

Company Name: Alphabet  
Company Ticker: GOOGL US  
Date: 2019-02-04  
Event Description: Q4 2018 Earnings Call

Market Cap: 790,706.30  
Current PX: 1141.42  
YTD Change(\$): +96.46  
YTD Change(%): +9.231

Bloomberg Estimates - EPS  
Current Quarter: 12.949  
Current Year: 55.778  
Bloomberg Estimates - Sales  
Current Quarter: 30226.591  
Current Year: 131201.600

## Q4 2018 Earnings Call

### Company Participants

- Ellen West
- Ruth Porat
- Sundar Pichai

### Other Participants

- Eric J. Sheridan
- Anthony DiClemente
- Douglas T. Anmuth
- Heather Bellini
- Brian Nowak
- Mark Mahaney
- Steve D. Ju
- Daniel Salmon
- Colin Alan Sebastian
- Justin Post
- Ross Sandler
- Brent Thill

## MANAGEMENT DISCUSSION SECTION

### Ellen West

#### *GAAP and Non-GAAP Financial Measures*

During this call, we will present both GAAP and non-GAAP financial measures

A reconciliation of GAAP to non-GAAP measures is included in today's earnings press release, which is distributed and available to the public through our Investor Relations website located at [abc.xyz/investor](http://abc.xyz/investor)

### Ruth Porat

#### *Q4 Highlights*

##### *Opening Remarks*

- We had a strong 2018 with total revenues of \$136.8B, up 23% over 2017, reflecting the benefit of our ongoing investments to deliver exceptional experiences for users and compelling returns for our advertisers, partners, and enterprise customers
- For Q4, revenues of \$39.3B were up 22% year on year and up 23% in constant currency, as we continued to benefit from ongoing strength in mobile search, with important contributions from YouTube, cloud, and desktop search

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- For today's call, I will begin with a review of results for the quarter on a consolidated basis for Alphabet, focusing on y-over-y changes
- I will then review results for Google, followed by Other Bets, and will conclude with our outlook
- Sundar will then discuss business and product highlights, after which we will take your questions

### ***Revenue Growth***

- Let me start with a summary of Alphabet's consolidated financial performance for the quarter
- Our total revenues of \$39.3B reflect a negative currency impact y-over-y of \$724mm, or \$600mm after the impact of our hedging program
- Turning to Alphabet revenues by geography, you can see that our performance was strong again in all regions
- U.S. revenues were \$18.7B, up 21% y-over-y
- EMEA revenues were \$12.4B, up 20% y-over-y in both reported and constant currency terms, with a slight headwind primarily from the euro
- APAC revenues were \$6.1B, up 29% vs. last year and up 32% in constant currency, reflecting weakness of the Australian dollar
- Other Americas revenues were \$2.2B, up 16% y-over-y and up 26% in constant currency, reflecting weakening of the Brazilian real and the Argentine peso

### ***Cost of Revenue***

- On a consolidated basis, total cost of revenues, including TAC, which I will discuss in the Google segment results, was \$17.9B, up 26% year on year
- Other cost of revenues on a consolidated basis was \$10.5B, up 34% y-over-y, primarily driven by Google-related expenses

### ***Acquisition Costs***

- The key drivers were, first, content acquisition costs primarily for YouTube, mostly for our advertising-supported content in what is a seasonally strong quarter for YouTube, but also for our newer subscription businesses, YouTube Premium and YouTube TV, which have higher CAC as a percentage of revenues; second, costs associated with our data centers and other operations, including depreciation; and third, hardware-related costs for our Made by Google and Nest family of products

### ***Operating Expenses***

- Operating expenses were \$13.2B, up 27% y-over-y
- The biggest increase was in R&D expenses, with the larger driver being head count growth, followed by the accrual of compensation expenses to reflect increases in the valuation of equity in certain Other Bets
- Growth in sales and marketing expenses reflect increases in sales and marketing head count, primarily for cloud and ads, followed by advertising investments, mainly in search and the Assistant
- The growth in G&A expenses reflects mostly increases in head count

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- Stock-based compensation totaled \$2.3B

### ***Headcount***

- Headcount at the end of the quarter was 98,771, up 4,399 from last quarter
- Consistent with prior quarters, the majority of new hires were engineers and product managers
- In terms of product areas, the most sizable head count increases were in cloud for both technical and sales roles

### ***Operating Income and Tax Rate***

- Operating income was \$8.2B, up 7% vs. last year, for an operating margin of 21%
- Other income and expense was \$1.9B, which includes \$1.3B of unrealized gain related to a non-marketable debt security investment
  - We provide more detail on these line items within OI&E in our earnings press release
- Our effective tax rate was 11.2% for Q4, reflecting a discrete benefit due to the reversal of an accrual made as a result of updated guidance associated with the U.S. Tax Act
- Net income was \$8.9B, and earnings per diluted share were \$12.77

### ***CapEx and Operating Cash Flow***

- Turning now to CapEx and operating cash flow, cash CapEx for the quarter was \$7.1B, which I will discuss in the Google segment results
- Operating cash flow was \$13B, with FCF of \$5.9B.
- We ended the quarter with cash and marketable securities of approximately \$109B.

## ***Segment Results***

### ***Google Segment***

- Let me now turn to our segment financial results, starting with the Google segment
- Revenues were \$39.1B, up 22% y-over-y
- In terms of the revenue detail, Google sites revenues were \$27B in the quarter, up 22% y-over-y
- In terms of dollar growth, results were led again by mobile search, with a strong contribution from YouTube, followed by desktop search

### ***Revenue***

- Network revenues were \$5.6B, up 12% year on year, reflecting the ongoing momentum of AdMob and Google Ad Manager
- Other revenues for Google were \$6.5B, up 31% y-over-y, fueled by: cloud, hardware and Play
- We continue to provide monetization metrics in our earnings press release to give you a sense of the price and volume dynamics of our advertising businesses

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### ***Acquisition Costs***

- Total traffic acquisition costs were \$7.4B or 23% of total advertising revenues and up 15% y-over-y
- Total TAC as a percentage of total advertising revenues was down y-over-y, primarily reflecting a favorable revenue mix shift from network to sites
- The increase in the site's TAC rate y-over-y was driven by the ongoing shift to mobile which carries higher TAC, followed by changes in partner agreements, offset by the seasonally higher proportion of YouTube advertising revenues in Q4

### ***Network TAC Rate***

- In Q4, the network TAC rate declined year on year, primarily due to a revenue mix shift within our programmatic business
- Google stock-based compensation totaled \$2.1B for the quarter, up 22% y-over-y
- Operating income was \$9.7B, up 13% vs. last year; and the operating margin was 24.8%
- Accrued CapEx for the quarter was \$6.8B, reflecting investments in office facilities, data centers and servers

### ***Other Bets***

- Let me now turn to and talk about Other Bets
- I'll cover results for the full-year 2018 because it remains most instructive to look at the financials for Other Bets over a longer term horizon as we've discussed on prior calls
- Results for the quarter are in our earnings release

### ***Revenue***

- For the full-year 2018, Other Bets revenues were \$595mm, up 25% vs. 2017, primarily generated by Fiber and Verily
- Operating loss for Other Bets was \$3.4B for the full-year 2018, vs. an operating loss of \$2.7B in 2017
- Other Bets accrued CapEx was \$181mm, down from \$493mm in 2017, primarily reflecting investments in Fiber

### ***Accomplishments***

- Key recent accomplishments include, in December, Waymo launched Waymo One, which enables participants to use its app to hail and pay for rides
- Also, Verily recently announced \$1B investment round led by Silver Lake as it advances on plans that are complementary and additive to its current life sciences portfolio
  - That investment, of course, was in addition to the \$800mm it raised from Temasek previously

### ***Priorities and Longer Term Outlook***

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### ***Revenue***

- Let me close with some observations on our priorities and longer term outlook
- First, with respect to revenues
- Our 23% revenue growth in 2018 was powered in particular by the ongoing benefit of innovation in our sites business
- With eight products with more than 1B users each and more people coming online every day, we remain excited by the opportunities to continue to create valuable experiences for users around the globe
- In particular, we see significant ongoing potential to apply our machine learning capabilities across our businesses

### ***Advertising Business***

- In our advertising business, machine learning has enabled innovation in advertisers' ability to match consumer intent and to bid more effectively for improved ROI.
- It has also enhanced the ability of smaller businesses to benefit from advertising on our platforms
- Machine learning is also driving differentiation for newer Google businesses, like cloud and hardware, as well central to a number of Other Bets, most notably Waymo and Verily

### ***User and Advertiser Experience***

- Looking ahead, a couple of things to note
- First, as we've said many times, we continuously work to enhance the user and advertiser experience
- Because we make changes with the focus on the best interest of users and advertisers over the long-term, the timing of the introduction of new experiences, particularly in search advertising, can vary, which can result in an impact on quarterly year-on-year growth

### ***FX Tailwind***

- Second, during 2018, the FX tailwinds in H1 turned to headwinds in the third and fourth quarters, in line with the strengthening of the U.S. dollar
- Based on the continuing strengthening of the U.S. dollar, we expect a headwind to reported vs. fixed FX results in Q1 in contrast to the favorable impact of FX in Q1 2018

### ***Investments and Profitability***

- Turning to investments and profitability
- In terms of gross margin, the biggest component within cost of revenues remains our traffic acquisition costs, reflecting our strong revenue growth in mobile search and the fact that mobile search carries higher TAC than our desktop business
- As we've discussed on prior calls, while the pace of year-on-year growth in sites' TAC as a percentage of sites revenues slowed after Q1 2018, we do expect the sites' TAC rate to continue to increase year on year, reflecting ongoing strength in mobile search

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### ***OpEx***

- Within OpEx, we remain focused on prioritization in order to optimize resources for longer term growth in sizable markets
- You'll see us continue to support our priority areas with increased head count, which will remain concentrated in R&D, although we expect the growth rate to moderate in 2019
- In 2018, we also saw continued progress on our goal to nurture new businesses outside of Google, our Other Bets, with the model of independents
- While I've said previously that there is no monolithic approach to how the Other Bets execute against opportunities, a shared principle is aligning employee interests with the long-term value creation by these companies
  - Since inception, this has been an important part of our approach at Google, with stock grants comprising a meaningful component of overall compensation across our employee base

### ***Compensation Expenses***

- We're increasingly following that approach in the Other Bets, with compensation programs that align employee and company interests
- You've seen the impact of some of those programs in Q4 as we accrued compensation expenses to reflect increases in the valuation of equity in certain Other Bets
  - While these expenses will recur, the timing of valuation events is unpredictable and can vary between bets, which can affect quarterly comparisons

### ***Capital Allocation***

- Finally, on capital allocation, our primary use continues to be to support organic growth in our businesses, followed by retaining flexibility for acquisitions
- After taking these needs into account, our board has authorized the repurchase of up to an additional 12.5B of our Class C capital stock

### ***CapEx***

- With respect to CapEx, we continue to invest in both compute requirements and for office facilities, although we expect the CapEx growth rate in 2019 to moderate quite significantly
- In conclusion, 2018 was another great year with tremendous ongoing opportunity ahead of us

## **Sundar Pichai**

### ***Q4 Highlights***

#### ***Opening Remarks***

- Last year, we set out to bring the benefits of AI to everyone through our products, and I'm proud of the tremendous progress we made towards that goal



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- From Smart Compose and Gmail, to the new Google News experience, to call screening on the Pixel and improving the overall safety of our products, AI is helping people get things done every day
- Beyond our products, AI is also helping us drive our mission forward at the scale we couldn't have imagined just a few years ago
- Google AI lead, Jeff Dean, recapped the results of our efforts in a great post on our AI blog, like using AI to better detect the spread of breast cancer or providing flood victims with real-time information in a crisis
  - I encourage everyone to check it out
- We also launched the Google AI Impact Challenge to help non-profits find ways to use AI to solve social and environmental problems

### ***Google Assistant Hardware and Cloud***

- In addition to our progress in AI, we saw great traction across newer areas, like the Google Assistant hardware and cloud
- And our core areas such as Search, Maps, News, YouTube and our computing and advertising platforms continue their strong momentum
- Everything we do at Google is united by the mission of making information accessible and useful for everyone
- Providing accurate and trusted information at the scale the Internet has reached is an extremely complex challenge and one that is constantly getting harder
  - But we have 20 years of experience in these information challenges, and it's what we strive to do better than anyone else
- As we do this, we feel a deep sense of responsibility to do the right thing and are continuing to build privacy and security into the core of our products, keeping users' data safe and secure with the industry's best security systems and giving people better and clearer controls
- You'll see us continue to do a lot more here in 2019

### ***Video and Advertising Platform***

- Today, I'll start by sharing some of the new ways that we are working towards our mission, then I'll give an update on our video and advertising platforms, followed by the latest on our hardware and cloud efforts
- And I'll close with a few thoughts on our investments around the world

### ***Google Assistant***

- First, advancing our mission of making information accessible and useful
- The Google Assistant is a great example of how we help people throughout the day, and we demonstrated that at CES last month with lots of exciting new partners and features, from the Lenovo Smart Clock that wakes you up in the morning to real-time navigation that helps during your commute to a built-in interpreter that translates conversations across dozens of languages on Google Home
- And speaking of languages, over the past year, the Google Assistant expanded from 8 languages and 14 countries to nearly 30 languages and 80 countries
- In that time, the number of active users has quadrupled

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- As we add more partners, devices and capabilities, the Google Assistant will only get better and more helpful

### ***Activity Cards***

- There's a lot of great progress in other areas too
- Last month, we announced the launch of activity cards in search
- Now, when you search for a topic that you've previously explored, you can quickly see where you've already been and pick up where you left off
- Thanks to our strengths in AI in search, Google Lens uses your smartphone camera to help identify more than 1B products
- So if you see an item that you like, Lens can show you similar designs along with useful information like product reviews
  - We continue to see great momentum across our computing platforms, Android and Chrome
- In Q4, we announced that Android will officially support foldable phones, with partners like Samsung introducing their first foldable devices this year

### ***Android Auto***

- We see continued traction with manufacturer adoption of Android Auto
- We recently announced new media and messaging features to significantly simplify and improve the car dashboard experience
- And building on the speed, simplicity, and security of Chrome OS, partners like Asus and HP introduced a slew of great new consumer and enterprise Chromebooks last month at CES

### ***YouTube***

- Now, let me provide an update on our video and advertising platforms, starting with YouTube
- We are seeing great traction in some of our newer experiences on YouTube
- YouTube Music and YouTube Premium are now available in nearly 30 countries, up from 5 countries at the start of 2018
- Last month, YouTube TV announced that it has expanded nationwide to cover 98% of U.S. households, with the rest to follow shortly
  - YouTube continues to invest in its thriving community of creators and build great features for its nearly 2B monthly logged-in users
- For instance, in Q4, we expanded access to tools like stories and community posts that strengthen the connections between fans and creators

### ***Newest Tools***

- One of our newest tools, Premieres, is a breakout hit



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- Ariana Grande's premiere of her official music video for Thank U, Next in November holds the record for biggest music video debut in YouTube history, earning over 55mm views in its first day
  - We are driving revenue to the YouTube creator community from established channels to newly emerging ones
- The number of YouTube channels with more than 1mm subscribers nearly doubled in the last year, and the number of creators earning five or six figures grew by more than 40% y-over-y

### ***Learning and Investments***

- A big priority for YouTube in 2019 is to continue our work to quickly find and remove content that violates YouTube's content guidelines
- It's an important challenge
- And with advanced machine learning and investments in human reviewers, we are making continued progress

### ***Advertising Business***

- Now, I'll touch on some of the recent highlights of our advertising business, which continued to go from strength to strength
- Recently, Warner Bros. embedded the first full-length film with an ad on YouTube and reached a record number of people, over 17mm users in a single day
- Viewers who watched the trailer for Lego Movie 2 on Black Friday were served the franchise's original film for free within the ad
  - It's a great example of how advertisers continue to delight users on YouTube
- Performance advertisers love TrueView for Action, YouTube's direct response offering
- Since the product launched in March 2018, over 30% of the advertisers who use TrueView for Action were new to buying video ads on YouTube

### ***Google Ad Manager***

- In Q4, we also announced a global strategic ad tech relationship with The Walt Disney Company across their entire portfolio of brands and properties
- With Google Ad Manager as its core platform, Disney will be able to sell across its digital properties seamlessly on the web, in mobile apps, through connected TVs, and even during live events

### ***Shopping Tools***

- Our shopping tools were also front and center during the holidays, helping retailers reach people during the busy holiday shopping season
- In fact, the number of shopping daily active users on google.com during the holidays doubled compared to last year
  - Thanks in part to new features like product list modules that showcase the most popular products across the web

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- Small retailers are also benefiting from automated bidding solutions, like smart shopping campaigns, which now has more than 20,000 live merchants, impressive progress since launching in April

### ***Hardware Efforts***

- Now, on to our growing hardware efforts, during the holiday season, our newest lineup of Made by Google devices topped many of best of 2018 lists
- The response from shoppers was equally positive
- It was another record year for our Google Home family of devices, with millions sold this holiday season
  - They're helping people easily get things done around the house
- For example, people used Google Home devices to cook over 16mm recipes this holiday season, 1mm on Christmas Day alone

### ***Google Home Devices***

- Our newest smart displays were particularly popular
- One out of every seven Google Home devices activated over the holiday season was a Google Home Hub
- In Q4, we launched significant advances in computational photography in our Pixel 3, with features such as Night Sight for low-light photos. We also expanded availability to four more countries, Japan, France, Ireland, and Taiwan

### ***Cloud Business***

- And finally, our growing cloud business, I want to thank Diane Greene for her leadership over the last three years
- Google Cloud is a fast-growing multibillion-dollar business that supports major Global 5000 companies in every important vertical with a robust enterprise organization
  - This was not the case just three years ago
- What Diane and her team accomplished is phenomenal
- Now, Diane's work is done and she has handed the reins to Thomas Kurian; and I'm thrilled to have him here as our new cloud leader
- Google Cloud closed out the year strong with momentum across the business
- Last year, we more than doubled both the number of Google Cloud platform deals over \$1mm, as well as the number of multiyear contracts signed
  - We also ended the year with another milestone, passing 5mm paying customers for our cloud collaboration and productivity solution, G Suite

### ***Financial Services***

- Our focus on helping customers digitally transform their businesses is paying off
- We continued to see strong growth in all our major geographies and industries this quarter

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- In financial services, we signed agreements with two of the top financial institutions in the U.S. to help them transition their business to Google Cloud with our highly secure solutions

### ***Retail Performance***

- In retail, brands like Bed Bath & Beyond, DSW, and Ulta Beauty are using our cloud to manage data and provide more personalized experiences to consumers
- In media and entertainment, The Telegraph in the UK is going all-in with the Google Cloud because of our data and machine learning expertise
- To support our global growth, in Q4, we launched our 18th Google Cloud region and announced plans for a new region in Jakarta

### ***Europe***

- So as you can see, we are investing in the many incredible opportunities across our business
- We're also investing in communities around the world and right here at home
- I was recently in Europe opening up our new office in Berlin, which will help us more than double the number of Googlers who work there
- Across Europe, we have invested more than €4.3B in five data centers since 2007

### ***New Data Center***

- And in Q4, we announced a new data center coming in Denmark
- In all, it's estimated that these data centers have generated more than €5.4B in GDP over the last decade
- Of course, the amount generated by our creator, publisher, and app developer partners across the region is orders of magnitude larger

### ***Investments***

- We also continue our substantial investments throughout the U.S
- Last year, we made significant investments in new and expanded office space
- In Q4, we opened the doors to our new office in Detroit and announced that we'll be investing over \$1B in capital improvements to establish a new campus in New York City, which will begin to open in 2020
  - We're also continuing to invest in data center construction and expansion
- It is an important long-term investment that lay the groundwork for our future computing needs, primarily to accelerate machine learning across our businesses, but also to support the opportunities we see in cloud, search, ads, and YouTube
- More than 20 years in, there is still tremendous opportunity for Google to help people save time, learn new things, grow their businesses and build stronger communities
  - I want to thank every Googler around the world for making 2018 a great year for users and our business

## **QUESTION AND ANSWER SECTION**

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**<Q - Eric J. Sheridan>**: Two, if I could. Sundar, on YouTube, you now have a number of brands in the marketplace between YouTube Premium, TV, YouTube Music. How are you thinking about positioning those brands against the global opportunity, especially in mobile to consume media on a global scale? And how are you positioning those brands for the opportunity?

And then, Ruth, wanted to come back to a comment on revenue vs. expense with respect YouTube. It sounds like you called out YouTube as strong in the quarter on the revenue side, but is depressive on the expense side. Was that because of license content for things like Music and YouTube TV? What is ad splits? How should we think about what the drivers were there and how they're permanent vs. seasonal in Q4? Thanks so much.

**<A - Sundar Pichai>**: Thanks, Eric. On the YouTube question, of course, our core effort is around the main YouTube product, and that is what works its scale globally across the world. And we are seeing continued engagement, and it's doing very well. We are committed to making sure if there is a premium experience on YouTube, delivering the content people would want; and YouTube Music is an important part of that as well. So we are investing in both.

As you know, YouTube TV is U.S.-only and we are definitely – it's an exciting product. It's differentiated and has longer run value for us because it brings our advertising products together, including being able to sell it across TV. So we're clearly investing in areas where we see opportunity. We are pretty thorough about making sure our investments deliver growth on the other side. And so, we monitor it with metrics, be it engagement and revenue growth, and we see a lot of opportunity here.

**<A - Ruth Porat>**: And then in terms of revenue and investments in YouTube, overall, as Sundar has said, where YouTube is continuing to benefit from the secular change in the way users are consuming content and that's reflected in strong revenue growth. Brand advertising does remain the largest part of the business. It's grown at a strong pace. And as I said in opening comments, we're particularly excited about the significant growth in direct response. Both TrueView for Action and app promo formats are delivering great value for users and advertisers, and that's driving growth across regions and channels.

In terms of the expenses, I think what you're referring to is within other cost of revenues, the primary driver in Q4 was the increase in content acquisition costs due to YouTube growth, and that's both for ad supported content in what is typically a seasonally strong quarter and also for our newer subscription businesses which do have higher CAC as a percentage of revenue. We're excited about the growth we're seeing here.

**<Q - Anthony DiClemente>**: I have one for Ruth and one for Sundar. Ruth, if I look at the segment operating losses for Other Bets, they were higher both in Q4 and for the year, 2018 over 2017. Is it safe to assume that's investments at Waymo? Or can you just flush out a little bit more for us if possible were there Other Bets besides Waymo which were worthy of callout in terms of greater or decreasing investment, that would be great?

And then for Sundar, I'm just wondering if you could provide us any commentary about how growth at cloud is going? Any milestones? Talked about the investments there – Ruth did, I think, in terms of head count growth in technical and sales roles. And for the new leadership that you mentioned, what are the things that Thomas Kurian can kind of do at cloud to accelerate the next phase of growth in that business? Thank you so much.

**<A - Ruth Porat>**: So in terms of the investment levels in Other Bets, the major point is that we're investing across Other Bets commensurate with what we think is required kind of looking out at the opportunity set for each one, and we go through a regular process with weekly business reviews and quarterly board reviews and try and calibrate the appropriate pace of investment. In terms of the increase this quarter, as I indicated in the opening comments, we accrued some comp expenses for a number of bets; and that was really to reflect increases in the valuation of equity and certain Other Bets.

**<A - Sundar Pichai>**: On cloud, one of the things that was evident towards the end of last year is now our ability to win very large customers, Global 5000 companies with multi-year contracts. And so, that's definitely something we want to focus on. I think Diane and Thomas have been working closely on a transition with a lot of continuity. And you'll continue to see us. It's very clear to us that our product offerings are ready and differentiated.

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And so, we want to invest and scale our go-to-market, both in terms of direct sales and our channel partnerships. And maybe you will see us focus more on areas where we're clearly seeing returns, be it the geographic regions. We care about the six main verticals, where most of the momentum is; and within our product offerings, the five major areas where we've clearly defined product with differentiated features too. But I'm excited at the traction we are seeing. We're getting large wins and look forward to executing here.

**<Q - Douglas T. Anmuth>**: Just wanted to ask two. First, if you think about the strong Google sites growth, 22% FX neutral, can you just help us understand some of the mobile search innovations that you think are really driving things here beyond some of the just underlying secular strength with a particular focus perhaps on the retail channel and just how you're thinking about the opportunities there?

And then second, Ruth, just wanted to go back to your comment on OpEx. Just wanted to clarify. Were you saying that head count growth specifically you think will moderate in 2019 or are you talking about overall CapEx spending? Thank you.

**<A - Sundar Pichai>**: Doug, on the first one, obviously, we have thousands of engineers working on continually launching search improvements. I think, for me, a lot of this has been the clear hard work that's gone into making sure search on mobile works really, really well, removing friction where we can, constantly working to get the answers a bit quicker and faster, and making them more relevant. So to me it's more a set of a continual innovation mentality that we've had there for a long time, and that's really working at scale.

**<A - Ruth Porat>**: And then the specific comment, I think you're referencing is, I was pointing to head count growth. We are continuing to hire to support growth opportunities, particularly hiring engineers and product managers in Google and continuing to support growth in cloud. And what I was just trying to draw out was we will continue to hire, but the year-on-year growth rate will moderate there.

**<Q - Heather Bellini>**: I had a follow-up to Anthony's questions on cloud. It doesn't seem like you want to share an update on the revenue run rate. But I was wondering if maybe you could share with us what you're seeing in terms of y-over-y growth rates? And in particular, are they growing faster than what the competitors disclosed in their public results. Just maybe that will think about the pace of growth in your cloud business?

And then secondarily, I was just wondering if you can give us a sense of the types of workloads – if there's any commonality to the types of workloads you might be running more frequently than not? Thank you.

**<A - Ruth Porat>**: So in terms of growth, cloud does continue to deliver sizable revenue growth, driven by GCP; and GCP does remain one of the fastest growing businesses across Alphabet. As Sundar has said, we've doubled the number of GCP contracts greater than \$1mm. We're also seeing early nice uptick in the number of deals that are greater than \$100mm and really pleased with the success and penetration there. At this point, not updating further.

**<A - Sundar Pichai>**: And, Heather, I think, maybe specifically a couple of examples. There is – definitely, we see clear strength in data management and analytics, so we can take, for example, in retail or if you take someone like the telegraph, those very important factors; application platform, so our ability to help customers deploy cloud-native applications has been a differentiator of customers like Unity, Ubisoft, et cetera.

And multi-cloud ability to run cloud services across clouds on-prem turns out to be very important for global multi-national companies like HSBC. So we do see a wide variety of stuff. We are clearly focused on infrastructure being an application platform, data management and smart analytics, and of course with G Suite productivity and collaboration. So that's the core areas we are investing in from a product and a go-to-market standpoint, and we are seeing great traction there.

**<Q - Brian Nowak>**: I have two. Just first wanted to go back to YouTube. Very strong quarter it sounds like on branded advertising and now some of these new direct response ads. I was curious, Sundar, as you think about with an innovation focus what do you see as being one or two of the biggest opportunities to further improve the quality or the efficacy of the ad product you provide for advertisers on YouTube from here?



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And then, Waymo, you got a couple of milestones throughout the last three to six months. Maybe talk us through how you see the next one or two big factors that you're really focused on ensuring that Waymo becomes what it could be?

**<A - Sundar Pichai>**: On YouTube, I still think we are in early days of making sure YouTube is a better platform for direct response and TrueView for Action is still early. We see great traction, but I think there's a lot more to do. And I think we had a set of features which we launched last year to make sure it works better. But I think there's a lot more to do.

Long run I think for me, YouTube is a place where we see users not only come for entertainment, they come to find information; they're coming to learn about things, they're coming to discover, to research. And so being able to match that intent over time in a way that we can bring the right value for our users and advertisers I think is a long-run opportunity. And we are taking all the right foundational steps to realize it.

**<A - Ruth Porat>**: And in terms of Waymo, as you know well, we are intently focused on safety first and ensuring a great user experience, and that's why we're expanding methodically. We are pleased that we've continued to broaden out our service in the Phoenix area, and we're focused on expanding both the number of riders and the geographic reach around Phoenix.

In addition, we're having conversations with a number of other interested cities, and we are continuing to explore applying our technology for logistics and deliveries and for personal use vehicles and for last-mile solutions for cities, so continuing to execute as we've described previously.

**<Q - Mark Mahaney>**: Two questions. First, Ruth, could you just provide a little more color on the R&D expense build-up, anything unusual in there? Just comment on the cadence of that.

And then, Sundar, on hardware, it's been a multiyear effort. It seems like it accelerated. There's a series of these new products. We tried to do a report on them to make sure we understood them. Could you talk about how the strategic and maybe the synergistic impacts that you're seeing of hardware on the rest of Google's business, on the rest of Alphabet's business, and do you think that it's still early days? And maybe paint a picture of how significant those synergies could be. Thank you very much.

**<A - Ruth Porat>**: So starting with R&D, the main driver is our ongoing investment in engineers, in particular in Google; and then, as I said, the sizable increase in accrued comp for Other Bets. And just to build that out a bit more, I'll give you a bit more color. In certain Other Bets, employees are compensated through equity-based programs, and that's because we believe that this alignment of interests is valuable. We do assess valuation on an ongoing basis. And at a minimum, we do a formal valuation assessment once every 12 months or when there's a significant event. And what you're seeing in Q4 is the impact of higher valuation in certain Other Bets.

And as we've talked about previously, a goal with the Alphabet structure is to enable us to build new businesses that would make a positive impact and create long-term value. And it's still early days. We're very excited about the opportunities we see. And so what you're seeing is the impact here of valuation. The way we approach it is very consistent with the way startups are typically valued, and that includes technical progress and a range of other items.

**<A - Sundar Pichai>**: And, Mark, on hardware, obviously, we are working hard to offer the best Google experience we can, bringing together AI software and hardware. And you are right that it does have a lot of synergistic value. But at the stage where we are in, the main way we do that today for our core products is by using hardware to drive where the rest of the computing ecosystem is, and so we get a very leveraged effect there.

But over time, as we scale up our hardware efforts and do it thoughtfully so, it definitely – when I look at the kind of experience we can deliver, for example, if you look at something like the Google Home Hub and how it delivers a nice experience across search, Assistant, and YouTube and photos when you want it, you can definitely see the glimpse of the future. And so we are investing to realize that.

**<Q - Steve D. Ju>**: Okay. Sundar, just picking up on the AI for everyone team you've been highlighting at I/O as well as other venues, our conversations with advertisers suggest that products like Smart Bidding are becoming a pretty increasingly popular tool to add to their bidding strategies. But how has the pickup been among the SMBs, especially



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among the local advertisers? Do you think you can target that market without a sales force?

And secondarily, as we talk of two companies transitioning to the cloud, there's increased talk of collecting data, dealing with data analytics, as well as analyzing all that data to help their decision-making process. So from your standpoint running Google, do you feel like the current technology you have at your disposal is sophisticated enough to keep up with all of the needs for you to run the company as you collect all the data from across of the Internet? Okay, thanks.

**<A - Sundar Pichai>**: I think two questions. On your first question around using machine learning to help serve advertisers better and be able to reach newer advertisers, SMBs and local advertisers, I definitely think you highlight an exciting opportunity. Whenever we have done work like – be it last year or the last couple of years through universal app campaigns or Smart Shopping campaigns last year, responsive search ads, those are all great examples of where we brought ML. And with that, we made the process much easier for advertisers of all sizes, and we see an impact. So I think it's a natural extension for us to continue working in that direction, and that will help us reach SMBs and local advertisers better over time. So I do think that's a good opportunity.

And on the second part of your question, I want to make sure I understand it. If you're asking about how we invest in our security as a company, I think it's a foundation of how we do everything for the past 20 years. And always we realize a deep responsibility that comes with being stewards of user's data. So everything we design is designed with privacy and security in mind. It's where some of our core investments go, be it securing our data centers, literally the practices we have across the company, the quality and talent in our security teams, and over time using AI itself to do all this well. So it's a core part of what we do, and we take it very, very seriously.

**<Q - Daniel Salmon>**: Sundar, in your review of some of the shopping products during Q4, you didn't mention Shopping Actions. And there were reports there that Walmart decided to leave the program recently, and I think there have been some public comments on social media from Googlers confirming that. So I'd just love to hear a little bit more about that. But maybe more broadly, the traction of Shopping Actions and in particular the price per sale metric that you rolled out with it during the holiday season.

And then, Ruth, just a quick one for you, if we could return to your prepared remarks, there were a couple of sort of things to keep in mind that you were highlighting. One was a FX going from a tailwind to a headwind. But just before that, you were talking about how new experiences can roll out over time to users. And I just wanted to clarify were you referencing an experience that's rolling out currently or just generally that that is a best practice in general for Google? Thanks.

**<A - Sundar Pichai>**: On Shopping, I think we launched Shopping Actions around, if I remember, March of last year and we have definitely seen a strong traction there. I think we've seen roughly a sevenfold increase in merchants in the program since we launched it. And just in Q4, we announced new partnerships with Best Buy, Nike, Sephora, as an example.

And in terms of Walmart, Walmart is one of our deepest partners and they remain a strategic partner across multiple businesses for us, including Google Ads. And we have efforts underway to work closer together with Shopping. But they are definitely a large partner who continue experimenting, and we'll support them in many ways. But I think overall, I'm excited about the efforts we are doing in Shopping, and you will see us focus more there on 2019. We see users come to Google a lot around key shopping moments, and we want to make sure we invest in that experience to get closer to what they want.

**<A - Ruth Porat>**: And then, on the second question, we've talked about this on prior calls. We've often talked about the fact that we have been and remain committed to long-term revenue growth through innovation. And the point I was trying to underscore is the timing and scale of the impact that's inherently difficult to predict. And so, it can be inconsistent from quarter-to-quarter. The main point is we're – in fact, we remain very excited about the opportunities for users and advertisers in particular building off of Sundar's comment as we apply machine learning to solutions.

**<Q - Colin Alan Sebastian>**: Two quick ones for me. First on Project Stream and YouTube TV. Just wondering how important it will be to invest in original contents, as well as how you might view the rollout of 5G as catalyzing

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consumer adoption of these services? And then on the Discover feed, I know that's still pretty new, but curious if you had any color on usage and engagement to-date? And if there's any way you expect to monetize that feed in the near future? Thank you.

**<A - Sundar Pichai>**: On Project Stream, being able to deliver gaming with the kind of real-time requirements, the low latency requirements, it's definitely – for us, it's an important computing advance. We think it'll help us drive the newer computing platforms we are working on. And I do think services like that will be a point of inflection as 5G rolls out as well. So I think it is a virtuous cycle. So we are excited. Early feedback on our Project Stream experience has been super positive. And so, we are looking to build upon that and you will see us do more there in 2019.

On Discover, I think traction has been – for us, we measure user engagement and satisfaction and happiness on anything new we do, and the metrics have been really strong. And we offer the best experience today on our products like Pixel made by Google products, and we are looking to scale that up to reach more users. But we think we have a strong product there, and I think it's very synergistic to search experience. And so, we are looking to bring the best of both to our users and you'll see us reach more users in 2019.

**<Q - Justin Post>**: A couple questions. First, looks like Google core margins were down about 3 points and what was an easier comp. So just wondering if you can give us any thoughts on how the core advertising business is doing in there. We know there's a lot of investment in cloud and hardware and YouTube TV, but just would like to get an update on the health of the advertising business margins and any thoughts on if you'll ever do segment disclosure?

And then, the second question is just on the cloud strategy, there's been a pretty big leadership change. Just wondering if there's any new strategies or new things you'll be doing this year with the cloud related to the management change. And I look forward to the cloud conference in April. Thank you.

**<A - Ruth Porat>**: Thanks. So in terms of overall Google margins, I think the main point you're seeing in the margins is we continue to see tremendous opportunity across Google. And so, we're investing to support long-term revenue and earnings growth.

We've talked a lot on this call already about the importance of machine learning, and it is a key component of incremental investment, particularly in CapEx for technical infrastructure to support the existing businesses, but also the newer ones; and that's flowing through here. We've talked on prior calls that we're very mindful of the fact that CapEx turns into depreciation, which is why I single this out.

We're continuing to see tremendous opportunity in the ads business, search and ads businesses. And beyond machine learning, we're further investing to continue to enhance the experience for users and advertisers, and that's across mobile desktop and YouTube.

So for example, a big priority in 2018 was expanding the availability of content for what we call the next billion user markets, which are, for us, a really important area. We're excited about the growth and the opportunity to deliver experiences across markets. We're also investing to enable more visual ways of finding information such as photos and videos. And then, we're investing aggressively in our newer businesses within Google, particularly cloud and hardware, as Sundar has already said.

So what you're seeing reflected through in the margins on the cost of revenue side is the impact of the product mix that we've talked about. A big part of that is the ongoing strength in YouTube. And then, on the OpEx side, investing in engineers in particular for Google; and as well as on the sales and marketing side, the increased head count to support, not just ads, but in particular cloud.

**<A - Sundar Pichai>**: And on the second question on cloud, I answered it around Anthony and Heather's question. But to add a little bit more color, it's the change in leadership, but it was a well-planned transition. And so, Diane and Thomas together planned 2019. And the big things you're going to see are a continued focus on Global 5000 companies. We are definitely seeing traction with large multi-year contracts, multi-million-dollar contracts there. So you'll see us focused there.

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We'll continue to invest in and expand our sales and distribution channels to meet customer demand. So that's going to be an important area for 2019. But mostly, being highly focused on the 15 countries, 6 industries and the 5 major solution areas that we think will have the most impact. And directing most of our resources towards those efforts is probably something you will see continued emphasis in 2019.

**<Q - Ross Sandler>**: Just two questions. First, there's a lot of discussion right now about the alternatives to Google Play and Apple's App Store for distribution. And some of the large developers are starting to come up with these workarounds around the App Store fees. So I guess just philosophically, how do you think about the 30%? Do you think that's the right long-term rate for Google Play?

And then, Ruth, coming back to the head count and CapEx growth moderating comments. So you had expenses growing well in excess of revenue for some time in the core Google segment, and 2018 was the lowest operating income growth since you started disclosing the segments. So are you just flagging this as a change in direction? Is this a material change or is this just a small amount of moderation in 2019? Thank you.

**<A - Sundar Pichai>**: On Google Play, obviously we do this at scale. Thousands of developers rely on it to safely and seamlessly distribute their game to billions of Android users worldwide. And we invest a lot in our infrastructure to continuously make sure their overall experience is safe and results in high engagement and – for the developers' [ph] pack (00:55:44). So I think there's a value exchange there and it's been the industry standard. And so, I think we'll continue down that path, but obviously always adapt to where the market is.

**<A - Ruth Porat>**: And then in terms of the pace of investment, I've already laid out the focus areas and our commitment to continue to invest to support long-term revenue and earnings growth. And just wanted to put a fine point on both CapEx and head count. So on CapEx, as I indicated in opening remarks, we do expect the rate of year-on-year CapEx growth will slow meaningfully. So with the scale of our business and with our focus on user experience, it does require CapEx. We are committed to continue to invest in CapEx to deliver on that.

In terms of the mix, we expect to see more of an uptick in 2019 in data center investments relative to servers. The point which you asked in your question, the year-on-year growth rate will moderate meaningfully. And then, in terms of head count, I was just trying to make clear that the growth in head count will moderate somewhat here just so there's no interpolation.

**<Q - Brent Thill>**: For Sundar, the cash position has doubled the last five years to \$109B; yet in the last four years, M&A has been right around \$3B, which is well below your peers. And I'm just curious that it seems like the core is very strong. But is there hesitation that you're seeing in terms of valuation or other factors that are playing into that relative to what your peers are doing right now?

**<A - Sundar Pichai>**: I think we've always approached M&A as – I think really we are always evaluating opportunities. We have a very high bar. And so, to me, it's been more about us finding the right fit rather than being constrained by anything in particular. But I do think it's always an important part of our strategy. And we've done great acquisitions in the past. Things like YouTube and Android were big acquisitions for us. And so, we continue to look for opportunities ahead.

**<Q - Brent Thill>**: And real quick for Ruth. Just the magnitude of spend, I think, goes back to what probably investors are most surprised by. And it sounds like from your perspective, you don't really look at the margin structure as having any floor; you're just looking at this as, as you said, there's tremendous long-term opportunity that you need to make these investments now. I think mainly you are just trying to search for a framework in how you think about this investment cycle we're in right now?

**<A - Ruth Porat>**: So the reason I started by laying out, I think, in response to the question on margins where we're investing and how we look at it, we are very focused on investing to support long-term revenue and earnings growth. We're very mindful of the CapEx impacts on FCF and earnings growth. And so, we're trying to get it right. Over-investing/under-investing, neither of those works for long-term value reaction. But we are very mindful of the pace here and trying to lay out with more specificity how we're looking at the opportunity set and making trade-offs where we can.

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