

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 first 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 first 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 Annual 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. We started the year off with a good quarter. Our community continues to grow, with more than 1.9 billion people now using Facebook every month and almost 1.3 billion people using it every day. Our ads business is doing well too. Total revenue grew by 49% year over year to \$8 billion, and advertising revenue was up 51% to \$7.9 billion.

In my letter to our community back in February, I talked about how for the past decade Facebook has focused on connecting friends and family. Now with that foundation, our next focus will be building community. There's a lot

to do here. Building a global community is bigger than any one organization, but we can help by developing social infrastructure for communities, for supporting us, for keeping us safe, for informing us, for civic engagement, and for including everyone.

Building a global community that works for everyone starts with building millions of smaller supportive communities. This is especially important, since membership in many physical communities is declining. We recently found that more than 100 million people on Facebook are members of what we call very meaningful groups, like parenting or rare diseases, support groups that are an important part of their support structure. My hope is to help more than 1 billion people join meaningful groups to strengthen our social fabric over the next few years.

To help build a safe community, we launched Community Help, a tool that allows people to give and get things like food, shelter, or transportation in the wake of a natural disaster. We also launched a new fundraising tool that allows people to raise money for themselves, a friend, or a cause that isn't already on Facebook.

But it's clear we have more to do here. We're going to continue building new tools to keep people safe on our platform. Over the next year, we'll be adding 3,000 people to our Community Operations team around the world on top of the 4,500 we already have today to review the millions of reports we get every week and to improve the process for doing that quickly.

To help build a more informed community, we make changes to our News Feed ranking to reduce the financial motivation to spread hoaxes. We're working with independent fact-checkers to give people more information on whether an article has been disputed. We launched an educational tool at the top of News Feed in 14 countries to help people spot false news. And we're beginning to test related articles that appear before you read an article, giving you easier access to more perspectives and information.

We're also helping to build a more civically engaged community. In March we launched Town Hall to help people find and connect with their government representatives on a local, state, and federal level in the U.S. In just the first month, we created more than 1 million new connections between people and their representatives. We also rolled out a tool in France ahead of their election that allows candidates to share statements about where they stand on different policy issues. So these are some of the changes we've made to help people build stronger communities.

Next I want to give a quick update on what we're building over our three time horizons, how we're making our core services more useful and

engaging right now, how we're building ecosystems around products that a lot of people are already using over the next five years, and how we're investing in the technologies that will give more people a voice and make sharing more immersive over the next 10 years.

This quarter we launched a set of new cameras. Photos and video are becoming more common than text, so the camera is becoming more central than the text box in all of our apps. In the Facebook app, you can now swipe right from News Feed to access our new camera with masks, frames, and filters. We've developed new computer vision tools that can apply the style of a painting to a photo or video, and we can do that in real time on your phone for the first time.

This is part of making the camera the first augmented reality platform. We want to give developers the power to build all kinds of AR tools in the camera so more people can experience augmented reality on their phone. Creating the first open camera platform is a huge step forward, and we're excited to keep pushing augmented reality forward.

We also expanded the Stories format to give people more new ways to share. Instagram Stories now has more than 200 million daily active people using it. And just a couple months after we launched it, WhatsApp Status has more than 175 million daily active people using it. More recently, we also rolled out Messenger Day and Facebook Stories, and we're going to keep putting video at the center of all these services.

Over the next five years, we're going to build ecosystems around our products that a lot of people are already using. I put live video in this category. Last month we announced that one in every five Facebook videos is a live broadcast. And over the past year, daily watch time for Facebook Live broadcasts has grown by more than four times.

This year we also gave people the ability to go live in 360. Messenger is in this category too. And we just announced that 1.2 billion people use Messenger every month. At F8, we launched the second generation of our Messenger platform and introduced the Discover tab to make it easier to find the best experiences quickly.

Finally, over the next 10 years, we're developing consumer use cases around technologies that are a big part of our future, but won't be a part of our business, a big part of the business for a while. On the connectivity side, in April we successfully simultaneously beamed 16 gigabits of data in each direction between a location on the ground and a Cessna aircraft circling more than 7 kilometers away. Eventually, we're going to use this technology

along with Aquila, our solar powered plane that we're building, to beam Internet to parts of the world that currently don't have access.

In virtual reality, we launched Facebook Spaces, the first social VR platform that lets you create your own avatar and hang out with your friends. And we also released the Facebook 360 app for Gear VR that makes it easier to discover and experience in 360 photos and videos. And we continue to ship RIFT and Touch to people everywhere and deliver a strong content ecosystem across both RIFT and Gear VR.

As people share more video, as we explore more things like augmented reality, and as we build more tools to keep our community safe, we're going to keep investing aggressively in the infrastructure that we need to grow and serve our community. That's why we announced that our next two data centers will be built in Odense, Denmark and Papillion, Nebraska.

We've made some good progress. We have a lot more to do to help build community and connect the world. I want to thank everyone in our community, our teams, our partners, and all of you for being a part of this journey with us.

And now here's Sheryl.

Sheryl Kara Sandberg - Facebook, Inc.

Thanks, Mark, and hi, everyone. We had a strong first quarter and a great start to the year. Q1 ad revenue grew 51% year over year. Mobile ad revenue was \$6.7 billion, up 58% year over year, and was approximately 85% of total ad revenue. Growth again this quarter was broad-based across regions, marketer segments, and verticals.

Our goal is to build meaningful connections between businesses and people. We're doing this by focusing on 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. More businesses around the world are shifting to marketing on mobile. Over 70 million businesses are now using Facebook Pages around the world on a monthly basis, and more and more of them are becoming advertisers. We also recently announced that over 5 million businesses are actively advertising on Facebook, including more than 1 million in emerging markets. Most of these advertisers start by using our free Pages product because it's easy to use.

People are increasingly recognizing that the small screen is big. Our Creative Hub is providing tools that make it easier to create ads optimized for mobile, what we talk about as thumb stopping creative. Marketers can see previews of their ads across Facebook and Instagram before rolling them out and get tips to help drive business results.

Our second priority is developing innovative ad products that help businesses make the most out of their campaigns. We continue to improve Dynamic Ads, which enable advertisers to promote their full range of products across all devices. Advertisers can now target Dynamic Ads to broad audiences and are seeing great results.

Last week I visited home retailer Wayfair in Boston. They use Dynamic Ads to reach a large audience with personalized recommendations from their catalog of over 8 million items. By finding higher revenue customers at a lower cost, the campaign beat Wayfair's return on ad spend goal by more than 20%.

We're also helping marketers use video to capture shoppers' attention. People are watching more video on Facebook than ever before, and it's changing how they connect with businesses. In a recent study Facebook commissioned with Kantar, 30% of mobile shoppers said video is the best way to discover new products.

This quarter, we introduced a new ad format called Collection. Collection helps marketers tell stories on mobile by combining creative videos or photos of product images. Clicking on the products leads to an immersive shopping experience, driving purchase consideration and ultimately sales.

For example, adidas, which is how you pronounce them at their headquarters, and its agency, iProspect, created a video highlighting the innovative future of a Z.N.E. road trip party. Using our Collection ad format, adidas featured four more items from their product catalog below the video. They saw a 5.3 times return on ad spend and a 1.8 times decrease in cost per conversion. It's still early for this new format, but it's a great example of how we can deliver innovative mobile experiences that work for advertisers and work for people.

This quarter we also launched full-screen sound-on ads in Instagram Stories. Advertisers can now reach over 200 million daily actives on Stories to do everything from building brands to selling products.

Our third priority is making our ads more relevant and effective. Measurement is critical. We recently introduced new and expanded verification partnerships and committed to audits with the Media Rating Council. Whether marketers are trying to get people to buy something on

their website or in their store, we now have systems in place to help them measure results and third-party partnerships to verify those results. These are important steps as we continue to build the advertiser trough.

Bud Light's NFL campaign is a great example. To promote the designs of their new team-specific cans, Bud Light took a national and regional approach. They ran video ads featuring the new cans to people ages 21 to 49 in the U.S. Then they also ran more targeted ads in each region featuring the two cans of the teams playing each other. Using Facebook polling and Oracle data cloud, they saw a 24-point lift in ad recall and a 4.4 times return on ad sales.

We know marketers want to compare results across platforms and placements. Historically, we've enabled larger marketers to do this. In Q1 we started testing a set of advanced measurement tools that make it easier for marketers of all sizes to compare the effectiveness of Facebook, Instagram, and Audience Network alongside other publishers.

We're off to a strong start in 2017. We're helping marketers leverage the power of mobile, developing innovative ad products, and delivering proven and measurable results. We're excited about the growing adoption of our platforms, and we're going to continue to invest in helping businesses and people connect.

Thanks, and now here's Dave.

David M. Wehner - Facebook, Inc.

Thanks, Sheryl, and good afternoon, everyone. Q1 was a strong quarter for Facebook. We continued to see healthy growth in engagement trends across our community as well as broad-based growth in our ads business. Let's start with our community metrics.

In March, 1.28 billion people visited Facebook on an average day, up 18% compared to last year. This daily number represented 66% of the 1.94 billion people that visited Facebook during the month of March, which was up 282 million or 17% compared to last year. Our community growth in Q1 was driven by product improvement, internet.org, and ongoing third-party promotional data plans in markets like India. Note that we do not control the timing or terms of these promotions.

Before diving into the financials, I want to highlight that we are no longer reporting non-GAAP expenses, income, tax rate, or EPS. Given that stock is an important part of our compensation structure, we believe that investors should focus on our financial performance with stock-based compensation included.

Turning now to the financials, all of our comparisons are on a year-over-year basis unless otherwise noted. Q1 total revenue was \$8 billion, up 49%. Ad revenue was \$7.9 billion, up 51%. Exchange rates did not affect our overall growth rate this quarter, as headwinds in certain currencies were offset by tailwinds in others.

In terms of regional advertising growth, rest-of-world and Asia-Pacific were our strongest growers in percentage terms at 66% and 60% respectively. Both regions benefited from particularly strong advertiser demand. Europe and North America both grew at 47%.

Mobile ad revenue was \$6.7 billion, up 58%, and represented approximately 85% of ad revenue. Desktop ad revenue grew 22% despite a decline in desktop usage and was aided by our recent effort to limit the impact of ad blocking technologies, which we began in Q3 of last year. Our mobile ads business continued to be driven by healthy supply and demand in apps (15:41). In Q1, the average price per ad increased 14% and the total number of ad impressions served increased 32%, primarily driven by mobile feed ads.

Payments and other fees revenue was \$175 million, down 3%. Q1 total expenses were \$4.7 billion, up 40%.

In 2017, we have continued to accelerate our hiring efforts. We added over 1,700 employees in Q1, predominantly in technical and recruiting functions, and ended the quarter with approximately 18,800 employees, up 38% compared to last year. This marked an acceleration from the 34% growth rate in Q4.

Q1 operating income was \$3.3 billion, representing a 41% margin.

Our tax rate was 10%, which reflects the adoption of ASU 2016-9 in the fourth quarter. Excluding this adoption, our tax rate would have been approximately 9 percentage points higher. Note that the new accounting guidance does not impact the cash taxes we pay but merely how the tax provision is presented under GAAP, whereby now excess tax benefits are flowing through the P&L and in this quarter positively impacted EPS.

Net income was \$3.1 billion or \$1.04 per share.

Q1 capital expenditures were approximately \$1.3 billion, driven by investments in data centers, servers, office facilities, and network infrastructure. In Q1 we also broke ground on our ninth data center in Nebraska.

We generated approximately \$3.8 billion in free cash flow. In the first quarter, we repurchased \$228 million of our Class A common stock and used \$771 million in cash for taxes paid related to the net share settlement of equity awards. We ended the quarter with \$32.3 billion in cash and investments.

Turning now to the outlook, with regards to revenue, we continue to expect that our ad revenue growth rates will come down meaningfully over the course of 2017. We expect that ad loads will play a less significant factor in driving revenue growth after mid-2017. We also expect desktop ad revenue growth rates to slow in the third quarter when we begin to lap our efforts to limit the impact of ad blockers. We continue to expect that our full-year 2017 payments and other fees revenue will decline compared to full-year 2016. As a reminder, payments and other fees revenue is primarily generated from payments related to games played on personal computers.

Turning to the expense outlook, we continue to expect that full-year 2017 GAAP expenses will grow 40% to 50% compared to full-year 2016. I would note that as we look into 2017 and beyond, there are going to be a number of initiatives we believe are valuable to the community and to the company in the long term that are going to be net negative on our operating margin. We are embarking on a significant ramp up in infrastructure supporting global growth, and we continue to expect that full-year 2017 capital expenditures will be in the range of \$7 billion to \$7.5 billion, which is up over 50% compared to last year.

Turning now to tax, as we noted in the last call, under the new accounting guidance, our tax rate will vary based on our stock price. At current stock prices, we expect that our Q2 and full-year 2017 tax rates will both be in the mid-teens, so up from the first quarter rate.

In summary, Q1 was a strong quarter and a great start to the year. Growth in the Facebook community remains strong. Engagement across our family of apps is healthy and growing, and advertiser demand from our growing base of marketers is robust. Importantly, we continue to invest aggressively to build our business and drive value for our community over the long term.

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

Question-and-Answer Session

Operator

Your first question comes from the line of Eric Sheridan from UBS.

Eric J. Sheridan - UBS Securities LLC

Thanks for taking the question, maybe one thematic question on Instagram for Mark and Sheryl. I wanted to understand what you're seeing in terms of the development of the community on the user growth side, the engagement side, as well as on the monetization side with respect to breadth of advertisers and ad product evolution, what that means for Instagram's future and how it compares to maybe what you've learned growing the business on the Facebook side over the last couple years. Thanks so much.

David M. Wehner - Facebook, Inc.

Eric, why don't I take that and then Sheryl can augment with some additional color? So when you think about Instagram, we're seeing great growth there with the community. So this past quarter, we announced 700 million monthly actives, so that was a big announcement. And that's broad-based growth across the globe, so we're pleased with that.

In terms of the development on the advertising side, we're not specifically breaking out Instagram revenue, as you know, because that's sold through the same Facebook ad interfaces, but we're seeing really good contribution and good growth there. And we're developing it across a wide variety of ad products, so VR is becoming a more significant part of the Instagram story, where it was originally more brand-focused. But we've expanded the product offerings on the Direct Response front, and we're continuing to bring more ad products to Instagram.

Sheryl Kara Sandberg - Facebook, Inc.

We're pretty excited about what's happening in the Instagram ad space because Facebook and Instagram are the two most important mobile ad platforms. And there's a special property with Instagram, which is that the increasing visualization of ads and the creative canvas it offers with the science behind the Facebook targeting and measurement system is really a pretty unusual combination. We're also seeing very broad adoption, including small customers. We are pretty excited to have 1 million advertisers and 8 million Instagram business profiles on the platform.

To share one example, an online store in Brazil called Loja Nama, they sell decorative items and accessories. Their business owner, Joanna [Cariello], took photos of her products on her phone and then created ads with our Shop Now button. She targeted young audiences in Brazil who are interested in fashion, decoration, movies, and architecture. And during the period of her campaign, Instagram accounted for 79% of her sales. And I think what that shows is the power of the very sophisticated targeting we offer across our platforms along with really the ability to use very simple tools like a phone to create very sophisticated but visually compelling ads.

Operator

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

Douglas T. Anmuth - JPMorgan Securities LLC

Thanks for taking the question, one for Mark and then perhaps one for Sheryl or Dave. Mark, first just on the video strategy, I was hoping you could talk a little bit about how that's evolving in terms of the type of content that you're licensing and featuring within the Facebook Video tab, and then if you have any more clarity just on how the economics are going to work there around revenue share and gross margins.

And then on ad revenue, the U.S. and Canada was very strong at 47% growth, but at the same time it also did decel a little bit more than we've seen in recent quarters. I was just wondering if there was anything else to call out there. Thank you.

David M. Wehner - Facebook, Inc.

Yes. Doug, why don't I take the decel question on the U.S. and Canada? I don't think there was anything particularly surprising about the deceleration in the growth in the U.S. and Canada. We've been talking about expecting a deceleration in ad revenue growth, and we saw that play out in the U.S. and Canada modestly.

Obviously, we were particularly pleased that there was really strong demand that benefited regions like APAC and rest-of-world, so really broad-based strength in APAC. And then rest-of-world, we saw a rebound in Latin America, especially Brazil, so we're seeing some particular strength there. So I think that I think was a big highlight.

On the content front, we're looking at investing in kick-starting an ecosystem for longer-form content on Facebook, and that involves us working with content providers to develop that content. In the long run, we expect to see a revenue share model on the platform. And obviously, we're going to be in an area where we're sharing revenue with content providers, so it's going to have a different margin profile than core Facebook News Feed from an expense profile perspective.

Mark Elliot Zuckerberg - Facebook, Inc.

I think you pretty much got that.

David M. Wehner - Facebook, Inc.

Okay.

Operator

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

Brian Nowak - Morgan Stanley & Co. LLC

Thanks for taking my questions. I have one for Mark on Messenger monetization. Can you just talk about some of the biggest trends you're monitoring and what you're most excited about as you think about ways to monetize Messenger over the next two or three years?

And then on engagement, you continue to grow Instagram and Messenger user bases really healthily. I guess I'd be curious to hear, do you still continue to see rising time spent per user across all three of those platforms, even as the DAU base gets bigger? Thanks.

Mark Elliot Zuckerberg - Facebook, Inc.

Can you start with the stats, Wehner?

David M. Wehner - Facebook, Inc.

Sure. Yes, I can start with the stats, Mark. On the engagement front, we're seeing time spent growth per DAU across the Facebook family of apps, and that includes Facebook itself. Instagram has been strong, especially with Feed Ranking and Stories. We're not breaking out specific time spent stats on a quarterly basis on those. And then on the Messenger monetization front...?

Mark Elliot Zuckerberg - Facebook, Inc.

I can talk about the strategy. The first thing that we need to do on Messenger and WhatsApp is get a lot of businesses using it organically and build the behavior for people that they reach out to businesses for different things, like customer support or for getting news content, things that may not eventually be the big business use cases but establish the behavior of people interacting not only with their close friends, but also with businesses.

In terms of making money on that, once we have that behavior, I think there are going to be a number of ways that we can amplify that. We're already experimenting with a couple. One is ads that actually display a News Feed, not in Messenger or WhatsApp, but that link to the ability to communicate with a business directly in Messenger or eventually WhatsApp. And that's great, it converts better for the businesses. They can have a better dialogue with the person and a persistent relationship. So that's one

way that I think that this will be valuable. The other way is of course eventually showing paid content in Messenger, whether that's in the inbox or in relevant ways throughout the product.

But the top priority right now is just building out the base of organic interaction between people and businesses that they want to interact with. And once we get that to a big base, then there are going to be a lot of opportunities to build a business, and the business will be proportional to the amount of that activity that people want to do organically.

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, a couple things on advertising and modeling. When we think about Q1, can you help us at all think about how much the ad load growth is contributing and what drove the improvement in pricing in the quarter?

And then, Dave, when you look out to the third quarter and you lap the ad blocking on desktop, are there more ad blocking you can do to help maintain that growth, or are there other drivers there for desktop that we can think about? Thank you.

David M. Wehner - Facebook, Inc.

Sure, Justin. I'm not breaking out specific drivers on the supply side. Supply growth was healthy, and we had contributions from users' time spent and ad load in the quarter.

In terms of what drove the improvement in the pricing, it's strong demand, so that's playing through in the face of a little bit slower supply growth. And so you're seeing – of course, the auction drives pricing and there has been interplay between the supply growth and the pricing growth, and we're seeing the strong demand play through on the pricing side.

When we get to lapping our efforts on desktop, I do think you're going to – you have a secular trend away from desktop. So that's going to be an overall factor in desktop, our ability to grow and maintain the desktop business, so I think that's an underlying factor. We're always going to be in a back-and-forth with ad blockers on the desktop side. So I think that's going to constantly be a thing that plays into the desktop revenue.

Operator

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

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

Great, thanks. First off I guess is a follow-up on the earlier video question from Doug. Could you add some perspective on engagement trends with video content and video ads such as average viewing time and whether this mix is what is impacting impression growth? And then more broadly, if you can offer some perspective on how much of the video ad spending on Facebook applications are incremental to television budgets, or if there's any evidence you're seeing of a share shift. Thank you.

David M. Wehner - Facebook, Inc.

Sure, Colin. I'll take that first one. So impression growth was 32% in Q1, as I noted, and that was a bit slower than in previous quarters.

Those of you who have been following us for a while know that periodically we make changes to the product that is going to impact some of the metrics. One of the things that I would call out in Q1 as a contributing factor on the impression growth side was our decision to rank longer-form video higher in News Feed. That means more time in video, and that does come at the expense of some impression growth in News Feed. So I think you do see some interplay there on the impression growth side due to our focus on video. And then Sheryl was going to follow up on the video ad spending.

Sheryl Kara Sandberg - Facebook, Inc.

On TV, we are definitely seeing people continue to advertise on TV and use us as a complement. So over time, we believe that the dollar shifts with eyeballs and we want to earn it from our clients and be the best dollar and the best minute they spend and help them measure across channels.

I think increasingly, the question is not if you can do without TV, but it's if you can do without mobile. And we're working hard to help advertisers develop the video creative that really works for mobile because that really makes a really big difference. And we think the combination of the creative working for mobile but also the measurement and targeting we can do is a very powerful offer.

To share one of my favorite new examples, Subway working with their agency 360i developed video ads and images for Facebook and Instagram to promote the limited time offer Reuben sandwich. And they used Audience Insights, targeting people ages 18 to 49 who purchase meat and cheese,

and that's just pretty incredible targeting. Nowhere else I don't think you can actually target that way and people interested in fast food and encourage them to visit Subways. They then used Nielsen Brand Effects and were able to measure a 16-point lift in ad recall and a 5-point lift in intent to visit Subway. So it's a really unique combination of the power of creative that was designed for video for mobile with very specific targeting and very specific measurements.

Operator

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

John Blackledge - Cowen & Co. LLC

Thanks, two questions. Mark, you mentioned adding 3,000 reviewers to content at Facebook. Could artificial intelligence be used over time to help solve some of the monitoring? And then just more broadly, how is AI being employed in the processes at the company now versus a couple years ago?

And then second item would be, could newer ad units like mid-roll video help mitigate the decel from the lower ad load growth contribution in second half 2017? Thank you.

Mark Elliot Zuckerberg - Facebook, Inc.

I'll talk to the content and AI questions, and then someone else can talk about the ad piece. The short answer is yes. AI tools over time will be able to do a better job of flagging things for the set of people who are in the Community Ops teams that we can prioritize what we look at. A lot of what we're trying to do here is not just about getting content off Facebook. Last week there was this case where someone was using Facebook Live to broadcast – or was thinking about suicide. And we saw that video and actually didn't take it down and helped get in touch with law enforcement who used that live video to communicate with that person and help save their life. So a lot of what we're trying to do is not just about taking the content down, but also about helping people when they're in need on the platform, and we take that very, very seriously.

Over time, the AI tools will get better. Right now there are certain things that AI can do in terms of understanding text and understanding what's in a photo and what's in a video. That will get better over time. That will take a period of years, though, to really reach the quality level that we want. So for a while, our strategy has been to just continue building as good tools as we can because no matter how many people we have on the team, we're never going to be able to look at everything. So that's going to be a big challenge.

But given the importance of this and how quickly live video is growing, we wanted to make sure that we doubled down on this and made sure we provided as safe of an experience for the community as we can, which is why we're almost doubling the size of the Community Ops team to focus on some of these issues around safety on live video. But over time for sure, more AI will do this, but this is over a period of years.

David M. Wehner - Facebook, Inc.

John, I think your question then was on Ad Breaks and then the mid-roll type of format. I think there we're testing the ability and are putting short Ad Breaks into longer-form live and on-demand videos. Tests are going well, but it's really early days to talk about that being a significant contributor, so we're working to continue to make those products better and continuing those tests, but it's early. On that front, we're focused on building out the best video experiences for our community and growing longer-form content as a priority. And Ad Breaks is going to allow us to have a monetization strategy with that longer-form content. But like I said, it's early.

Operator

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

Heather Bellini - Goldman Sachs & Co.

Great, thank you. I guess I had a question just related to Instagram and Facebook Stories. We've talked a lot about ad load growth over the last year, and Dave's been talking about the pending slowdown, which I think we're all expecting. But how do we think about these new applications or new ways to engage with the apps at the top of your phone, where you're starting to see ad insertion show up as well? Is that thought of as different than the general ad load comments that, Dave, you're making? I'm sorry to split hairs here, but I'm just trying to get a sense of how to think about when they're starting to show up in new places.

And then I guess I just had a follow-up for Sheryl. And one question in particular was if there's any measurement metrics that advertisers are asking for now that if you could help them with, it would make them even more eager to shift their budgets over from TV and follow their eyeballs? Sorry, thank you.

David M. Wehner - Facebook, Inc.

So, Heather, on Stories, again, it's a pretty similar answer, I think, to Ad Breaks in the sense that it's early in terms of using the ads formats in

Stories. We've certainly rolled those out. They are not in the ad load calculation per se. So it is different, as you said, from the ad load commentary that I've given. But obviously, it's very early on those products. And then, Sheryl, you had the question about measurement metrics.

Sheryl Kara Sandberg - Facebook, Inc.

Yes, we know that measurement is so critical, and we really want to measure core business results and focus on becoming the number one growth driver for our clients. We are continuing to constantly review our metrics. When we find bugs or errors, we're reporting them to our clients and addressing the issue and continuing with that analysis as we work through all of our metrics.

We're also very focused on extending measurement partnerships and third-party verification. This last quarter we extended viewability measurement to the Audience Network, added another verification partner, DoubleVerify, for video and display measurement, and introduced our MMM [Marketing Mix Modeling] portal so that we can help people measure across all of the different platforms and compare the effectiveness of their ad spend no matter what their end goal is.

Operator

Your next question comes from the line of Anthony DiClemente from Nomura Instinet.

Anthony DiClemente - Nomura Instinet

Thank you very much. I have one for Mark and one for Sheryl. Mark, at F8 and in your comments today, you talked about making the camera central to the app, making the camera the first augmented reality platform. I know it's early, but can you maybe share with us your thoughts about the potential commercial application of augmented reality as you see it today?

And then, Sheryl, there's been more lately about the use and effectiveness of influencer marketing on both Facebook and Instagram. How is Facebook thinking about sharing in the economics of when brands use celebrities or influencers to market their products using their Facebook posts? Is it by bringing more transactions onto the platform, building on the shopping experience on Facebook? How is Facebook going to share in those economics? Thank you.

Mark Elliot Zuckerberg - Facebook, Inc.

All right, I can start by talking about augmented reality. The big step forward that we announced at F8 is that there are lots of different apps that have cameras in them or that independent developers just build an app that has a single camera effect. But what we're basically saying is that there's so much innovation and so many different types of effects that people are creating that we don't want developers to have to build their own separate app and get to a huge scale in order to build some new kind of visual tool.

So we built – we're making the cameras inside the whole family of apps into the first augmented reality platform, into an open platform, which is different from what any other app that has a camera has done before. It's going to open up a much greater diversity of use cases, not only making it so that use cases like facemasks or style transfers that we already have, you're now going to have thousands of options instead of just 10 or 20 at a time. But there are also going to be all these new kinds of things that we're not even building today that developers will be able to experiment with.

One of the examples I showed at F8 was around using object recognition and computer vision to be able to point your camera at something and then tap on it and get a card of information and maybe even a buy button. So there are lots of different ways that over time this kind of content is going to both augment existing real-world objects and eventually replace them, which I think is going to be an interesting opportunity. maybe not on augmented reality on the phone but on glasses eventually.

When you have that, I think we're going get to a point where things like TVs, you no longer need a physical TV. You'll get a \$1 app that you can watch it screen on. And it will just be an interesting exercise to see how many of the things that we have that are physical things don't actually need to be physical in that world, and how much innovation that opens up for independent developers all around the world. A lot of people don't have a factory, so they can't build a TV. But think about how many kids and different developers around the world, kids sitting in dorm rooms and all these different places are going be able to create things that today they couldn't.

So I hope this is going to create a pretty interesting economy. So a lot of that stuff is pretty far out, five, ten years. But we want to be pushing this forward. I think we're a little bit late to the trend initially around making cameras the center of how sharing works. But I do think at this point, we're pretty much ahead in terms of the technology that we're building, and making it an open platform I think is a big is a big step forward. A lot of people are using these products across our family of apps, and I would expect us to continue leading the way forward on this from this point on.

Sheryl Kara Sandberg - Facebook, Inc.

When you think about influencer marketing, we definitely see publishers interested in it, brands interested in it. And so we've worked on branded content, the ability to tag a sponsor and share posts and insights. And the financial arrangement remains between the sponsor and the publisher. It's early, but we're seeing some positive results with publishers of many different types bringing branded content to Facebook. In Q1, we opened this up to unverified pages so we could enable more people to take advantage of this kind of targeting.

We see this in the broader context of better targeting. When you think about what really drives great performance for both people who are using Facebook but for marketers, it's well-targeted ads. And so influencer marketing is one way to get there, but we're focused on a very full range of ability to target well. We've been really pleased with the adoption of our targeting products from Custom Audiences to Lookalikes to Dynamic Ads, and we think all of these can improve the relevance of the ad by making ads more targeted, because when they're more targeted, they have higher returns for marketers and they're more enjoyable or relevant for people.

Operator

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

Mark Mahaney - RBC Capital Markets LLC

Great, thanks. First, I think it's a great move to go all-in GAAP in terms of reporting. Second, David, when you talked about the ads, your ad load commentary, I couldn't tell if there was a subtle shift there when you were saying that the ad load pressure would occur after the end of the year rather than in the second half of the year.

And then third, this is for Sheryl and Mark. The recent stories about gender bias amongst engineers at Facebook, and I know you quickly responded to that and said if there were anything, there may be a rank bias, but in my mind it creates the opportunity potentially for Facebook to better tap into what is probably underappreciated female engineering talent in the Valley and across technology. How do you think about that as an opportunity for the company? Thank you.

David M. Wehner - Facebook, Inc.

I'll just real quickly address the ad load issue, Mark. Sorry if it wasn't clear, really no change in outlook there. We continue to expect that we'll see deceleration in ad revenue growth. And that's going to be particularly

pronounced as we get into the second half of 2017 because ad load will be a less significant factor driving growth starting in the second half.

Sheryl Kara Sandberg - Facebook, Inc.

On the issue you raised with the Facebook female engineers, I'm really glad to have a chance to address this because this is an issue I take very seriously. On the specific report on this study, the study was conducted by a former employee with very incomplete data. When that study was shared with people internally, and we have that culture where people do studies and share things, and we're really glad because that helps surface issues, we immediately conducted our own research using the full data.

And what we found is that the main reason code was sent back at different rates was not correlated with gender. It was correlated with level, and the fact that we have more male senior engineers was explaining it. If you compared male and female engineers at the same level, there was not this discrepancy.

Then that leads to the obvious question is are you promoting men and women at the same rate and the broader question of are you paying men and women fairly. And we do a comprehensive look at that every single promotion and pay and performance cycle we have, which is six months. And we know that we're promoting men and women at the same rate as men.

Now that said, our industry still has issues and we still have issues. We don't have enough senior female engineers. We don't have enough women going into computer science, and we take this very seriously, from the work we've done with LinkedIn to get CS&E Lean In circles all over college campuses, to encourage more women and under-represented minorities to come into our field. We've had a really nice program in extra internships where we're taking people who are not yet majoring in computer science but we think have the ability, and teaching them for a summer and seeing them return, to the work we're doing with our female engineers to make sure that all forms of bias are surfaced and eliminated. And we can continue to use the full talents of the population. Nothing is more important to us.

Operator

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

Ross Sandler - Barclays Capital, Inc.

Hey, guys. Just had two questions on video. We know it's early, but what kind of traction do you see with the video tab that's in beta? And do you

think longer term the video consumption is going to be in that dedicated tab, or will it stay in the News Feed based on what you're seeing right now?

And then, Dave, just to follow up on your previous answers, so are the costs related to video ad rev share or licensing of video content, is that baked into your OpEx guidance for 2017, or is that something that will step up after this year? Thank you.

Mark Elliot Zuckerberg - Facebook, Inc.

I don't know if we have any public stats on the video tab, probably not. But in terms of the strategy, I can talk about that quickly. There were two basic use cases for checking in with Facebook and seeing what's going on in the world. What people do with News Feed a lot of the time is they have a few free minutes, or you want to sit down for maybe a longer session to see everything that's going on in the world. You don't have a specific intention to watch a specific type of content. You just want to check in and see what's going on in the world.

There's this whole other use case around content, which is going to the app or sitting down at a TV because there's some content that you want to watch and you want to go directly to it. And that's what we're trying to do with the video tab, to make it so that all the different folks, whether they're pages that you follow or creators that you like, who you want to subscribe to and get the updates to what they're doing, that you have a place that you can go to with more intent to consume that content.

The reason why it needs to be a different tab or at least a different service from News Feed is because people come to it with a different intent. I think you're going to start in the future getting people coming to Facebook for the News Feed use case of checking in and people coming with an intent to go to the video tab to watch a specific video. So that's what we're doing there. That's the strategy, and I guess we'll update on stats when we have them.

David M. Wehner - Facebook, Inc.

And, Ross, on the costs related to the video ad rev share, yes, our guidance on total cost is all-inclusive, so it includes all the R&D investments we're making. It includes the content. It includes things like the Community Operations investments that we talked about today in the announcement. But I would say that the nature of the types of video content deals that we're doing will make them more likely to show up after 2017. So there will be some content expense in 2017, but I think it will be something you will see step up after 2017.

Operator

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

Mark A. May - Citigroup Global Markets, Inc.

Thank you. Mark, in your prepared remarks, you talked about doing more to foster local communities and groups, and it would seem like one of the more interesting test cases here already is in Local Marketplaces. I was just wondering if you could talk to us a little bit about the kind of adoption and engagement that you've seen with Local Marketplaces and maybe anything that you've learned that you can apply to some of the newer initiatives that you're looking at?

And then secondly, probably for Sheryl, for Ad Breaks to scale, it appears that content creators need to adapt their programming for this, and of course, users need to engage with the ads. So I guess the question is how are completion rates for Ad Breaks? I know it's early, but what are you seeing so far? And how would you characterize the willingness of content creators to adapt?

Mark Elliot Zuckerberg - Facebook, Inc.

I can talk about Marketplace Groups first. So I think your basic point is right, that the reason why we started working on Marketplace and the tab around that is because when we were exploring what the biggest use cases were of Groups, we uncovered that a very large number of people, hundreds of millions, use Groups to buy and sell different things. And so these whole communities have formed, which was somewhat surprising to us honestly, because we hadn't developed that product specifically for buying and selling. It was for group communication and that's what people were using it for. So we decided hey, we're going to put together a team that's going to invest in making this actually good for buying and selling and see how much we can grow that economy. So I don't know that we have any public stats on that yet, but that's an area that I'm certainly very excited about.

And then in terms of local communities, one of the big trends in the world that we've seen is just that participation in all kinds of different physical communities, whether they're sports teams or some religious groups or different kinds of different things, have been declining a lot over the past several decades. And that I think is a big social issue that is eroding the social fabric of the whole society, not just our country, but around the world. And that's one where I look at that and I wonder if Facebook can play a role in helping to strengthen that.

We look at – there are more than 1 billion people every month who use our Groups product. But if you think about your own use of the Groups product, you probably are a member of a bunch of different groups that you maybe

check in on very infrequently. So that's very different from – there's a handful of people, around 100 million or a bit more, who are a member of what we call a very meaningful group. So that could be a parenting group or you're diagnosed with a rare disease, and you can now connect with people all around the world to share stories around that. These are groups that upon joining, they become one of the things that you spend the most time with on Facebook, one of the most important parts of your experience, and a really fundamental part of your real-world support structure.

So we look at that and we ask the question of hey, if 100 million people are in those very meaningful groups today, can we get that to be 1 billion people over next several years? And if so, then that can help reverse some of the decline in community membership and help strengthen the social fabric, not only in our country, but around the world. So that's a big part of what we're focused on across a number of different initiatives.

Sheryl Kara Sandberg - Facebook, Inc.

And I'll talk a little bit about the Ad Break, what we're seeing. It's really early both in terms of testing the ads and getting any feedback from users, so people who use Facebook, so we don't have that data to share. But we're pleased that the test is active. We're pleased that it's going well and that we can do both live and uploaded videos. We think over time that marketers will follow where people are spending their time. And if the ads can be well-targeted, we think we'll be able to see engagement, and we already see that. When ads are really well targeted and taking full advantage of the kind of targeting we offer, so you're showing people something they want to see, we see engagement that we think is really critical.

It's also worth noting that the metrics that really matter at the end are driving sales. And so any of the engagement with ad metrics, whether it's remembering an ad going back to – people have been measuring that for a long time too, how long a video ad is viewed, are only proxy metrics. What matters is the impact on sales. And so we think the better we can do at getting the measurement to what actually matters, which is the end behavior marketers are trying to drive, the more people will shift their focus to business metrics, the better it will be for the returns they get and ultimately our business.

Operator

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

Michael B. Nathanson - MoffettNathanson LLC

Thanks. I have three philosophical questions on video for you guys. Anyone can grab them. The first is, it was interesting to see the NFL games go from Twitter to Amazon. I wonder. Do the NFL games fit with your video strategy, and why or why not? That's one.

Two is, I know the model is revenue share, but a lot of the more traditional companies would like a license fee or the ability to sell their own inventory on your platform. Is that something you'd consider?

And last but not least, the question about monetization, why is mid-roll optimal to pre-roll, and can you share anything about the testing of that concept?

Mark Elliot Zuckerberg - Facebook, Inc.

I can talk about sports. So in terms of experimenting with different content, I think we'll try a number of different things here. In terms of working with folks to produce all kinds of content, sports is probably something that we'll want to try at some point. But again, like Dave said before, the goal is going to be creating some anchor content initially that helps people learn that going to the video tab that that's a great destination where they can explore and come to Facebook with the intent to watch the videos that they want.

And then the long-term goal is actually not to be paying for specific content like that, but doing a revenue share model once the whole economy around video on Facebook is built up. But we're working on that, and I think we'll probably look at different pieces of content like this around the world, but at this point don't feel like any specific one of them is a must-have for us.

David M. Wehner - Facebook, Inc.

And I think Mark touched on the question of business model here, and our focus really is on revenue share. We'll be investing to kick-start the ecosystem with content, so derisking it for some of our content partners to start off with, but the focus is really to build a rev-share model over time that's sustainable. That's the focus as opposed to other models.

In terms of why mid-roll is preferable to pre-roll, Facebook is well suited for shorter-form content where we're ranking things to be longer-form as well. So we're ranking longer-form video, but that's still relatively short video views. And for that reason, we think mid-roll is a better user experience.

Deborah Crawford - Facebook, Inc.

Operator, I think we have time for one last question.

Operator

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

Peter C. Stabler - Wells Fargo Securities LLC

Thanks very much, one for Sheryl. Sheryl, you talked a lot about the targeting advantage of Facebook, and you have a number of data signals and sources informing that. I'm wondering if you could talk about the relative importance of collecting signals on the platform versus off the platform, for instance, the behavior of Facebook users interacting with third-party websites. Is this the depth of your off-platform collection? Is this a significant competitive advantage for you? Thank you very much.

Sheryl Kara Sandberg - Facebook, Inc.

We think that targeting end measurement are significant competitive advantages for us. We're very focused on the privacy of what people do, wherever they do it, and using the information we have in a very responsible way. We believe that because people are sharing interests, because people are themselves their real identity on the Facebook platform, we have a significant advantage just in basic targeting itself. Just age and gender, we're 38% more accurate than broad-based targeting according to Nielsen in the U.S., and that's just age and gender. And then if you think about some of the key studies I shared, targeting people who purchase a certain item, targeting people who are interested in a certain item, we think that's very substantial.

We also think that there's a real competitive advantage in focusing on business results, as we have. We're really working on shifting people to understanding what their real objectives are so that they can focus on driving businesses. At the end of the day, when you show an ad, you want to move a product off a lot, off a shelf, into a shopping cart, whether it's online or offline, and that's where our focus is and will continue to be.