorithm improvements, but the really big improvement from AI will be when we can understand all the other content that's out there so we can help you discover much more of what matters to you beyond just what your friends are up to.

On the business side, we're seeing a large shift in the way that marketing works. In the first wave of marketing, people would buy ads and media they thought their customers might watch like a TV show that had similar demographics, but they wouldn't know who saw their ads. The Internet gave people the power to target their messages to people who actually might be interested and to measure results much more precisely, and that was a big improvement. And now AI is taking this a step further. Now you can put a creative message out there, and AI can help you figure out who will be most interested. A lot of the time you don't even need to target now because AI can do it more precisely and better than we can manually. This makes the ads that you see more relevant for you and more efficient for businesses. Those are just a few of the reasons why I'm optimistic about how AI is going to improve our core services over the next few years.

Over the next five years, we're going to build ecosystems around products that a lot of people are already using. We've talked about how video will continue to be a big focus and area of investment for us. It's growing quickly, and we're introducing new features to make the video experience even better. For example, in May we made the option to go live with someone else available to all profiles and pages on iOS. And we also launched closed caption to make Live more accessible.

We're also working to build a business ecosystem around Messenger and WhatsApp. Messenger and WhatsApp both have large communities, and they're growing quickly, with 1 billion people now using WhatsApp daily. It is still early on the monetization side here, although we have started showing ads to a small number of people on Messenger. I want to see us move a little faster here, but I'm confident that we're going to get this right over the long term.

Now finally, over the next 10 years, we're working on foundational technologies that are necessary to achieve our mission. In VR, we launched Live from Spaces, so you can go live with friends in different places. And we think that this has the potential to be a powerful tool to bring people together and help build community in some new ways.

We're also working to help everyone in the world access the opportunities that come with the Internet. In May, we successfully flew Aquila, the solar powered plane that we're building to beam Internet to parts of the world that currently don't have access, and that was the second successful flight. These initiatives and other projects require a lot of ongoing aggressive investment in the infrastructure to serve our communities. Last quarter, our Fort Worth data center went live and is now serving traffic using 100% renewable energy, and we're also expanding our data centers in Los Lunas, New Mexico and Altoona, Iowa.

This first half of 2017 has been an important period for Facebook. We've achieved some major milestones, delivered good business results, and set clear goals around building strong communities and bringing people and the world closer together, but we have a long way to go. So thanks to our community, our teams, and our partners for all being a part of this mission. I'm looking forward to making more progress together.

And now here's Sheryl.

Sheryl Kara Sandberg - Facebook, Inc.

Thanks, Mark, and hi, everyone.

We had a strong second quarter and a great first half of the year. Our business continues to deliver terrific results. Q2 ad revenue grew 47% year over year. Mobile ad revenue grew 53% year over year to \$8 billion and is now 87% of total ad revenue. Our growth continues to be broad-based across regions, marketer segments, and verticals.

Our goal is to build meaningful connections between people and businesses by focusing on our three key priorities: helping businesses leverage the

power of mobile; developing innovative ad products; and making our ads more relevant and effective.

Our first priority is helping businesses leverage the power of mobile. People are rapidly increasing the time they spend on mobile, and businesses know they need to be where consumers are. Given the size and engagement of our audiences, Facebook and Instagram are the best platforms to reach people and drive business results. We have over 70 million businesses on Facebook, and I'm excited to announce today that we now have more than 15 million business profiles on Instagram.

Video is an important part of our mobile strategy. More video is being shared and watched on Facebook than ever before, and it's increasingly helping people and businesses connect. That's because video on Facebook is personal, so it's around connections, conversations, and communities. This is why it creates opportunities for businesses to reach people in new and creative ways. People consume content faster on their phones, and marketers are increasingly recognizing that this behavior is different from other media. This means that developing short-form snackable content is a big opportunity on mobile. We're working hard to help marketers adopt mobile-first video ad strategies for Facebook and Instagram.

In a mobile environment, native mobile video ads typically outperform more traditional ads. For example, when Tropicana launched its probiotic juice, the company tested 6-second video ads against 15 and 30-second ads. The shorter ads resulted in higher brand metrics across the board, including a 16-point lift in brand awareness compared to a 6-point lift for the longer ads.

Our second priority is developing innovative ad products. We're listening closely to feedback from marketers around the world to develop new ad formats and innovate on existing ones. Last quarter, I talked about how our Dynamic Ads help retailers and e-commerce companies promote their products across devices. Dynamic Ads show people the products that are most relevant to them based on actions they've taken, such as viewing items on a company's website.

This quarter, we continued to improve Dynamic Ads and extended them to new verticals and categories. Delta Airlines used our new flight format to reach people who had searched for a flight but not yet booked one. Delta was able to run personalized ads based on the routes people viewed on their site and then bring people back to their booking page. This resulted in a 12.7 times return on ad spend.

This quarter we also rolled out ads in Instagram Stories for all types of marketer objectives. As Mark described, Instagram Stories are growing incredibly well and are, therefore, a big opportunity for marketers. From driving brand awareness to increasing sales, businesses can now use full-screen Instagram Stories ads for any goal. For example, Ben & Jerry's created a brand awareness campaign using vertical video in Instagram Stories and saw a 14 point lift in ad recall and a 2 point lift in purchase intent for its new Pint Slices ice cream.

Our third priority is making our ads more relevant and effective. This means better targeting and better measurement across Facebook, Instagram, and Audience Network. Marketers of all sizes are increasingly following our best practices, like optimizing their ads to drive real-world outcomes rather than focusing on proxy metrics such as page likes and video views. 53% of our revenue from SMBs is from campaigns that use these tools and strategies, up from 23% in the beginning of last year.

This quarter, we also added new ways for marketers to improve their targeting and spend more efficiently. For example, we introduced value optimization, which helps businesses show ads to people who are most likely to spend based on previous purchase behavior. We also introduced value-based Lookalike Audiences, which use machine learning to help marketers reach people who are similar to their most valuable current customers.

For example, California-based accessory company, Nomad, built a custom audience of people in the U.S. who bought something on their site, and then created a multi-country Lookalike Audience of people with similar characteristics. They targeted ads to their international audience across Facebook, Instagram, and Audience Network, resulting in a 2.7 times return on ad spend.

We know that many marketers want to verify and compare results across platforms, and that's why we're focused on giving our clients more options for third-party measurement and verification. We now have 24 partners in our measurement system, including three partners measuring viewability, and we're in the process of adding two more viewability partners, DoubleVerify and Meetrics.

As the first half of 2017 comes to a close, we feel good about the progress we're making. As marketers build more meaningful connections with people on mobile, we help them grow their businesses, which in turn grows ours. I continue to be grateful to our clients and partners all around the world and to our global team to make all of this possible.

Thanks, and now here's Dave.

David M. Wehner - Facebook, Inc.

Thanks, Sheryl, and good afternoon, everyone. Echoing Mark and Sheryl's comments, Q2 was another strong quarter for Facebook. We continue to see strong growth and engagement in our global community as well as momentum in our mobile ads business. Let's begin with our community metrics.

In June, 1.32 billion people visited Facebook on an average day, up 17% compared to last year. This number represents 66% of the 2.01 billion people that visited Facebook during the month of June, which was up 294 million or 17% compared to last year.

Our community growth was again driven by product improvements on Android, our Internet.org effort, and ongoing third-party promotional data plans in markets like India. We will begin lapping the impact of these promotions in Q3 of this year.

We're also pleased to see strong adoption and community growth across video, Instagram Stories, Messenger, and WhatsApp. While these products do not monetize at the same level as News Feed, they are providing new ways to build global communities.

Turning now to the financials, all of our comparisons are on a year-over-year basis unless otherwise noted. Q2 total revenue was \$9.3 billion, up 45%. Had foreign exchange rates remained constant with last year, total revenue would have been approximately \$140 million greater, or up 47%. Q2 total ad revenue was \$9.2 billion, up 47% or 49% on a constant currency basis. Ad revenue growth was strong globally. Rest of World and Asia-Pacific grew at 56% and 54% respectively, while the U.S. and Canada and Europe grew at 45% and 43% respectively.

Mobile ad revenue was \$8 billion, up 53%, and represented approximately 87% of ad revenue. Desktop ad revenue grew 17% despite an ongoing decline in desktop usage. Note that our Q2 desktop ad revenue benefited from our efforts to limit the impact of ad blocking technologies.

In Q2, the average price per ad increased 24%, and the number of ad impressions increased 19%, primarily driven by mobile feed ads on Facebook and Instagram. Payments and other fees revenue was \$157 million, down 20%. Total expenses were \$4.9 billion, up 33%.

We ended Q2 with over 20,000 employees, up 43% compared to last year. Our hiring growth rate increased for the third consecutive quarter, as we continued to invest in the many opportunities ahead.

Q2 operating income was \$4.4 billion, representing a 47% operating margin. Our tax rate was 13%. In the quarter, excess tax benefits recognized from share-based compensation decreased our effective tax rate by 6 percentage points.

Net income was \$3.9 billion or \$1.32 per share. Q2 capital expenditures were \$1.4 billion, driven by investments in servers, data centers, office facilities, and network infrastructure. We generated over \$3.9 billion in free cash flow and ended the quarter with over \$35 billion in cash and investments.

Turning now to the outlook, growth engagement and advertising demand remain healthy, but there are certain factors that will impact revenue growth that are worth mentioning. As we have discussed before, we continue to expect that Facebook ad load will play a less significant factor driving advertising revenue growth going forward, and that desktop ad revenue growth rates will slow in the second half of 2017 when we begin to lap efforts to limit the impact of ad blockers.

In addition, we expect that our strategic focus on driving engagement with mobile video may slow advertising impression growth, given the relatively fewer ad impressions in video relative to News Feed. I would also note that we do not see our early efforts in Messenger monetization offsetting the factors that I just mentioned.

For these reasons, we continue to expect that our ad revenue growth rates will come down as the year progresses. We continue to expect full-year 2017 payments and other fees revenue to decline compared to full-year 2016.

Turning now to the expense outlook, based on our updated view of the remainder of the year, we are tightening our initial expense guidance range. We expect that full year 2017 total GAAP expense growth will be approximately 40% to 45%, narrowed from our previous range of 40% to 50%. I would note that we expect to accelerate our head count growth rate in the second half of the year, as we remain solidly in investment mode. We also expect that our video content investments will contribute to operating expense growth in the second half of 2017.

In terms of capital expenditures, we expect that full year 2017 CapEx will be in the lower end of the prior range of \$7 billion to \$7.5 billion. We are ramping our infrastructure investments to support global growth and anticipate more data center building activity in the second half of this year. For example, we recently broke ground on new buildings at our New Mexico and Iowa data centers.

Turning now to tax, as I have previously noted, our tax rate will vary based on our stock price. At the current stock price, we would expect that our Q3 and full-year 2017 tax rates will both be similar to our Q2 rate.

In summary, the first half of 2017 was a strong period for Facebook, both financially and in terms of growth and engagement of our community. We will continue to invest aggressively in the many opportunities we see ahead, as we make progress on our mission to give people the power to build community and bring the world closer together.

With that, Mike, let's open up the call for questions.

Question-and-Answer Session

Operator

Your first question comes from the line of Brian Nowak from Morgan Stanley.

Brian Nowak - Morgan Stanley & Co. LLC

Thanks for taking my question. I have one for Mark. Mark, the offerings on the core Facebook app have improved and changed a lot over the years from Groups, Live Video Search, et cetera. I'm curious to hear how you've noticed consumer behavior on the core product, the core Facebook app change as Instagram has grown. And how do you think about that evolving over the next three to five years? Thanks.

Mark Elliot Zuckerberg - Facebook, Inc.

So the main value proposition for the Facebook app is helping people share any type of content that they want with any audience that matters to them. So you can go from text to photo to video, from small groups to larger groups, from your friends to everyone in the world. And that's always been where the Facebook app has excelled. There have been different experiences that are more focused on specific things. But with a strong technological foundation supporting all of these different use cases, the Facebook app has always supported people using all of them.

Now the biggest trend that we see in consumer behavior is definitely video. And there's a strong technological underpinning for that, which is that if you go back five years and you tried to watch a video on your phone, it would probably have to buffer for a minute or so before you'd actually get to watch it, which wasn't a good experience. And if you wanted to upload a video, whether it was a longer video like what you'd post to News Feed or a 10-second story like what you'd post in any of the apps, even that might take 30 seconds to upload, so it wasn't a good experience.

So now as the technology on the network level improves to support that, what we're seeing is the ability to serve what is a large amount of demand for what's a very engaging type of content. And that demand flows across social content like we're seeing in Stories and Feed to clearly a huge amount of public content. Pages are engaging in this, and some of the trends that Dave just talked about for just a lot of video behavior across the platform.

Operator

Your next question comes from the line of Ralph Schackart from William Blair.

Ralph Edward Schackart - William Blair & Co. LLC

Good afternoon. Mark, in the prepared remarks you talked about Messenger and WhatsApp being on the early innings of monetization, and then you also talked about your desire to move faster on Messenger. Just curious what are the factors driving your willingness to move faster. And then how should we think about that both from a consumer and monetization experience? Thank you.

Mark Elliot Zuckerberg - Facebook, Inc.

On Messenger, there are two basic things that we're doing. One is we're starting to put some ads into the product just to see the basic parameters around how that performs, how people like the ads or don't, how they work for businesses, and just try to get an understanding of that. So we're starting to run that across the world. But as Dave said, even though we're starting to roll that out in a lot of places, the volume starts off pretty small. The biggest strategic thing that we really need to do in messaging right now is make it so that people organically interact with businesses and that that is a good interaction both for people and for the businesses.

So here's one way to think about this. If you're a business and you have a higher ROI for interacting with a person in your messaging thread than you do on the mobile web or trying to get them to install an app, then that creates this positive feedback loop, where you're going to point your ads towards the Messenger thread. You're going to invest more of your engineering resources in building out the content and experience on the Messenger thread.

So we're currently working on making it so that that is the highest ROI thing. I think we're making progress there. It's not that we're going to crack every market at once, but in sum I think we're definitely getting there. We're getting some positive feedback from the market. But once we start to achieve that in more and more verticals, I think that's going to start

unlocking a lot of behavior, and a lot of businesses are going to want to push more interactions to happen there, which I think will really be the foundation for building that into a big business.

David M. Wehner - Facebook, Inc.

Ralph, it's Dave. I would just add that with messaging

monetization, this is early and it's not a near-term overall Facebook growth driver. And much like Instagram in its early days, we're going to be cautious. But unlike Instagram, this isn't a feed product, so just there are more unknowns here.

Operator

Your next question comes from the line of Heather Bellini from Goldman Sachs.

Heather Bellini - Goldman Sachs & Co. LLC

Great, thank you. I was wondering. Sheryl talked a little bit about Instagram Stories. I was wondering if you could share with us the initial feedback from advertisers. Do they see it as similar to advertising in the IG feed, or are they using it to reach people in a different way, if you've noticed anything over the period that you've been doing it? Thank you.

Sheryl Kara Sandberg - Facebook, Inc.

So it's pretty early for ads in Stories. And I think the way people largely think about this is this is another way of using the Facebook ad system, including our targeting and measurement capabilities, to create ads that are great creative that can reach people. So the fully immersive format with the targeting and optimization of Facebook ads is a pretty unmatched opportunity. We also have a huge opportunity within Instagram. And obviously, the use of ads in Instagram is much, much bigger than the use of ads in Stories.

The way we think about this is we're trying to help marketers reach their customers, both their existing and their new customers, effectively. And we think it's a combination of all these offerings that really are the strength of our business and explains why we can continue to grow. So within one interface, we're working with one sales rep. If you're a large company or a small company, you can buy Facebook. You can buy Instagram. You can buy Audience Network. You can buy the different ad formats within Facebook and Instagram. And that means that you have multiple targeting opportunities, multiple opportunities, and even opportunities to see who engages in an ad

in one place and then reinvest to continue the conversation with those customers. So we think all of these things work together. And these new formats fit in really nicely with the ad system we built, which underlies all of the opportunity.

Operator

Your next question comes from the line of Peter Stabler from Wells Fargo.

Peter C. Stabler - Wells Fargo Securities LLC

Thanks, good afternoon, one for Sheryl, if I could. Sheryl, you guys have rolled out some initiatives designed to address specific advertising categories like Dynamic Travel Ads. Could we anticipate more efforts going forward to address categories that may be relatively underpenetrated by Facebook, Instagram, and Audience Network? I'm thinking about categories like financial services, auto, for example. Thanks.

Sheryl Kara Sandberg - Facebook, Inc.

So we're really happy that our growth has been really strong across our verticals, and that continues to be the case. Our top verticals are pretty consistent in e-commerce, CPG, entertainment, media, retail, and gaming. For the most part, when we build products, we build them to work for all verticals, and you see us do that. So being able to upload your catalog of products can be used no matter what your product lists are. We do build vertical-specific ad products when they are necessary, so Dynamic Ads for travel, for example, as you mentioned, being an example.

I think the heaviest lifting of the work we do is really helping marketers in different verticals focus on the right metrics, which are the sales metrics, because for too long our industry has been focused on proxy metrics, how long someone viewed a video, even brand lift, measurements we care about, but these are all proxy metrics. What really matters is you see an ad and you buy a product. You see an ad and you drive a car off a lot. You see an ad and you order a service.

And so there are very different processes with these different verticals in terms of helping them understand their own purchasing data so that we can connect our ads to their ultimate purchases. We believe that's one of the most important things that we've been very, very focused on, and we have a long way to go. And part of the results you see from us in different verticals are actually explained by the ability of us to help those marketers measure sales at the end of the day. The more that we can tie ad viewing to sales, the stronger our case is with our clients, and so we need to do a lot of work around the measurement with different verticals.

Operator

Your next question comes from the line of Doug Anmuth from JPMorgan.

Douglas T. Anmuth - JPMorgan Securities LLC

Great, thanks for taking the question, two, if I could. Mark, you visited many different parts of the country over the last several months. Just curious how you're applying what you've learned to Facebook and the broader platform.

And then, Dave, can you just give some more color on how things have changed in terms of OpEx and CapEx, just given that you're coming down toward the lower end of the ranges? Thanks.

Mark Elliot Zuckerberg - Facebook, Inc.

So a lot of the themes around building community and bringing people closer together have been underscored by a lot of the experiences that I've had traveling around. And I've tried to write about them. I don't write about each visit that I make on Facebook. But it's been really striking to me when you talk to folks in a lot of different communities how important local institutions and their local communities are for supporting people there.

And there's been a clearly documented trend across the world of declining membership in a lot of different kinds of communities. And I think that that's an important problem that is eating at the social fabric not only of our country but around the world that I hope that we can play a role in addressing. And that's not something that we can do directly, but I believe that we can empower people who want to build local communities and want to play a leadership role in their local community to have the tools that they need. And I think if we can do that, then you start bringing people together at a local level. And when people feel more comfortable in their lives at a local level, then I also think that that helps bring people and bring the world closer together at a global level too.

So that all has been underscored by a lot of the visits and what I've seen as well as a lot of the research that we've done at Facebook, and it's all reflected in the new mission.

David M. Wehner - Facebook, Inc.

Doug, it's Dave. I don't think there's anything that's really fundamentally changed. We are tightening the range to 40% to 45% expense growth due to better visibility. We remain solidly in investment mode. And if anything, we're finding new opportunities to invest in.

From the perspective of hiring growth, I'd really point to the fact that we've been consistently accelerating hiring so far in 2017, and I pointed to the fact that we expect to accelerate hiring in the back half of the year as well. And this quarter was the biggest recruiting quarter in terms of net hires ever for Facebook.

We're continuing to invest in a number of key areas, hiring engineers to drive the three, five, and 10-year priorities. We're going to be investing in content to help build a platform for content producers to find an audience and monetize. We are also continuing to invest in areas like community operations and other areas. So, we remain solidly in investment mode from a total expense point of view.

On CapEx, we still expect to be within the range of \$7 billion to \$7.5 billion, and we're investing aggressively in our data center footprint to support the global growth that we see. So, I think across the board, we're investing heavily.

On head count, I would just point out that our payroll growth tends to lag head count growth, because head count is an end-of-period number, so the acceleration that we're seeing in 2017 will obviously play out in 2018 as well.

Operator

Your next question comes from the line of Ross Sandler from Barclays.

Ross Sandler - Barclays Capital, Inc.

Great, guys, a couple questions on the messaging apps. I think two years ago at F8, you talked about WhatsApp user base about really north of 1 billion sending out 50 billion messages a day, and Messenger was about 1 billion and 20 billion messages a day, so implying kind of like 2.5 times the engagement on WhatsApp compared to Messenger. Is that accurate? And where does that stand today? And then both of these messaging apps started in different geographies around the world. So, how does that impact your thinking around monetization ideas between Messenger and WhatsApp? Thanks.

David M. Wehner - Facebook, Inc.

Yeah. I don't think we're sharing detailed stats on engagement by messaging platform. They're obviously both critical platforms. Both have over 1.2 million monthly actives. And WhatsApp has demonstrated significant engagement with crossing 1 billion daily actives. So, I think that indicates the engagement that you have on that platform. There are

different geographies where the messaging platforms are stronger. And depending on that, that shifts our priorities in different ways.

But overall, from a monetization perspective, I think the strategy there is clear. We're focused on growing the user base, first and foremost. And then secondly, it's about building organic connections between businesses and consumers. And then third, it's about how do we build monetization around those relationships. And I think there, we're further along with Messenger than we are with WhatsApp. And so, I think you see us rolling out the global beta there with ads. So, I think we'll watch and learn from that. And as we learn things, we can apply them in other areas.

Operator

Your next question comes from the line of Justin Post from Bank of America Merrill Lynch.

Justin Post - Bank of America Merrill Lynch

Great. Thank you. Maybe a question for Mark. I know video is a priority for the company. To start with, any change in user trends or engagement as you've added video to Facebook? And then secondly, just how do you think about semi-professional or professional video for Facebook? Is that a good business, given all the content-sharing costs and the production costs when you compare it to your existing social business? And do you see it as cannibalistic or additive as far as usage? Thank you.

David M. Wehner - Facebook, Inc.

I can share a little bit about it, then Mark would want to jump in on any other color. I mean, I would say, as I mentioned, Justin, in my commentary, as people spend more time with video, and more time is going to video, that is going to have a limiting factor to how much time they spend in News Feed. And so, that's going to have an impact on impression rate growth. So there is, in that sense, a cannibalistic effect of sorts that happens there.

But what Mark alluded to was video is where people – as networks improve and devices improve and our products improve, video is the most engaging experience that we can offer. And so, we're seeing consumers adopting that and we're building products for them. In terms of the types of content, I think we're looking at a wide variety of content from – of course, at the core is people sharing experiences in their lives. And that's at the base of what we offer in terms of bringing the world closer together. It's that community content. But then there's opportunities for semi-professional and professional content. And we're exploring things around the platform of

making sure that we're a platform where professional content providers can come, find an audience, and then also monetize that audience.

Mark Elliot Zuckerberg - Facebook, Inc.

I think you pretty much got it.

Operator

Your next question comes from the line of Colin Sebastian from Robert Baird.

Colin Alan Sebastian - Robert W. Baird & Co., Inc.

Great. Thanks. Mark, I wanted to ask a question on conversational interfaces, and specifically if we should think of Facebook becoming integrated as the skill app or feature on platforms such as Alexa, or should we think of things like Oculus, Messenger, and perhaps even a dedicated device as part of Facebook's own alternative platform? And then, Dave, just hoping you can put a finer point on the timing around the reduction in ad load growth. Thank you.

Mark Elliot Zuckerberg - Facebook, Inc.

I mean, to the first question, we're going to build the services that we think are useful. Some of them are going to be platforms and some of them are going to be apps and different things on top of platforms that other folks build. But fundamentally, we're trying to serve our community the best we can, and we'll do that across all these platforms.

David M. Wehner - Facebook, Inc.

Yeah. And in terms of ad load growth, I pointed to the fact that we continue to expect that ad load will be a less significant factor in the remainder of 2017, and that's certainly the case. That starts in Q3, but there's a number of other factors that I also pointed to, including the desktop lapping some of the efforts we made on desktop in terms of unblocking or working against the ad blocking technologies. And so, that has a factor on desktop growth. And then of course, I talked about video and our focus on driving and serving the consumer demand for video, and that's also leading to potentially lower impression growth as well.

Operator

Your next question comes from the line of Rich Greenfield from BTIG.

Richard Greenfield - BTIG LLC

Hi. Thanks for taking the question. On one of your blogs, you put a post up basically detailing basically what people were doing during TV, and you showed a control group where Facebook usage was really constant. And then you did a group that was watching the TV show, and you saw huge spikes of Facebook usage during the television – during the ad breaks during the show.

Wondering like, as you go talk to marketers, obviously, TV ratings are down a lot. How does that type of study – I realize it's just one TV show. But as you make the pitch of why are you not shifting dollars faster to Facebook, how does that type of research start to play into their thinking? And what's holding them back? Is it just the creative doing, or the embracing of 6-second ads? What's the block to getting more of that \$70 billion of TV ad dollars to shift over faster? Thanks.

Sheryl Kara Sandberg - Facebook, Inc.

That was just one study, and I don't want to overstate its importance in how we sell ads. We make the case to our clients that consumers are moving to mobile and that they need to move to mobile. And not that mobile should replace all of their other advertising, but responsible marketers with great companies, large and small, still advertise on TV, and they advertise on mobile, and they advertise in other places. Our goal is to be the best dollar and the best minute anyone spends, and the case we make is that we want them to take advantage of the opportunity that is mobile and the opportunity for the targeting we offer and the measurement we offer.

I think what has taken us time and continues to take us time is we need to convince marketers to make mobile-first video and other ad formats. We talk a lot about how the first TV ads were people reading their radio ads in front of microphones. And we're still in the case that when people go to put an ad on mobile, they often will take an ad that's really produced for TV and put it on mobile. And those work and they can work well, but they do not work as well as ads that are natively mobile, like the Tropicana example I shared in my earlier comments. Mobile ads when they're video are shorter. The brand comes in faster. They tell a story that doesn't evolve but really gets you to understand the brand and the offering really quickly. We talk about it as thumb-stopping creatives.

And so the work that we have cut out for us is to help marketers and working with their agencies evolve the format of the ads so that they're optimized for mobile, optimized for Facebook, optimized for Instagram. I think we're making progress, but we have a long way to go there.

Operator

Your next question comes from the line of Mark Mahaney from RBC Capital Markets.

Mark Mahaney - RBC Capital Markets LLC

Great, thanks. Mark, you talked about maybe trying to accelerate a little bit the messaging monetization end. I'm wondering if there's anything more behind that statement. Is it that you were frustrated with the level that you had seen to date, or that you saw some opportunity that you thought you could accelerate the push towards I guess monetizing?

And maybe big picture, I want to ask. I know the monetization is very early stages. It's barely even begun. There's very few platforms around the world that have got 1 billion users that are unmonetized, so you would think that there's a lot of opportunity there, but maybe not. And maybe people are making a mistake in trying to look at Asian assets and seeing what they've done there and thinking that you can do with your asset. So what's the upside? When you think about the real opportunity, what gets you excited about the ability to monetize those assets five years from now?

Mark Elliot Zuckerberg - Facebook, Inc.

Sure. So we're currently going through the process of figuring out what we want to invest in over the next year and doing our long-range planning, and this is certainly one of the areas where I think we want to be investing a lot more in and believe that there's a big opportunity and can accelerate all the effort.

I do think, as you say, this is one of the rare times in business where you can look at messaging platforms that exist and see how they've successfully monetized in other parts of the world and have that be a floor. I think that over time, we should be able to do better, but that at least provides this existence proof that despite – regardless of what our internal logic is of what we're doing, that someone has done it. So that gives us some degree of confidence there in addition to our own execution on other things.

But I feel there's a pretty clear playbook that we have here of first building up the consumer usage, then building up the organic person-to-business interaction, making sure it works for both people and businesses. And then once you have that, the quality of those interactions is really what contributes to the scale of how much you can grow.

We've seen this in News Feed too. One of the factors that's contributed to ad load over time is the quality of the ads. If ad quality was low, we wouldn't be able to put as many ads in because people wouldn't want them. But in a lot of markets around the world, we see that ad quality is increasing at a very

fast rate, and that makes it so that a lot of times people do ask for the content, which of course creates a very different dynamic.

So we need to get to that in messaging. And because messaging really started from the place of people communicating one to one with each other and is now adding all these other uses, it's just a lot of investment and a lot of different functionality that needs to get added. But for all the reasons that I've said here around our own experience doing this in other contexts with Facebook and Instagram, proof points in the market of how it's worked, I think over the long term I'm pretty confident that we will get there, and it's our job to just go do that.

David M. Wehner - Facebook, Inc.

And I would just add. We don't know at what level that is. We've had more experience with feed-based products, so we know how those play out, and so this is in very much early days mode.

Operator

Your next question comes from the line of John Blackledge from Cowen.

John Blackledge - Cowen and Company

Great, thank you, two questions on the Messenger ads. I recognize that it's early days, but just wondering if you think those ads will be more complementary for core Facebook and Instagram advertisers, or perhaps serve a different advertiser base or different use cases versus core Facebook and Instagram.

And then second question will be, at the high end of the OpEx guide, it implies 53% year-over-year OpEx growth in the back half of the year versus plus 36% in the first half. Just wondering if you can discuss other key drivers of the OpEx growth in the back half of the year aside from head count. Should we consider investment in video content the number two driver of OpEx growth in the back half of the year? Thank you.

Sheryl Kara Sandberg - Facebook, Inc.

On the Messenger ads, I think the way we think about it is, as Mark said, we have a lot of work to do to work on the format of that. This is not a feed-based product, and this is a messaging product. So it's a different consumer format, and we believe that the ad format should follow the consumer format, so it's really integrated as part of the experience. And that's where we have a lot of work to do.

We do think that the advertiser base and the targeting and the measurement we offer once we figure out the format will be a very considerable advantage. We already have 5 million advertisers on Facebook, 1 million advertisers on Instagram. And one of the reasons we were able to scale into Instagram ads more quickly is because we were building off of the Facebook advertiser base. And similarly, the work we've done in Facebook and Instagram and Audience Network will help us expand to Messenger.

But we really want to emphasize, especially since there are so many questions on Messenger monetization on this call, that we're going to be slow and deliberate. We are always looking at the long run. We do not manage this company quarter to quarter. We protect the consumer product and the consumer engagement. Messaging is really strategically important for the company and the long-term engagement with our users, and the organic feel of the engagement with businesses and consumers is where we will be focused. So it's early days this year, and it's going to continue to be early days for a while.

David M. Wehner - Facebook, Inc.

So on the OpEx guide, clearly the biggest driver there is going to be the accelerating head count growth. In addition, I mentioned video content as being a driver. And then also, we're just supporting the global growth of the platform. We continue to see growth in users. We continue to see growth in time spent per DAU across the Facebook family of apps and Facebook, and we're bringing more data centers online and the like towards that growth. So those will start hitting cost of revenue with depreciation.

So there's going to be a variety of contributions to that growth. But like you mentioned, I would point to both head count, specifically in R&D. R&D head count grew 48% year over year in Q2, and that's what's going to be a key driver along with the content layering in.

Operator

Your next question comes from the line of Mark May from Citi.

Mark A. May - Citigroup Global Markets, Inc.

Thanks for taking my questions. Sheryl, in your prepared remarks about a case study, you discussed the benefits of shorter video ads. But I was hoping you could provide an update on the mid-roll Ad Breaks that you've now been testing for a few months and maybe what kind of progress that you're seeing in terms of completion rates. Are you at a point where Ad Breaks can start to roll out more broadly?

And then, Dave, you mentioned that a greater focus on video could impact growth in ad impressions. But would you also assume that a greater focus on video ads could also drive improved ad pricing and yield on your available inventory? Thanks.

Sheryl Kara Sandberg - Facebook, Inc.

On Ad Breaks, we're currently really just testing the ability to put a short Ad Break in uploaded videos. We do it if a video is longer than 90 seconds or live videos are longer than 4 minutes. We're just in the process right now of expanding to more publishers in the United States, so it's really early.

In terms of the metrics we're looking for, it's a great question. And obviously, we care that people view the ads, but the most important thing is tying those ads impressions, even if they're short views, all the way through to that same purchase data that we keep talking about. And so as we work on rolling out more Ad Breaks, and we are rolling out slowly, we're really focused on finding ways to help marketers measure the right things, and that's a very important focus for the company going forward.

David M. Wehner - Facebook, Inc.

Now, Mark, you were asking about video and its impact on pricing growth. I would probably step back and look at it from an overall system perspective. And so starting with the supply side, there's a variety of factors that will impact impression growth, and I mentioned slower ad growth and then increasing video watch time as being two of them. And given there's an auction that drives the pricing in how we run the business, there's always an interplay between supply growth and pricing growth. And so what we're really focused on is driving better ROI for our advertisers.

And Sheryl alluded to it in her earlier commentary about if we get better at converting our impressions into things that are valuable for advertisers and we get more efficient in doing that, we'll be rewarded with better pricing and higher demand at better pricing as a result of that hard work. That doesn't necessarily specifically pertain just to video. It really is across the board. So if we're effective at continuing to do that, then that should benefit pricing growth. And if we can grow demand faster than we grow supply, then we're going to see that play through in price. And that's really the goal of a lot of the hard work that the ads team does to make our products better and more effective for advertisers.

Operator

Your next question comes from the line of Michael Nathanson from MoffettNathanson.

Michael B. Nathanson - MoffettNathanson LLC

Thank you. I have one for Dave and one for Sheryl. Dave, going back to your prepared comments, I think you mentioned there was 24% growth in pricing this quarter, in unit pricing. Can you help us explain or understand underlying that growth which products you're seeing the greatest inflation maybe quarter over quarter or year over year?

David M. Wehner - Facebook, Inc.

I would really just point to the overall dynamics of the system. And again, what we're seeing is with slower supply growth, that's going to play out to higher pricing. And again, are we effective? And we've been effective at delivering good return on investment for our advertisers and getting better at converting what we have as inventory into what they care about as outcomes. And that from a systemic point of view is what's playing through there.

From a product perspective, as we get things like Dynamic Product Ads rolled out, those are incredibly valuable. As we connect more advertisers with those and bring more data into the system and we can get more of the impressions that are very highly targeted and very relevant, then we'll be rewarded with better pricing as we can expand that out into things like Lookalikes. We've talked a lot about it on this call. That basically takes some of that really good targeting and extends that into a much bigger audience, and then we can get more impressions at better value because we're really connecting that with end results that the advertisers value. So it's really all that type of work that we do to get the system better and better, and so we're constantly working to get better penetration of these key ad products.

In terms of the supply side, obviously News Feed is incredibly valuable because it's very present for the consumer. And we've improved the quality of the ads in News Feed, and that's another driver from the supply side.

Operator

Your next question comes from the line of Rob Sanderson from MKM Partners.

Rob J. Sanderson - MKM Partners LLC

Yeah. Thank you. Good afternoon. It already feels like a call about Messenger monetization, so I'm almost reluctant to ask another, but just two things. Compared to what you saw in the early phases of testing News Feed ads, what can you say so far about users' responsiveness to ads in Messenger?

And then second, obviously, there's a lot of momentum in the development of bots on the platform. And do you see this enabling of great organic interactions, as Mark put it, as a way to ultimately make Messenger a great ad platform, or do you think that enabling these other business services can lead to other monetization opportunities down the road, independent of advertising?

Sheryl Kara Sandberg - Facebook, Inc.

It's really too early to understand the impact of the ads on consumers because there aren't enough of them and they haven't been rolled out for long enough. In terms of the bots, what we really think about is our businesses and people making useful connections on both sides on Messenger or any platform. If the connection is useful for marketers, businesses, and useful for people, then it will grow. And we're open to automated bots being useful. We're open to other forms of things being useful.

I think when you think about what bucket of spend that is in, which is a question we get, it really is both marketing spend and any other spend companies have where they're reaching their customers, of which if you think about marketing spend and customer service spend, marketing spend is way bigger, because marketing spend grows as you can grow sales. And customer service spend is something that people generally try to minimize. So, the way we think about it is we want to grow the organic connections, whether they're automated or whether they're personalized, and make sure that that is growing the business of our customers.

Operator

Your next question comes from the line of Brian Wieser from Pivotal Research.

Brian W. Wieser - Pivotal Research Group LLC

Thanks for taking the question. I was wondering if you could comment on how you think the European Commission's GDPR [General Data Protection Regulation] and related privacy initiatives will impact the business, either generally positively, negatively, and whether or not those policies around privacy might yet become global standards. I'm curious how you think that impacts both the consumer product as well as the advertising business.

And maybe separately, I'm just curious if among those advertisers who have expressed particular concern around third-party tool access, we certainly heard from some who have said very publicly that they're going to reduce their spending. Obviously, others clearly are increasing their spending. But

curious how far you've gone towards allaying those concerns and possibly regaining any lost spend.

Sheryl Kara Sandberg - Facebook, Inc.

When we think about any regulatory issue, GDPR or anything else, we respect local laws and regulations. And we have to work really closely with regulators to make sure they understand our business practices, understand how we contribute to economic growth in their countries, and understand the steps we take and continue to take to protect privacy. Certainly, regulation is always an area of focus that we work hard to make sure that we are explaining our business clearly and making sure regulators know the steps we take to protect privacy as well as making sure that we're in compliance.

When you think about the metrics question you asked, how we think about what is – so what I think you're asking about is third-party verification. We're very interested in making sure that marketers can verify or measure outcomes through third-parties, and that's why we're working to actively expand those partnerships.

Operator

The next question is from the line of Lloyd Walmsley from Deutsche Bank.

Lloyd Walmsley - Deutsche Bank Securities, Inc.

Thanks for taking the question. Another one on Messenger. So, you guys have talked of building – the importance of building organic consumer-to-business interaction here. So wondering if you can share what sort of adoption you are seeing in those kind of interactions. And are there certain verticals or geos where it's really taking off?

And then a second, if I can. We've talked a lot, obviously, already about ad impression growth and how it's set to slow in the second half. You're already seeing a big slowdown in impression growth in the first half. And yet, as you've noted, with supply growth slowing, pricing has gone up, as you've added a lot of ROA as to your customers. So wondering why should this phenomenon not continue to carry ad revenue growth in the second half?

Mark Elliot Zuckerberg - Facebook, Inc.

I'll take this. So, there have been a number of questions about Messenger. And in general, we're seeing – I'm happy with the rate of growth in the experiences that we're seeing on Messenger. But if there's one message here that I think is actually important to say, it's that we're trying to

communicate that the pace of growing the Messenger business, it's a longer-term thing. I actually think over the next couple of years or few years, the much bigger driver of the business and determinant of how we do is going to be video, not Messenger.

Messenger, I think, is a really important thing and WhatsApp over a three-to five-year period, and we're investing a lot in it. I think it's a huge opportunity. But as has been noted on the call, video is both at large scale and the economics are quite different from the current feed-based businesses that we have today, especially around how, with mid-roll ads and rev share around that, the margin structure will be different.

So, I mean, one of the big questions that we're focused on as we build this out, we're very committed to building it out because it's what people in the community want. But one of the big things that we're really very focused on is making sure that we get this right so that even though this business will likely be – not likely, I think almost certainly will be a lower margin source of revenue than the current thing that we do, there's this big question of how incremental is that behavior going to be.

And I'm just throwing this context out there because so many of the questions here today have been about Messenger, and I want to make sure on these calls that we do an accurate and a full job of conveying what we're actually thinking about as a business and what we think the outlook is going to be. And I think that those questions around video, which I'm optimistic about, but there are real questions there that we need to manage well, is going to be a much bigger driver of the business over the next two to three years likely even than the trajectory of what we're doing on Messenger and WhatsApp.

David M. Wehner - Facebook, Inc.

And, Lloyd, you asked about why the good work that we've done so far in basically providing value for advertisers is playing through into price. Look, that's not just happening. That's a bunch of hard work that goes into making our ads more targeted that makes the outcomes that advertisers get more valuable. We're going to continue to work to do that, and we're going to continue to invest in making improvements in the ad products, and we think there are great opportunities to continue to make improvements to ROI.

But obviously, if you have rising prices, it's going to make that work against an upstream trend, so we need to continue to work hard to deliver more value for advertisers in the face of that. So we've got our work cut out for us, and we think we've got a great team working on those challenges.

Deborah Crawford - Facebook, Inc.

Operator, we're going to take one last question.

Operator

The last question comes from Ben Schachter from Macquarie.

Benjamin Schachter - Macquarie Capital ([USA](#)), Inc.

Thanks for taking the question. Mark, you stated that AR mixed reality could be the next computing platform. Obviously, this is way out in the future. But if that implies something so large, how do you think about allocating resources for that? How much are you willing to spend on it, and any new thoughts on how this all evolves? And then related to that, the next iPhone is coming out soon. Do you think that there will be capabilities there that will impact the AR evolution meaningfully? Thanks.

Mark Elliot Zuckerberg - Facebook, Inc.

This is certainly something that I'm really excited about long term. Not only does it have the possibility of being the next major computing platform, AR and VR together, but I think it has the possibility of being much more social and intuitive and natural than some of the devices that we have today, whether they're computers or phones. So that's why I'm really excited about that.

When you think about AR glasses, the technology and science to build an experience that would be both comfortable to wear and something that people would actually want to wear out in public, that doesn't exist yet. So there's a lot of foundational work that needs to get done there. That's partially why I'm excited about doing the VR work because it doesn't have that constraint. You're not wearing VR out in public. But also recently, one of the things that we've seen is that there are a lot of AR experiences on mobile. So the work that we started talking about at F8 that we are releasing slowly over the course of the year is certainly one of the precursors for building out that ecosystem that I'm excited about.

But look, if I was just saying that video is going to be the primary driver or one of the big drivers over the next few years and Messenger maybe after that, I think AR is quite far down the road. But when you're running an operation and serving people at this scale, I think you have a responsibility to invest in all these things that are downstream that could help shape and improve people's lives, because I don't think that there are that many other folks in the world who will.

So I think that that's a thing that we take seriously, whether it's connectivity and making sure that people actually all around the world get to enjoy and

benefit from the opportunities that the Internet has or the improvements that come from AI, or eventually upgrading the computing platforms that we all get to use. This stuff doesn't just happen automatically. And someone in the world needs to focus on building it, and we want to play a role in that.

Deborah Crawford - Facebook, Inc.

Great, thank you. Thank you for joining us today. We appreciate your time, and we look forward to speaking with you again.