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**Alphabet Q3 2019 Earnings Call  
October 28, 2019**

**Candice (Operator):** Ladies and gentlemen, thank you for standing by and welcome to the Alphabet third quarter 2019 earnings call. At this time, all participants' lines are in a listen-only mode. After the speakers' presentation, there will be a question and answer session. To ask a question during this session, you will need to press star and then one on your telephone. If you require any further assistance, please press star and then zero. I'd now like to hand the conference over to your speaker today, Ellen West, Head of Investor Relations. Please go ahead.

**Ellen West, VP Investor Relations:** Thank you. Good afternoon, everyone, and welcome to Alphabet's third-quarter 2019 earnings conference call. With us today are Sundar Pichai and Ruth Porat. Now I'll quickly cover the Safe Harbor. Some of the statements that we make today regarding our business performance and operations, and our expected level of capital expenditures may be considered forward-looking, and such statements involve a number of risks and uncertainties that could cause actual results to differ materially. For more information, please refer to the risk factors discussed in our most recent Form 10-K filed with the SEC. During this call, we will present both GAAP and non-GAAP financial measures. A reconciliation of non-GAAP to 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](#). And now I'll turn the call over to Sundar.

**Sundar Pichai, CEO Google:** Thank you, Ellen, and good afternoon.

Q3 was another great quarter at Google, with strong revenue growth driven by mobile search, YouTube and Cloud.

We celebrated Google's 21st birthday this quarter. While our mission to organize the world's information and make it universally accessible and useful hasn't changed, we've evolved from a company that helps people find answers to a company that helps you get things done.

Since the beginning, we've always invested in tackling deep computer science problems that can have a significant impact on society. The chance to be part of these fundamental engineering challenges is why so many people want to work at Google. In just the last week, we've announced two significant advances.

First, powered by our long-term investment in AI, we dramatically improved our understanding of the questions people ask Google Search. It's the biggest leap forward for Search in the past five years. It's all possible because of a new type of neural-network based technique for natural language processing called BERT, which recognizes subtle patterns in language and provides more relevant results.

Second, we recently announced a major quantum computing milestone. I was extraordinarily proud to visit our team in Santa Barbara. To demonstrate supremacy, Google's 53 qubit

quantum machine, Sycamore, successfully performed a test computation in just 200 seconds that would have taken the most powerful supercomputers much longer time to accomplish. It's the "hello-world" moment we have been waiting for and represents a distinct milestone in our effort to harness the principles of quantum mechanics to solve computational problems.

Turning from quantum to the quarter.

Today, I'll talk about the momentum we saw across the business in the last three months.

First, Cloud. We saw customer momentum across multiple areas, under Thomas's leadership.

In September, we announced a landmark partnership with Mayo Clinic. Using Google Cloud to secure and store data, and understand insights at scale, Mayo Clinic will partner with us in many ways. Together, we'll work to transform patient and clinician experiences, identify new methods of diagnosing diseases, conduct clinical research, and find new models for delivering patient care.

National Australia Bank recently added Google Cloud to its multi-cloud strategy to help the company better use data and deliver new and improved customer experiences.

Deutsche Börse Group, the 4th largest stock exchange group worldwide, relies on Google Cloud to help them navigate the twin challenge of modernizing their digital operations, and addressing significant regulatory requirements.

Retailers are also turning to cloud solutions to help make the shopping experience as seamless and personalized as possible. For example, Macy's uses Google Cloud to streamline their operations from the distribution center to the shop floor.

Public sector customers are modernizing their IT systems with Google Cloud with great results. For example, the State of Arizona already has more than 36,000 employees using our products to increase productivity, efficiency and security. And this quarter, it further extended our relationship.

We continue to extend our cloud services through partners, including a new solution that enables customers to run VMware workloads on GCP for the first time.

We announced a cloud region in Nevada. When it launches in 2020, it will be our seventh cloud region in the U.S. We also announced a new cloud region in Poland, our seventh in Europe.

Turning to Google's products that people use every day. We are excited about new features launched in Maps, including detailed voice guidance while walking that will make it possible for people who have vision impairments or are blind to get around more easily, new tools that will allow users to see all of their flight and hotel reservations in one place, and another new feature that gives transit riders in 30 countries the ability to see ridesharing and biking options near their bus or train stop.

In Search, we made a number of improvements to make it easier for users to find key moments in videos, easily find products within images via Google Lens, and discover new podcasts.

Our hardware business is still in its early stages, but we are continuing to build the business and a portfolio of helpful products. Two weeks ago, we unveiled our new Made by Google product line-up, bringing together the best of hardware, software and AI.

Our new Pixel 4 and Pixel 4 XL are the first phones with Motion Sense. This allows users to use natural gestures to get things done - without touching their phone. The new Google Assistant now gives users the ability to switch seamlessly between apps – all by voice. And the new Pixelbook Go provides many of the great features of our premium Pixelbook, at a more affordable price point. We also unveiled the new, more powerful Nest Mini speaker and Nest Wifi.

Finally, the team is looking forward to launching Pixel Buds, our first truly wireless headphones, as well as Stadia, our streaming gaming platform, which will soon be available in the U.S., UK, Canada and throughout Europe. We are encouraged by the positive product reviews so far. With the holidays coming up, I think there's a gift for everyone on your list.

On to YouTube. Keeping YouTube safe for our users, creators and partners while preserving the openness of our platform is our top priority. This quarter, we continued to update our community guidelines and enforcement to protect users from harmful content, and we'll keep doing this work.

YouTube Music and YouTube Premium continued to expand globally, and are now available in 71 countries. In September, YouTube launched its new Fashion and Beauty destination, called YouTube/Fashion. It's designed to meet the growing demand from consumers for better ways to explore and connect with some of YouTube's biggest Fashion and Beauty creators.

And I want to emphasize that as we build all these helpful products, we're committed to giving users more control of their data.

This quarter, we extended one of our most popular features in Chrome and YouTube, called Incognito Mode, to Maps. We expanded our auto-delete controls to YouTube history. These controls already enable people to set their Location History and Web & App Activity to be deleted automatically after 3 or 18 months. And to protect everyone's safety online, we introduced Password Checkup. It's a new feature that tells users if any of their passwords are weak, if they've been reused across multiple sites, or if they've been compromised somewhere on the web.

Now, moving onto how we are helping advertisers.

We're bringing our strengths in machine learning to help advertisers build their ad campaigns. Machine learning-powered tools like Search auto-bidding are gaining traction. In fact, more than half of advertisers' Search spend is now optimized via full auto-bidding. We now have more than a million advertisers using Responsive Search Ads, an ad format we launched a year ago that uses machine learning to create the right ad for each search query. And our new video reach

campaigns allow marketers to upload multiple video ads into a single campaign. From there, we use machine learning to serve the most efficient combination of these ads to help brands reach audiences at scale.

This quarter, we expanded inventory for our very popular App campaigns to include new surfaces including YouTube Search, Display video ads and the Discover Feed.

We also launched YouTube Masthead Ads for TV, which enable advertisers to reach audiences right when they open the YouTube app on their connected TVs, one of its fastest growing screens.

It's also important for advertisers to have standardized measurement that's fair across all media, and that delivers insights in a way that fully protects users' privacy. We're making it easier for businesses to do just that. Our next generation of Google Analytics unifies web and app measurement reporting for the first time to help businesses understand which channel is driving the best results.

On a personal note, I was in Dallas in October, where I saw firsthand how important Google is in helping small and medium sized businesses grow. I got to visit Peacock Alley, a bedding and bath manufacturer in Dallas with 75 employees. They've been using Google Ads for over 15 years to help drive traffic to their stores. Their e-commerce has grown 52% in the past year. They credit the guidance Google Analytics provides as well as Google Shopping and Product Listing Ads for that growth.

This isn't the only way we help small businesses grow and thrive. Our Grow with Google program has helped train three million Americans in digital skills, including small business owners and entrepreneurs.

Just a few weeks ago, we announced that our IT Professional Support Certificate training course will expand to 100 community colleges. It's already helped tens of thousands of people pursue fast-growing, well-paying careers in IT support. I'm glad to see more community colleges offer this pathway to students.

Finally, to round out a busy quarter.

Sustainability has always been a core value for us, and I'm proud that we've been carbon neutral since 2007. In September, we announced the biggest corporate purchase of renewable energy in history. We are increasing Google's existing renewable energy portfolio by more than 40 percent. These purchases are happening globally, spurring the construction of more than \$2 billion in new energy infrastructure, including millions of solar panels and hundreds of wind turbines, across three continents. And at our hardware event, we announced that we're committing to roughly \$150 million in renewable energy projects in key manufacturing regions. Our hope is that this will spur even greater investments in sustainability.

So it's been a really great quarter.

A personal highlight for me was our “Take Our Parents to Work Day,” which we held in September at our main campus in Mountain View. It was great to see thousands of parents take such pride in what their kids are building!

I feel the same way. None of our work would be possible without our Googlers around the world. This quarter was another great example of the mission that brings us all together. Thank you.

Now, I’ll turn it over to Ruth.

**Ruth Porat, CFO Alphabet and Google:** Thank you, Sundar. In the third quarter, Total Revenues of \$40.5 billion, were up 20% year-on-year and up 22% in constant currency. Once again, our results were driven by ongoing strength in mobile search, YouTube and Cloud. I will begin with a review of the quarter on a consolidated basis for Alphabet, focusing on year-over-year changes. I will then review results for Google, followed by Other Bets, and conclude with our outlook. Sundar and I will then take your questions.

Details of Alphabet’s consolidated revenues by geographic region are available in our earnings press release.

Regarding our key expense lines, on a consolidated basis, total cost of revenues, including TAC, which I will discuss in the Google segment, was \$17.6 billion, up 23% year-on-year.

Other cost of revenues on a consolidated basis was \$10.1 billion, up 31% year-over-year, primarily driven by Google-related expenses. The biggest contributor again this quarter was costs associated with our data centers and other operations, including depreciation; followed by Content acquisition costs - primarily for YouTube, and mostly for our advertising-supported content, but also for our newer subscription businesses, YouTube Premium and YouTube TV, which have higher CAC as a percentage of their revenues. This line also includes the impact of hardware costs, primarily associated with our mid-tier Pixel 3a smartphones.

Operating expenses were \$13.8 billion, with headcount growth being the largest driver of year-on-year growth for both R&D and Sales and Marketing, which is reflected in both compensation and facilities expenses.

With respect to R&D, the growth was again driven by the addition of engineering talent, consistent with our focus on product innovation.

The increase in G&A year-over-year was primarily due to a \$554 million charge from our previously announced legal settlement in France.

Stock-based compensation totaled \$2.6 billion.

Headcount was up 6,450 from the second quarter and consistent with prior quarters the majority of new hires were engineers and product managers. In terms of product areas, the most sizeable headcount increases were again in Cloud, for both technical and sales roles.

Operating income was \$9.2 billion, up 6% year-over-year, for an operating margin of 23%.

Other Income & Expense, was a loss of \$549 million, which primarily reflects the impact of unrealized losses in marketable equity securities. As of September 30, the unrealized equity gain in the combined portfolio of marketable and non-marketable securities was \$5.8 billion. We provide more detail on the line items within OI&E in our earnings press release.

Net income was \$7.1 billion and earnings per diluted share were \$10.12.

Turning now to Capex and operating cash flow.

Cash Capex for the quarter was \$6.7 billion, which I will discuss in the Google segment results. Operating Cash Flow was \$15.5 billion with Free Cash Flow of \$8.7 billion. We ended the quarter with Cash & Marketable Securities of approximately \$121 billion.

Let me now turn to our segment financial results. Starting with the Google segment.

Revenues were \$40.3 billion, up 20% year-over-year. In terms of the revenue detail, Google Sites revenues were \$28.6 billion in the quarter, up 19% year-over-year. In terms of dollar growth, results were led again by mobile search, with a strong contribution from YouTube, followed by desktop search.

Network revenues were \$5.3 billion, up 8% year-on-year, continuing to reflect the performance of the primary drivers of growth within Network, namely Google Ad Manager, followed by AdMob.

Other revenues for Google were \$6.4 billion, up 39% year-over-year, once again fueled by Cloud, followed by a strong performance from Play.

Within Cloud, growth in GCP was once again the primary driver of performance with strong customer demand for our compute and data analytics products, complemented by ongoing growth in G Suite reflecting both new pricing and seat growth.

Within Play, performance was driven once again by growth in the number of active buyers. In addition the line reflects hardware which continued to benefit from the launch of our Pixel 3a mid-tier smartphones.

We provide monetization metrics in our earnings press release to give you a sense of the price and volume dynamics of our advertising businesses.

Total traffic acquisition costs were \$7.5 billion, or 22% of total advertising revenues, and up 14% year-over-year. Total TAC as a percentage of Total Advertising Revenues was down year-over-year, reflecting primarily a favorable revenue mix shift from Network to Sites. The Sites TAC rate increased year-over-year, primarily due to the impact of the ongoing shift to mobile, which carries higher TAC, partially offset by the growth in TAC-free Sites revenues, primarily from YouTube. In Q3, the Network TAC rate declined year on year, primarily due to a favorable product mix shift.

Google Operating income was \$10.9 billion, up 14% versus last year, and the operating margin was 26.9%.

Google Accrued Capex for the quarter was \$7.2 billion, reflecting investments in office facilities and data centers, followed by servers. Investments in office facilities included the \$1 billion acquisition of a portfolio of buildings in Sunnyvale and the purchase of two buildings to expand our presence in the Seattle area.

Moving on to the performance of Other Bets.

Revenues were \$155 million, primarily generated by Fiber and Verily. Other Bets had an Operating Loss of \$941 million.

I'll note a couple of key accomplishments in Other Bets.

At Waymo, we're extending fully driverless opportunities on a small scale to participants in our early rider program in Metro Phoenix. We're also testing long-haul truck driving on Arizona freeways. And we are continuing to test Waymo vehicles in various geographies, the newest of which is heavy rain testing in southern Florida. In addition, we have begun 3D mapping in Los Angeles.

And two weeks ago, Wing launched its first commercial drone delivery service to homes in Virginia in partnership with FedEx, Walgreens and local Virginia retailer Sugar Magnolia. Wing is now operating on three continents in early test deliveries.

I will sum up with a few observations on the quarter and our longer-term outlook.

Based on the strength of the U.S. dollar to date relative to the fourth quarter of last year, we expect continued FX headwinds again in the fourth quarter of 2019. As a reminder, foreign exchange headwinds affect both revenues and operating income given the majority of our expenses are in the U.S.

With respect to Revenues, we're pleased with the performance of our advertising business. As a reminder there is variability in year-on-year revenue growth rates from quarter to quarter. As we've often discussed, we manage our business for the long-term and not on a quarterly basis and we remain very focused on continuing to enhance the experience for users and advertisers over the long-term.

Within Other Revenues, in addition to continued strength in compute, Google Cloud saw substantial growth from data analytics as customers are seeing the benefits from implementing BigQuery. Cloud continued to see significant growth in each region globally.

Our new line-up of Made by Google Hardware was announced two weeks ago, with Pixel 4 hitting store shelves late last week. With the introduction of the Pixel 3a in the second quarter, we expect the seasonality of our hardware business to be moderated somewhat.

Turning to elements of our profitability.

With regard to Google Operating expenses, while headcount growth on an absolute basis in the third quarter was unusually high, reflecting the addition of new college hires, we do remain on

pace for headcount growth in 2019 to be in line with growth in 2018. Our investments in talent support innovation across our businesses and, in particular, support our ongoing momentum in Cloud.

Regarding Sales & Marketing expenses, as I've mentioned on prior calls, these expenses are typically more heavily weighted toward the back half of the year and tend to be particularly elevated in the fourth quarter to support the holiday season.

In Other Bets, we continue to invest meaningfully, and thoughtfully, for the long-term opportunities that we see.

Turning to capital allocation and capex. With respect to capital returns, consistent with announcing an increase in our stock buyback authorization last quarter to \$25 billion, we were pleased to step up repurchase levels by nearly 60% to \$5.7 billion in the third quarter.

In terms of capex, as a reminder over the last couple of years the split between technical infrastructure and office facilities has averaged approximately 70% to 30%. Due to the sizable purchases of office facilities we made in Q3, technical infrastructure accounted for only about 60% of total capex and continued to be more heavily weighted to data center construction than servers.

Looking forward, we anticipate the primary driver of Capex investment will continue to be our expected compute requirements, particularly to support ongoing demand for machine learning across our business, as well as for Cloud, Search and YouTube. At this scale of investment, we remain very focused on driving efficiency through fleet optimization and tight management of our supply chain.

In conclusion, we remain confident about the opportunities ahead.

Sundar and I will now take your questions.

**Candice (Operator):** Thank you. As a reminder, to ask a question, you will need to press star one on your telephone. To withdraw your question, please press the pound key. To minimize background noise, we ask that you please mute yourself once your question has been stated. Please stand by while we compile the Q&A roster.

And our first question comes from Eric Sheridan from UBS. Your line is now open.

**Eric Sheridan (UBS):** Thanks for taking the question. Maybe two, if I can. First, Sundar, a big-picture question, it feels like the concept of ambient computing was sort of prevalent at the Made by Google event recently. It started with sort of a bit of a shift in theme, from what I could tell, at Google I/O earlier this year. Can you just talk about what some of the key investments you want to make to capitalize on that opportunity over the medium to longer term and how you think Google and, maybe broader, Alphabet is positioned to capitalize on that and how it might show up at the product and services layer. So I guess maybe a three-part question of more of a bigger-picture nature. Thanks so much.

**Sundar Pichai, CEO Google:** Thanks, Eric. We are very excited by the vision of ambient



computing and evolving that. I think it's a continuity in the sense that, over time, computing should be more intuitive to users and computing should adapt to users, not the other way around.

And the foundations of all this is all the work we have done with our computing platforms to date and the successful consumer services and the developer platforms we have built. And I think that's the -- most of the investments there.

The phones will continue to be at the center of ambient computing for the future. So that's another important piece where we are already invested in.

I think as we expand beyond, and that's what the Made by Google family is focused on, products in your home, with our Nest family of products and wearables, which we do with Wear OS and so on. So supporting that ecosystem, so whether you are at home or on the go or at work, and making sure it works.

Our investments in AI across the company I think will end up playing a key role, AI and Assistant. I think they will be at the center of making sure we can anticipate what users want and serve them better.

**Eric Sheridan (UBS):** Great. Thank you.

**Candice (Operator):** Thank you. And our next question comes from Doug Anmuth from JP Morgan. Your line is now open.

**Doug Anmuth (JP Morgan):** Thanks for taking the question. Sundar, you talked about the new neural network techniques, talked about the biggest breakthrough in Search in years. Can you just help us understand if that's impacting kind of the advertising and monetization side of the business yet or how that can play out going forward? Thanks.

**Sundar Pichai, CEO Google:** Anytime -- maybe I'll answer it as BERT, which is the name of the technique we are using, and we have rolled it out in Search now. Obviously, anytime we can better make sense of queries, we can serve users better, our search quality goes up and people engage more. So it's part of a long run set of things we've been working on.

But this is one of our bigger breakthroughs in terms of helping improve the Search experience and search quality. And remember it will help us in a certain set of queries. There are many queries which are already working well, but it helps us capture nuance and help understand human context better.

And so I would just characterize this as a big improvement which improves search quality and creates that virtuous cycle by which people engage more. Of course, a lot of times we take the same techniques, and sometimes it makes sense on the ads side and the underlying machine learning techniques. And we'll deploy there as well.

**Candice (Operator):** Thank you. And our next question comes from Heather Bellini from Goldman Sachs. Your line is now open.

**Heather Bellini (Goldman Sachs):** Thank you so much. I just wanted to follow up on a couple of the comments you made about Cloud, Sundar. I was wondering if you can just give us some color on the size of your GCP backlog. And maybe even if you just talk about the trajectory and how that's changed over the course of the last year. And then you mentioned the strength and the uptake of BigQuery. I'm just trying to think through how we should think of the margin level of a service like this versus the traditional compute offerings where you have seen strength to date and just wondering if we start to see some positive mix-shift benefits as some of these premium products start to ramp more aggressively. Thank you.

**Sundar Pichai, CEO Google:** Thanks, Heather. Overall, I know we gave some visibility into our Cloud business, and we'll continue to do that periodically. And the momentum has been great. Obviously, ever since Thomas has come in, he has continued to invest across the board. We have definitely focused a lot on scaling up our sales partner and operational teams, and it's playing out well in this business. It's important for you to be in as many deal situations as possible and get those wins, which accrues over time. And so we are definitely seeing the momentum.

Analytics is a huge area of strength for us, and it's an area which Thomas has a lot of expertise in as well. And BigQuery is such a strong product, so it's a natural area we are seeing strength.

And my sense is, as we get -- if I look at the TAM -- the percentage of TAM for which we were eligible compared to two years ago to last year to now, that number is shifting aggressively due to either completing our product feature set or be it completing some of the certifications we need. And so I think there are several strong forward-looking indicators, and look forward to sharing more at the right time.

**Heather Bellini (Goldman Sachs):** Thank you.

**Candice (Operator):** Thank you. And our next question comes from Mark Mahaney from RBC Capital Markets. Your line is now open.

**Mark Mahaney (RBC):** Can I just ask you to draw a little bit more out on Google Maps. I know that's -- from Marketing Live earlier in the year, that seems like that's now at a stage where it's going to be better integrated into the -- I don't know, the purchase path or whatever. You're making it easier for small businesses to tap into what should be really nicely qualified leads. Just talk about the pace at which that -- the monetization of that or just the ad opportunities will be offered to small businesses. Thank you.

**Sundar Pichai, CEO Google:** In general, local is an important area for us, and we are continuing to invest in building an experience that connects merchants, advertisers, and users. Google My Business has been our major effort there. Today, millions of businesses reach and engage both through Search and Maps.

Specifically, in GML, we announced that we'll expand Local Campaigns. I presume that's what you're talking about. You know, it's still early. And, in general, we want to make it easier for advertisers, particularly SMBs, to come to Google and be able to reach users across our set of owned and operated properties, so be it Search, be it YouTube, be it Discover, be it Maps. And that's the way we envision that. And -- but small and medium business is a big area of focus,

and Maps represents a big long-term opportunity for us.

**Ruth Porat, CFO Alphabet and Google:** And just to add on there, given you referenced back to GML -- and I think we talked about this last quarter as well -- our view is that the products that were introduced at GML this year, like in previous years, they're rolled out in phases. They're adopted over time. And so we don't view the potential impact from this year's slate differently than the impact from products that were launched at previous events. And so just to kind of keep that in perspective.

**Mark Mahaney (RBC):** Thank you, Ruth. Thank you, Sundar.

**Candice (Operator):** Thank you. And our next question comes from Lloyd Walmsley from Deutsche Bank. Your line is now open.

**Lloyd Walmsley (Deutsche Bank):** Thanks. I wanted to ask another one about a new product you guys announced earlier this year at GML, and that was really Google Shopping, and moving that across some of the new -- different properties like YouTube and Image Search and Discover. Can you give us a sense for where you are in that migration? Kind of over what time frame should we be thinking about that? And then maybe just elaborate a bit on the long-term vision of moving Shopping functionality into properties like YouTube and how you think that experience will evolve. Thanks.

**Sundar Pichai, CEO Google:** In general, I think it's a great opportunity for us. We see tons of what I would call commercial user journeys across Google. Obviously, Search is an important area, Image Search, YouTube, Maps are all great surfaces by which I think users come with varying degrees of commercial interest, looking to discover and at times transact as well.

So, you know, we've started thinking much more holistically about what are those experiences and how can we make that better. That involves helping improve the discovery experience, but when people are interested in it, being able to be -- to make it easier to transact. So the equivalent of being signed in and being able to pay when you want and then, of course, fulfillment and logistics. So we are thinking through the end-to-end experience across all our surfaces and are investing. But I see the user interest, and it's an area where I think we have significant opportunities ahead.

**Ruth Porat, CFO Alphabet and Google:** And, again, these are still earlier stage, and it's -- we're excited about the longer-term impact. But just to, again, make it clear, we're just still in the earlier stages of testing.

**Lloyd Walmsley (Deutsche Bank):** Okay. Thank you.

**Candice (Operator):** Thank you. And our next question comes from Brian Nowak from Morgan Stanley. Your line is now open.

**Brian Nowak (Morgan Stanley):** Thanks for taking my question today. I have two. Ruth, I think you mentioned that desktop search might have been one of the contributors of growth. Can you just talk to us a little bit about what types of products or verticals you're still seeing growth in on desktop search, it's really impressive, given how old, how long it has been around.

And then, Sundar, with all the exciting changes going on with Search, becoming more relevant, et cetera, can you just talk to us about some of the KPIs that you monitor and what you're seeing when it comes to query volumes, click-through rates, overall response times. What are you seeing that sort of gives you confidence that you are continuing to get more and more relevant results for your users? Thanks.

**Ruth Porat, CFO Alphabet and Google:** So in terms of desktop, you know, I described it as a solid contributor to revenue growth. And what we see is that desktop does remain an important form factor for certain more complex tasks. So things like planning vacations or assessing insurance options, what we see is users continue to go back to desktop, notwithstanding the growing utility of mobile. And I think one of the things that we've been very focused on is that innovations that benefit mobile also enhance the desktop experience for users and advertisers.

**Sundar Pichai, CEO Google:** And then in terms of -- obviously, we've been -- over time, we have developed a very comprehensive metric for measuring and tracking search -- search quality -- to get a sense of search quality and how user satisfaction is through Search. But to give you a sense of -- we continue -- continue to take that work deeper, we realize users sometimes do searches through sessions, understanding what is their satisfaction across a session, what is their engagement. Are they getting at what they are looking for? Those are all some of the deeper work we are undertaking.

And also understanding by vertical how we are helping users. There was an earlier question around shopping and commerce. That's an example of the kind of vertical and what can we do to make that experience better. Health is a vertical, another vertical, in which we have a whole Google Health team focused on understanding the in-depth experience that would give a better experience overall on Search.

So it's a very comprehensive effort, and we are constantly looking to do it deeper and broader at the same time.

**Brian Nowak (Morgan Stanley):** Great. Thanks.

**Candice (Operator):** Thank you. And our next question comes from Colin Sebastian from Baird. Your line is now open.

**Colin Sebastian (Baird):** Thank you. I have two. Sundar, there's clearly a lot of innovation happening at Google. But I'm wondering, how do you think about the increase in scrutiny and oversight possibly impacting your ability to explore new services or new markets over time, and ultimately, to remain competitive? And, second, Sundar or Ruth, we don't often ask about the Display Network, but just wondering, given all the concerns around privacy, ad blocking, the like, how do you view this business strategically as part of the overall ecosystem? Thank you.

**Sundar Pichai, CEO Google:** You know, on the first part, we consistently want to work and build products that benefit users and support the ecosystem. And so our products and services benefit consumers, small and medium businesses, advertisers. And, overall, they help reduce prices and expand choice. And so that's our underlying approach, I think, which is what helps us engage and explain to regulators. And we'll continue to do that.

You know, I think there are also many new areas of opportunities available for us. And in many of these areas, we are the new entrant and we create competition. And sometimes the competitive pressures can lead to concerns from others. And so that's part of what's going on as well.

But the other area is innovation to develop markets. We are investing deeply in our next billion users, so markets like APAC continue to be big long-term opportunities for us as well.

**Candice (Operator):** Thank you. And our next question comes from Ross Sandler from Barclays. Your line is now open.

**Ross Sandler (Barclays):** Great. Ruth, just if you rewind the clock a little bit, when we entered this year, you had called out how some product changes may cause year-over-year growth rates to fluctuate from time to time. And we haven't heard that in a couple of quarters. So as we look out towards, like, 2020 and beyond, do you feel like a lot of the product queue is in a good place as far as Search and YouTube are concerned and that, these product changes might be a little bit more subtle going forward? Or could we return to having more meaningful impact in the future? Just any color there. And then on the third quarter, the Asia region, the growth rate was solid but a tad lower than the prior trend. So anything notable to call out on APAC? Thank you.

**Ruth Porat, CFO Alphabet and Google:** So in terms of the first question, look, I think as Sundar and I have talked about, we're pleased with the strength of the business that you've seen here again in the third quarter. And as we've said since the IPO, we don't manage the business to maximize quarterly results and we'll always do the right thing for the long-term. We're very focused on investing for the long-term.

And I tried to make it clear in the opening comments that as a result, quarterly growth can vary and has varied. I think, to your question, our view is that quarterly growth around the rates you've seen since the beginning of the year for us underscore the strength and the vibrancy, actually, in our business.

And, you know, that's particularly true at our size. In the last 12 months, we've generated over \$150 billion in total revenues. That's about \$25 billion of growth in the last year. And we are continuing to invest in long-term opportunities. But I would make the point that we do keep a lens to the long-term.

In terms of your question about geographies, when we look at the performance on a fixed-FX basis around the globe, pleased with the performance again in the third quarter. You aptly point out year-on-year growth in APAC in the third quarter was a bit lower than the second quarter. That primarily reflected slower growth in the Network business. And that was, in part, due to policy changes. It also reflected the fact that the launch of the Pixel 3a was in the second quarter, which boosted the year-on-year growth rate in the second quarter.

But I think also implicit in your question, at 26% year-on-year growth on a fixed-FX basis, running at about now \$7 billion in quarterly revenues, we're really pleased with all that the team is doing and the year-on-year growth rate.

**Candice (Operator):** Thank you. And our next question comes from Dan Salmon from BMO Capital Markets. Your line is now open.

**Dan Salmon (BMO):** Hi. Good afternoon, everyone. Sundar, maybe you could give us a little bit of an update on the Discover feed. That's a new product that we've featured in the past that I know a lot of users are getting more use out of. You've given us, I think, some updates on monthly active users, or DAUs, in the past. Any update there would be great or maybe any additional color on sort of how the total amounts of usage goes on there. That's obviously been featured to users a little bit more. And then, second, maybe just a follow-up for Ruth. Sundar spoke at length about your investments in renewable energy earlier. And maybe, keeping with the theme of the earnings call, you could help us understand how that is or maybe is not helping drive efficiencies across the country -- or across the company and your operating costs overall. Thanks.

**Sundar Pichai, CEO Google:** Discover is a product we are very excited about. I think it completes the other half of Search. Search is -- we do our mission for our users and be helpful when they come to us looking for information. Discover is the other half, where we are proactively understanding what might be most helpful or relevant to them and getting it to them.

And we definitely are focused on product quality and making sure the product is actually helpful to users and when they engage with it, they find it useful.

And it's definitely -- we are making progress. Our investments in machine learning are helping as well. We are definitely able to better anticipate and give them information proactively.

So over time, I see it as an important area for us. And it's done in close -- it's part of our Search and Knowledge efforts. And, as we do that, you can imagine you may have started a query in Search and it's a session. Maybe you're looking to take a trip somewhere or you're researching a particular topic. We may be able to continue that session and the user journey in Discover. And that creates a virtuous cycle. So these are -- we want to be helpful to users in a way that makes sense for them more continually. And the combination of Search and Discover helps us do that.

**Ruth Porat, CFO Alphabet and Google:** And in terms of your question on sustainability, we're proud of the work that we're doing. We do think that it's a valuable part of what we do. And we do consider the impact on the business and on the financials.

It really cuts across every element of what we do, what we're doing in our technical infrastructure, the way we're thinking about our products, as Sundar talked about, what we do with our facilities, what we're doing with AI. And I think it was about a year ago we talked about how we were applying machine learning to energy efficiency in our data centers. And it did have a net benefit. It helped us reduce energy consumption, not only positive for sustainability but was an efficiency effort.

Sundar talked about the fact that we are investing -- recently announced that we are purchasing -- making a meaningful investment in renewable energy, part of our commitment to offset 100% of our electricity use with renewables. And in our view, this is catalyzing further investment in renewables.

That is going to have a modest short-term increase in cost, but we think it's beneficial to catalyzing the overall growth in traditional [sic] energy. So there are puts and takes, net-net. We're proud of the work across everything that we're doing to support sustainability.

**Dan Salmon (BMO):** Thank you.

**Candice (Operator):** And our next question comes from Brent Thill from Jefferies. Your line is now open.

Again, Brent, your line is now open. Please check your mute button.

And our next question comes from Stephen Ju from Credit Suisse. Your line is now open.

**Stephen Ju (Credit Suisse):** Okay. Thank you. So, Sundar, was wondering if you can put the quantum computing advancement into some sort of perspective. I mean, the compute needs for Google has to be exponentially higher versus when you first launched. So we're wondering if this helps you get your arms around that ever-increasing compute need. And, further, I think you'll find that investors are as impatient as you guys are for progress. So can you talk about what kind of products or services this will help you create that you otherwise couldn't even think about doing before. Thanks.

**Sundar Pichai, CEO Google:** We're incredibly proud of the work that the team did and excited about the advancement in the whole industry. I think, in general, obviously, we've relied on advances in computing to be able to do what we do. And when we look ahead, we definitely see being able to drive the pace of change fastest is an important need for us as well as, I think, a source of competitive advantage.

As Moore's Law effects have diminished, I think, we are looking at a variety of approaches to make sure we can continue doing what we need to. And in that, this is an important tool in the arsenal. While quantum will take many years to really start making a difference, we want to be at the cutting edge of driving it.

I do think over time for sure, Cloud itself, we do see a lot of interest from Cloud customers, particularly in cutting-edge verticals, about quantum computing. And so that's an area where I think we will participate in as a business. And more importantly, applying it across other verticals we are in, be it health, as an example, I think will be where we will deliver value in the long run.

**Ruth Porat, CFO Alphabet and Google:** And as much as we're extremely excited about the long-term implications for quantum computing, part of your question there about our near-term computing requirements, given our outlook in particular across Google, we do expect to see ongoing demand for compute investments to support our growth, particularly for machine learning, Cloud, Search and YouTube. And the primary driver of capex does continue to be our expectations for compute requirements, so investments in technical infrastructure, as we've talked about today.

**Stephen Ju (Credit Suisse):** Thank you.

**Candice (Operator):** Thank you. And our next question comes from Brent Thill from Jefferies. Your line is now open.

**Brent Thill (Jefferies):** Thanks. I need a Google headset. Sundar, just on investments in GCP, you're in a really unique situation, having both infrastructure and productivity applications. Can you just walk through how you prioritize the two big buckets? There's a lot of different ways you can go in GCP. And just wanted to follow up with Ruth. You alluded to some G Suite pricing changes. And I know there was some prices that were changed earlier in the year. And I was just curious if you were referring to that price change earlier in the year or if there was something new. Thank you.

**Sundar Pichai, CEO Google:** I mean, you're right. I mean, these are two big buckets, and we treat them that way. Obviously, we have talked a lot about GCP. But G Suite continues to be very differentiated. And, we just announced a new leader, Javier Soltero, coming in with lots of experience to turbocharge this area as well.

And, in general, there are many G Suite customers now with whom we are having GCP conversations and vice versa. So I think, in general, given we have a big go-to-market effort, the breadth you have allows us to have more conversations and engage through many different paths in the organization. So it's very synergistic as well.

**Ruth Porat, CFO Alphabet and Google:** And in terms of the G Suite pricing, I was referencing the pricing that we announced back in April. It's all outlined in a blog post. Our view was that it was the right time to increase prices, given the ongoing functionality and tools that are included within G Suite. And, as I said, what we're seeing here is in addition to the benefit from the price change, we also continue to have nice seat growth.

**Brent Thill (Jefferies):** Great. Thank you.

**Candice (Operator):** Thank you. And our final question comes from the line of Justin Post from Bank of America-Merrill Lynch. Your line is now open.

**Justin Post (BoA-Merrill Lynch):** Great. Thanks. I think I'll ask on YouTube. Could you talk a little bit about your high-level OTT viewing strategy? Obviously, subscriptions are growing. And maybe give us an update on how your YouTube subscription product is doing versus expectations. And then on the paid click growth, it decelerated 18%. Anything to call out there, especially related to YouTube? Any change to coverage going on or anything we should know about? Thank you.

**Sundar Pichai, CEO Google:** You know, subscriptions is an area we are definitely excited about. You know, we are pleased with the adoption so far across both YouTube Music and YouTube Premium. They're now available in 71 countries, up from five markets at the start of 2018. So we are definitely scaling that up, and we are seeing great traction.

YouTube TV is also doing well. I think we just announced that PBS is coming to YouTube TV in July. Last month, we announced YouTube TV is now launching on select Amazon Fire TV devices. So there is definite -- the user satisfaction on the product is very high, and so we are



focused on continuing our expansion, building out a great service and building awareness for the service.

So, overall, I think engaging users with premium offerings on YouTube is a focus for us. And the efforts, while early, are definitely showing strong traction.

**Ruth Porat, CFO Alphabet and Google:** And then you asked about click growth and the trend there. The biggest driver affecting the click trends continues to be the growth of YouTube engagement ads. As in the first and second quarter, the rate of YouTube click growth decelerated in the third quarter. That does continue to reflect the changes that we made in early 2018 to really improve the user and advertiser experience. And as we've talked about on prior calls, that did have an impact on click growth.

But as we also talked about, they weren't related to -- those changes in 2018 were not related to policy enforcement actions at YouTube. They had a negligible impact on YouTube revenues. So not a read-through.

**Justin Post (Bank of America-Merrill Lynch):** Thank you.

**Candice (Operator):** Thank you. That concludes our question-and-answer session for today. I'd like to turn the conference back over to Ellen West for any closing remarks.

**Ellen West, VP Investor Relations:** Thanks, everyone, for joining us today. We look forward to speaking with you again on our fourth quarter call. Thank you, again, and have a good evening.

**Candice (Operator):** Ladies and gentlemen, this concludes today's conference call. Thank you for participating and you may now disconnect.