Operator

Good day, ladies and gentlemen, and welcome to the Alphabet Inc. Fourth Quarter 2017 Earnings Call. At this time, all participants are in a listen-only mode. Later, we will conduct a question-and-answer session and instructions will follow at that time. [Operator Instructions]

I'd now like to turn the conference over to Ellen West, Head of Investor Relations. Please go ahead.

Ellen West

Thank you. Good afternoon, everyone and welcome to Alphabet's fourth quarter 2017 earnings conference call. With us today are Ruth Porat and Sundar Pichai.

Now, I'll quickly cover the Safe Harbor.

Some of the statements that we make today may be considered forward-looking, including statements regarding our future investments, our long-term growth and innovation, the expected performance of our businesses and our expected level of capital expenditures. These 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 Form 10-K for 2016 filed with the SEC. Undue reliance should not be placed on any forward-looking statements and they are made are made based on assumptions as of today. We undertake no obligation to update them.

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.

As you know, we distribute our earnings release through our Investor Relations website located at abc.xyz/investor. This call is also being webcast from our IR website where a replay of the call will be available later today.

And now, I'll turn the call over to Ruth.

Ruth Porat

Thanks, Ellen.

We had a fantastic 2017 with total revenues of $110.9 billion, up 23% over 2016 and operating income of $28.9 billion up 22% year-on-year excluding the EC fine. Our momentum reflects the relentless focus on users, advertisers and enterprise customers as well as the benefits of our commitment to long-term investing.

For the fourth quarter, revenues of $32.3 billion were up 24% year-on-year. The ongoing very strong performance in sites revenue in particular reflects the combined benefits of innovation and secular growth with mobile search again leading the way. Healthy growth in network revenues was again led by our programmatic business. Substantial growth in other revenues, mainly hardware, cloud and Play continues to highlight the benefits of our investments.

Our outline for today's call is, first, I'll view the quarter on a consolidated basis for Alphabet, focusing on year-over-year changes. In order to facilitate comparisons of this quarter's results to prior periods, we have also provided the tax affected line items, excluding the impact of the U.S. tax legislation enacted at the end of 2017. You can see the components in our earnings press release.

Second, I will review results for Google and then Other Bets. I will then conclude with our outlook. Sundar will then discuss business and product highlights, after which we will take your questions.

Starting with the summary of Alphabet's consolidated financial performance for the quarter. Total revenues of $32.3 billion were up 24% year-over-year and strong across all regions. U.S. revenues were $15.4 billion, up 21% year-over-year. EMEA revenues were $10.3 billion, up 24% year-over-year. In fixed FX terms, EMEA grew 22%, reflecting strengthening of both the euro and the British pound. APAC revenues were $4.7 billion, up 30% versus last year and up 32% in fixed FX terms, reflecting weakening of the Japanese yen. Other Americas revenues were $1.9 billion, up 31% year-over-year and up 30% in fixed FX terms, reflecting strengthening of the Canadian dollar.

On a consolidated basis, total cost of revenues, including TAC, which I'll discuss in the Google segment results, was $14.3 billion, up 34% year-on-year. Other cost of revenues on a consolidated basis was $7.8 billion, up 34% year-over-year, primarily driven by Google-related expenses, specifically, costs associated with our data centers and other operations including depreciation, hardware-related costs for our expanded Made by Google family of products and content acquisition costs, primarily for YouTube.

Operating expenses were $10.4 billion, up 19% year-over-year, in particular, reflecting an increase in marketing spend, given the holiday season. Stock-based compensation totaled $1.8 billion. Headcount at the end of the quarter was 80,110, up 2,009 people from last quarter. As in prior quarters, the majority of new hires were engineers and product managers. In terms of product areas, the most sizable head count additions were once again made in cloud for both technical and sales roles, consistent with the priority we place on this business.

Operating income was $7.7 billion, up 15% versus last year, and the operating margin was 24%. Other income and expense was $354 million. We provide more detail on the line items within OI&E in our earnings press release.

Our provision for income taxes on a reported basis includes $9.9 billion for items associated with the U.S. tax legislation, resulting in a reported net loss of $3 billion and loss per diluted share of $4.35. Excluding the impact of the U.S. tax legislation, our effective tax rate was 15%. Our net income was $6.8 billion and earnings per diluted share were $9.70.

Turning now to CapEx and operating cash flow. Cash CapEx for the quarter was $4.3 billion. Operating cash flow was $10.3 billion with free cash flow of $6 billion. We ended the quarter with cash and marketable securities of approximately $102 billion.

Let me now turn to our segment financial results, starting with the Google segment. Revenues were $31.9 billion, up 24% year-over-year. In terms of the revenue detail, Google sites revenues were $22.2 billion in the quarter, up 24% year-over-year, led again by mobile search, complemented by solid growth from desktop search and strong performance from YouTube.

Network revenues were $5 billion, up 13% year-on-year, reflecting the ongoing momentum of programmatic and AdMob. Other revenues for Google were $4.7 billion, up 38% year-over-year, fueled by hardware, cloud and Play. Finally, we continue to provide monetization metrics to give you a sense of the price and volume dynamics of our advertising businesses. You can find the details in our earnings press release.

Total traffic acquisition costs were $6.5 billion or 24% of total advertising revenues and up 33% year-over-year. The increase in sites TAC as a percentage of sites revenues as well as network TAC as a percentage of network revenues, continues to reflect the fact that our strongest growth areas, namely mobile search and programmatic, carry higher TAC.

Total TAC, as a percentage of total advertising revenues, was up year-over-year, reflecting primarily an increase in the sites TAC rate, which was modestly offset by a favorable revenue mix shift from network to sites. The increase in the sites TAC rate year-over-year was driven by changes in partner agreements and the ongoing shift to mobile, which carries higher TAC because more mobile searches are channeled through paid access points. The underlying trend affecting the network TAC rate year-over-year continues to be the shift to programmatic which carries higher TAC.

Google's stock-based compensation totaled $1.7 billion for the year, up 1% year-over-year. Operating income was $8.8 billion, up 11% versus last year and the operating margin was 27%. Accrued CapEx for the quarter was $3.8 billion, reflecting investments in production equipment, facilities and data center construction.

Let me now turn and talk about Other Bets. I'll cover results for the full-year 2017 because it remains most instructive to look at financials for Other Bets over a longer time horizon, as discussed on prior calls. Results for the quarter are in our earnings release.

For the full-year 2017, Other Bets revenues were $1.2 billion, up 49% versus 2016, primarily generated by Nest, Fiber, and Verily. Operating loss was $3.4 billion for the full-year 2017 versus an operating loss of $3.6 billion in 2016. Other Bets accrued CapEx was $507 million, down from $1.4 billion in 2016, primarily reflecting a reduced investment in Fiber. We're pleased with our progress across Other Bets.

A couple of updates. Nest turned in a strong holiday performance in the fourth quarter across an expanded family of products in energy, safety and security. In 2017, Nest products also became available in 12 new countries, more than double the number in 2016. Verily wrapped up its first field study seeking to reduce the transmission of the diseases through mosquitoes with positive results. And just last week, Onduo, a joint venture between Verily and Sanofi began a limited commercial launch of its diabetes management platform.

At Waymo, progress is accelerating. For example, Waymo surpassed 4 million miles of driving in the real world, taking only six months to achieve the last million miles compared to that 18 months for our first million miles. And in November, Waymo announced that it is the only company to have a fleet of driverless cars on public roads that are completely autonomous without anyone in the driver's seat.

Let me close with some observations on our priorities and longer term outlook. Our 23% revenue growth in 2017 was powered in particular by the ongoing extraordinary performance of our sites business. Both mobile and desktop search continue to grow and benefit from our approach to innovation with strong momentum as we identify additional opportunities to enhance the user and advertiser experience.

As we've consistently emphasized, alongside the continued momentum in our advertising business, we are focused on building a second wave of growth within Google over the medium and long-term which includes the rapidly growing revenue businesses in Google, cloud, hardware and YouTube. With respect to cloud, we're seeing the benefits of a fully featured enterprise offering and an expanded go-to-market team, bringing our advantages in infrastructure, data analytics, security and machine learning to more customers. And we are pleased with the momentum in our hardware business in 2017, driven by an expansion in both our product line and geographic availability. Finally, as we look further into the future for our third wave of growth, we remain excited about the longer term potential for our Other Bets businesses.

Overall, operating income was up 22% year-over-year in 2017, excluding the impact of the EC fine, although there was obviously fluctuation in the rate operating income growth quarter-to-quarter. Within cost of revenues, the biggest component is traffic acquisition costs, reflecting our strong revenue growth in mobile search and the fact that mobile search carries higher TAC than our desktop business. While we expect sites TAC to continue to increase as a percentage of sites revenue, reflecting ongoing strength in mobile search, we anticipate that the pace of year-over-year growth in sites TAC as a percentage of sites revenue will slow after the first quarter of 2018.

Within OpEx, we are keenly focused on prioritization in order to optimize the resources we're investing for longer-term growth. As I discussed on last quarter's call, marketing spend in the fourth quarter is significantly elevated, in particular supporting hardware but also across cloud and YouTube. For 2018, we remain excited about the investments we are making to drive the next phase of growth in our big bets in Google in cloud, hardware and YouTube, and our machine learning efforts which are powering innovation across our businesses.

You will see us continue to support our priority areas with increased headcount which will remain concentrated in R&D. With the closing of our deal with HTC earlier this week for example, we've added 2,000 employees to support our hardware business. With respect to SBC, we've completed the transition to a single annual compensation cycle for employees with a full year equity refresh grant to employees in the first quarter of 2018. Our biannual grant to SVPs will also occur in the first quarter and you will see the combined step up in our first quarter results. For our Other Bets in 2018, we will continue to calibrate the magnitude and pace of investment appropriate to their individual execution path.

Finally, our framework for capital allocation is unchanged from our prior discussions. The primary use of cash continues to be to support organic growth in the business. We are excited about the significant opportunities we've identified in our businesses and continue to invest appropriately. We then layer in a sensitivity analysis regarding potential M&A as well as CapEx, in particular computing infrastructure, to support the needs of these growing businesses. The most sizable catalyst for added investment in compute power include the expanding application of machine learning efforts across Alphabet as well as additional requirements for Google's Cloud, Search and YouTube businesses. This framework further considers complimentary uses such as the share repurchase. After taking these potential investments into account, our Board has decided to extend our share repurchase program up to an additional 8.6 billion of Class C capital stock.

In conclusion, 2017 was another great year and we are very excited about the opportunities ahead. I will now turn it over to Sundar.

Sundar Pichai

Thanks, Ruth.

Our teams are off to a great start in 2018. This year is special as it'll mark 20 years since Google was founded. A lot has changed but our mission organizing the world's information and making it universally accessible and useful remains the best guide for the next 10 years.

Technology is an incredibly dynamic industry. We've been laying a foundation for the next decade as we pivot to an AI first company, powering the next generation of Google products like the Google Assistant. And we have been making substantial investments in our three biggest bets, cloud, YouTube and hardware. These bets have enormous potential and already they are showing real momentum and gaining traction. Today, I'll start by sharing some of the exciting progress in these three big bets.

First, Google Cloud. Google Cloud, which includes Google Cloud Platform and G Suite, has reached meaningful scale, and I'm excited to share today that it's already $1 billion per quarter business. In fact, we believe that Google Cloud Platform, based on publicly reported data for the 12 months ending December 2017, is the fastest growing major public cloud provider in the world.

We are also increasingly doing larger, more strategic deals with customers. In fact, the number of deals worth over a $1 million across all cloud products more than tripled from 2016 to 2017. The strength of our products and the value of working with Google is increasingly clear to partners and customers.

In the fourth quarter, we forged new and deepened existing partnerships with industry leaders including Cisco for open hybrid enrollments, Salesforce for customer insights and productivity, and SAP for AI and data insights across their products. These collaborations span our entire company from engineering integration to marketing programs to joint sales, and they cover Google Cloud Platform, G Suite and Google Analytics.

We also saw accelerating customer traction on our wins [ph] included global brands like Bed Bath & Beyond, then to Dentsu Aegis Network Aegis Network, Keller Williams, Mattel and Tyco Retail Solutions. And underscoring the increasing importance of Google Cloud to the enterprise, we surpassed another new milestone, 4 million paying customers on G Suite.

Next, YouTube. Every month more than 1.5 billion people come to YouTube to watch their favorite content on channels ranging from the Ellen Show which has more than 22 million subscribers to the NBA with over 8 million subscribers to SciShow, a really popular educational channel with more than 4.5 million subscribers. In fact, there are over 1 billion learning related video views everyday on YouTube. I learned that this week.

With all this great content, people are thinking of YouTube more as a key part of their TV viewing experience. For Tuesday night State of the Union, more partners used YouTube to live stream the address than ever before, generating 5 million live views. And just yesterday, we announced a partnership with Major League Soccer's LA Football Club, YouTube TV will be the exclusive home to watch all locally televised English language matches in addition to their original programming and content. YouTube TV is now also available on Roku.

There is great momentum around the world with localized versions of YouTube now in 90 countries in 80 different languages. Just this morning, we announced that we are expanding the popular YouTube Go app to over 130 countries around the globe. The app has great data usage transparency and controls built in, which is especially useful for people living in regions with limited connectivity. In the fourth quarter, we also strengthened our relationship with the music industry, signing new licensing deals with Sony Music Entertainment and Universal Music Group. We also partnered with Ticketmaster to help fans by tickets to see their favorite artists perform live.

Third, our growing hardware business. Our Made by Google hardware products were very popular this holiday season. Device shipments in the fourth quarter have more than doubled year-over-year. Our retail partners also saw strong performance. Our devices are available in stores like Best Buy, Target and Walmart. I'm especially excited about the popularity of our Google devices for the home like the Google Home, Mini, Max and Chromecast. In the last year, we have sold tens of millions of these devices and counting.

I want to call out the great work of our marketing and design teams. Our hardware is beautiful individually and as a family, and people love discovering the unique features like the built-in Google Assistant. Earlier this week, we officially closed our deal with HTC, which will bring great talent to drive even more innovation in the years to come.

Turning to our efforts in machine learning. Our AI research and innovation leads the world. Our mission to better organize the world's information has been transformed by these technologies with our Search products and the Google Assistant at the heart. There is great momentum around the Google Assistant as we bring it to more people on more devices. It's now available on more than 400 million devices including speakers like Google Home as well as Android phones and tablets, iPhones, headphones, televisions, watches and more. People love to use the Assistant on all these devices. There was a lot of excitement around the Google Assistant at CES from partners and consumers where we brought the Assistant to new surfaces like smart displays from brands like JBL and Lenovo as well as Android Auto which is now available in more than 400 car models from brands like GM, Hyundai and Volvo.

One area that's really benefiting from our advancements in AI is photography. The Pixel 2 phone is the leader in video rankings by industry standards, with smoother and clearer videos, thanks to machine learning and our video stabilization technique. And Google Photos continues to grow from strength to strength. On New Year's Eve alone, over 3 billion photos and videos were uploaded to Google Photos. More broadly, we want everyone to be able to use machine learning for their own needs. We recently gave Google Cloud customers, access to AutoML which makes it far easier to build complex new enrollments. Since it launched a few weeks ago, over 10,000 customers have already signed up to try it.

Lastly, I'll give a quick update on our computing and advertising platforms. First, Android. To provide a better, more tailored experience for our next billion users, we made Android Oreo Go edition available for our device partners. This year, we expect to see Go devices from dozens of manufacturers and with great support from mobile operators and app developers around the world. I'm confident that this will bring the power of smartphones to many more people for the first time.

Google Play is also growing well. Just last week, we introduced audiobooks, so you can now catch up on your favorite books any time on multiple devices. And in Latin America, number of unique monthly buyers on Google Play grew by over 50% year-over-year in 2017. Chromebooks also continue to gain momentum and traction. Third-party research tells us that fourth quarter sales of consumer Chromebooks in the U.S. grew by over 70% year-over-year.

Moving to our advertising platforms which help large and small businesses. As shoppers turned to their mobile phones this holiday shopping season, Google was central to helping them discover new brands, compare products and find the best deals. We redesigned the mobile shopping experience on Google, brining more product information to the forefront like reviews and ratings. We are also making the payments experience simpler, safer and more consistent. We brought our payments efforts together as a new Google Pay, which shoppers can use to pay online, in stores and across Google products like Chrome and the Play Store. Companies like Airbnb and Instacart are using Google Pay to speedup mobile checkout. And HotelTonight found that customers using Google Pay are 65% more likely to complete their bookings.

We also have really strong momentum in app promotion ads. The majority of our app promotion campaigns are now using Universal App campaigns which is part of our focus on simplifying the advertiser experience.

Additionally, we introduced a new playable ad format in Google Play that allows users to sample games before they install. Ads in Google Play are performing really well for developers. And our app promotion business on YouTube is flourishing. We launched major initiatives such as store visit measurement and location-based ad formats to drive online to offline commerce. We are focused on making sure YouTube is a great place for users and advertisers while helping creators earn money from popular content.

In addition to the significant work we are doing to product users and stop abuse on the platform, just a few weeks ago, we announced changes to advertising on YouTube, including stricter monetization criteria, new manual reviews for all videos in Google Preferred and simpler controls for marketers. The feedback we have received from advertisers and creators so far has been really positive.

So, as you can see, we are making great strides in our biggest bets, and I’m proud of the work we are doing across the Company. I’m also incredibly proud that as Google grows, we are making significant contributions to our partners, the economy and our local communities.

Our business continues to benefit our partners around the world. This includes news publishers, app developers and YouTube creators, who we share revenue with. Over the last four years, our partners have earned over $100 billion; that’s incredible and we are working on new ways to drive even more value to our partners. In the U.S. specifically, we have offices and data centers across 21 states and we plan to hire thousands of people across the U.S. this year.

Last year in the U.S., we grew faster outside the Bay Area than in the Bay Area. To support this growth, we will be making significant investments in offices across nine states including Colorado and Michigan. We will also be building or opening five big new data centers in the U.S. And with digital skills and high demand by employers, our Grow with Google initiative will have job seekers and small businesses gain education and skills to help them succeed. Just a couple of weeks ago, we announced that we are creating an IT support certification program that will give thousands of people scholarships and job opportunities. More than 10,000 people have already signed up, which is amazing.

I want to thank all our employees, Google users, partners and advertisers around the world. I couldn't be more excited about what's in store for all of us this year.

With that I'll hand it back over to Ruth.

Ruth Porat

Thank you, Sundar. And we will now take your questions.

Question-and-Answer Session

Operator

[Operator Instructions] And our first question comes from Eric Sheridan of UBS. Your line is now open.

Eric Sheridan

Thanks for taking my questions. Maybe two, one for Sundar and one for Ruth. Sundar, coming out of CES and the success you had with Google Home and the Google Assistant during the holiday period based on the blog post you guys put out, can you identify some of the key investments in either partnerships or hardware or capabilities that you're targeting over the next one to two years to make sure the momentum around Assistant is sustained? And then, Ruth, looking at cost of goods sold that came in quite a bit higher than we thought, and you were lapping one-time charge, if we have it right, versus the year-ago period. Maybe you could talk a little bit about some of the pressures in cost of goods sold that were either seasonal or maybe a new normal in terms of higher level, going forward? Any color there would be really appreciated.

Sundar Pichai

On the Google Assistant and Google Home we are very excited about the momentum we saw in CES. It actually reflects work we've been doing for a while. Google Assistant in some ways brings together all the technology we've been building for years, and it's an extension and it's supported by Google Search as well.

We are also thinking about our capabilities broadly beyond just one device alone, and that's what we are doing here across phones, across all surfaces. So, that's something big we're focused on. And the second is we have always built ecosystems, be it Android or Chrome or Chromebooks. We work with many, many partners and scale up things, right. And so we are leveraging those best practices and trying to build this in a way in which the entire ecosystem can ship products with the Google Assistant and generate value. So, I think the framework is great, and long-term, our investments in AI will directly manifest its capabilities for users through the Google Assistant. So, I'm very bullish on it.

Ruth Porat

And then, in terms of gross margins, it obviously reflects our product mix. And as you know well, the TAC rate for each of sites network as a percentage of revenue lines, that's continued to increase because they're our strongest growth areas, namely mobile search and programmatic and so carry higher TAC. But, as I indicated in my opening comments, we do estimate that the year-on-year increase in the sites TAC rate will slow after the first quarter of 2018. And then, the other thing to note, other cost of revenue does reflect the seasonality of hardware, having increased both the number of products and the Made by Google family as well as continuing to expand geographically in western Europe and APAC, you can see that reflected here.

Operator

And our next question comes from Heather Bellini of Goldman Sachs. Your line is now open.

Heather Bellini

Two quick questions, one for Ruth, and Sundar. I guess, Ruth, just to follow up on your comments there, the partner agreements which you just cited.. Is there any color you could give us on how these typically work? And what I mean by that is are they typically multiyear deals on average? And how do we think about these impacting the rate of change in TAC, since you are talking about the pace of growth in TAC as we look out, call it in year two if these are multiyear deals? And then, for Sundar, I guess, I wanted to follow up a little bit with what we saw at CES. But, how do you think about voice? And given the significant number of devices in the market, how do you think in the future about traffic acquisition strategies on these devices, as you look five years down the road? Is there any reason to think that the strategies might be different that you are going to follow as you look ahead, than what we've seen over the past, call it since the advent of the iPhone? Thank you.

Ruth Porat

So, on your first question, there is not much really that I'm going to be able to add there. I mean, given the ongoing momentum in our mobile search business, this does continue to be relevant, as you look forward, given mobile carry's higher TAC. But, the rate, as per your question, has also reflected changes and partnership agreement. So, all factors considered, we expect the year-on-year increases will slow after the first quarter of '18. And as I've said on many of these calls, we are very pleased to have a very strong position in a rapidly growing market and that momentum does continue. I guess, the only other thing to add is that Q4 TAC as a percentage of revenue does benefit from the fact that the fourth quarter is a seasonally strong quarter for YouTube. So, quarter-on-quarter changes are less insightful because CAC is distinct from TAC. It's not in this number but not much more to add there. Pass it to Sundar.

Sundar Pichai

And Heather on voice, we are very excited by voice. We obviously see it being adopted strongly in countries like India; it's actually a significant part of just mobile search queries in general. And things like Google Assistant and doing Google Home kind of really accelerates the trend. But, we definitely see more multimodality. So, as you saw, we also announced many smart displays at CES. And I think that will be an exciting trend as well. So, we will bet on all of that. In general, I think about -- we want to be there for users when they need us and we want to serve everyone. This is why we work across the ecosystem, we do first party devices, we do it globally, and so, we are committed to doing that well. So, I think, it will be an extension of how we have approached search from day one and trying to serve everyone. And so, I don't overall see a big shift.

Operator

And our next question comes from Douglas Anmuth of JP Morgan. Your line is now open.

Douglas Anmuth

Some big news earlier this week just in terms of Waymo with FCA talking about delivering thousands of minivans to Waymo later in the year. So, I was hoping Ruth, you could just talk to us more about the timing for that business and how we should think about the economic model there, as you move to operations and deployment phase. And then, secondly, the cash now obviously much more accessible in terms of what is held overseas, could you just talk more about your plans there? Obviously, the bigger buyback there but still not meaningful in terms of the overall size of the company.

Ruth Porat

Sure. So, first on Waymo, we do remain very excited about the opportunity with Waymo and our continued progress on multiple fronts, in particular the rider program in Phoenix we’re excited about and we’re expanding our testing to more states. In November, we announced that Waymo’s self-driving TAC reached a major milestone, becoming the only company to have a fleet of driverless cars on public roads that are completely autonomous. And that builds on our more than 4 million test miles driven in the real world in seven states, 25 U.S. cities, we’re currently driving, self-driving I should say, 10,000 miles every day with billions of miles in simulation and robust testing at our private facilities. So, to your question, we do continue to explore a range of options beyond the program, we’re piloting in Phoenix including ride sharing and personal use vehicles, logistics, deliveries and working with cities to help them address public transportation objectives. That being said, our first commercial application is the ride service that we will launch in 2018 that would be open to members of the public in Phoenix and riders will be able to use the Waymo app to have one of our fully driving -- self-driving cars without a driver at the wheel. So, we are very excited about that.

And then, in terms of cash, I think the main point as we think about it is there is no change in our approach to our capital allocation framework. We’ve consistently been focused on long-term investing. We talked a lot about that already on this call and our framework has been therefore very consistent. The priority, the first use is organic, it is investing in the many opportunities that we have. And the second is strategic. And we do remain active with smaller M&A deals, in particular to support our cloud business and hardware. The HTC deal which we just closed is a good example of that. Third is CapEx. So, we continue to invest in machines to support growth we see across Google but in particular supporting Cloud, Search, YouTube and all that we are doing in machine learning. And then, finally that leads to return on capital. And when we considered all of that that’s led us to extend -- have the Board extend share repurchase program which we announced a couple of years ago. And we will let you determine what that number represents in true Google fashion. But it's just a modest increase to what we have been doing previously.

Operator

And our next question comes from Brian Nowak of Morgan Stanley. Your line is now open.

Brian Nowak

I have two. The first one, Ruth, you called out desktop search, I think the second straight quarter as being relatively strong. Could you just talk about some of the drivers of the strength in desktop? And how do you think about the sustainability of continued strong desktop growth in the 2018 and beyond? The second one kind of a question on search query volume. There is often speculation and question marks around how consumer behavior is changing in ecommerce and weather Google is still capturing as many ecommerce searches. Could you just talk to what you are seeing in retail search query volumes and search user growth within ecommerce in the United States?

Sundar Pichai

Overall, look, we -- obviously Search is very broad. And even when you talk about commercial thing, we serve across many, many categories including things like from travel to hotels and to services to products and so on. So, we are very, very comprehensive. And obviously, ecommerce is evolving a lot and we continue to invest there. Google shopping is doing well. And we work hard to make sure we bring the best experience possible, which is why I said [ph] they were also Search and Assistant we partner with companies like Walmart for example to make it much easier to buy products and so on. So, we invested a lot there. You are right, consumer behavior is changing but we are comfortable given the breadth of how we do things and how we are focused on user experience there.

Ruth Porat

And on your question on desktop, there really isn't one particular item to call out here. And that's why last quarter, I tried to walk through the process that our team goes through and the way they look at innovation, really stepping back and recognizing that the way we all use smartphones and desktop is continuing to evolve. So, therefore, there is utility and challenging assumptions about evolving user behavior and advertiser preferences, and that opens new lines of inquiry which benefits not just mobile but also desktop. And desktop did deliver solid revenue growth. It does remain an important form factor for certain more complex tasks such as planning vacations or assessing insurance options. And we are pleased with the ongoing strength. I'll leave it to you to do any of the forecasting. But, we just view it as yet another valuable form factor and are really pleased with the performance there.

Operator

And our next question comes from Anthony DiClemente of Evercore.

Anthony DiClemente

Thanks for taking my questions. One for Sundar and for Ruth. Sundar, on YouTube, you mentioned that 1.5 billion people come to YouTube. Any other information you can give us there on user growth or engagement trends would be great, anything on time spent, I mean particularly as YouTube becomes more mature and mobile video particularly in North America gets more competitive. And then, also on YouTube, anything around new products or features driving the monetization or ad business? And then, Ruth, just a question on the growth in marketing spend in the fourth quarter. I think you said that the 4Q was significantly elevated. Should we interpret that to mean that the growth rate in selling and marketing year-over-year should decelerate off the 4Q? And then, just related to that, you're getting a good return on investment from this marketing spend, particularly when you think about media mix and all the spend that we've seen on TV as compared to digital marketing?

Sundar Pichai

Look, on YouTube, we are continuing to see great momentum. Maybe one area which for example highlights how well it's doing is if you think about YouTube on TV, people actually want watching YouTube on the big screen, our growth has been significant there. And so, increasingly people use YouTube for -- we see it being used to across every possible use case. And I said it earlier in the call. Every day, we get over a 1 billion user on educational content alone. People use it to go, catch upon sports, music, entertainment. And so, you can think about the breadth of -- historically, YouTube has been very strong on mobile and continues to strong on mobile. It's doing particularly well in the next billion user markets. Our growth last year was very strong there, which is why we supported it with investments like YouTube Go. And we are seeing it now grow well-beyond mobile, especially in the leaving room. So, a lot of momentum there.

Ruth Porat

And then, in terms of sales and marketing, as I said, it particularly supported hardware but was also supporting Cloud and YouTube. And as both, Sundar and I've said, these are important Google growth areas for us and we are investing to support growth in the business. The elevated levels this quarter did reflect both seasonality and strategic decision to invest in these brands. And so, view it as a very important part of the overall investment and what we view as very sizeable opportunities. And it's both supporting the brand and the momentum therefore going into 2018, but this is very specific product focus as well.

Operator

And our next question comes from Dan Salmon of BMO Capital Markets. Your line is now open.

Daniel Salmon

Sundar, I'll go with the European theme. First, curious to hear your thoughts on the potential impact of GDPR, maybe both on your own sites and properties and how any business practices may need to be adjusted for that but also for tools like customer match that you are advertisers may use. And then, second, I'll take a shot at it. Any updates on your dialogue with the EU officials and regulators on the proceeding there?

Sundar Pichai

Good question. I was just in Europe last week, it was exciting to be there. There is clearly momentum we feel in terms of how Europe is doing. And we are very committed to the region. We are opening new offices there. We announced AI center. We are committed to hiring more engineers and supporting staff there. So, it's an important market for us.

On things like GDPR, we want to be -- we have been thoughtfully engaged there. I think it's important to put privacy first for European citizens, and we are very supportive of the work that's underway there. And we are committed to complying with GDPR across all the services that we provide in Europe. There is still time. As a reminder, it doesn't go into effect until May or so. And we are working to make sure all our products are ready. And we will work hard to make the transition well. In terms of -- again, with the European Commission, we have long had constructive conversations. We are understanding their concerns and responding with thoughtful changes, and we will continue engaging in a thoughtful way.

Operator

And our next question comes from Colin Sebastian of Robert Baird. Your line is now open.

Colin Sebastian

First, Sundar, your comments on Google Cloud were upbeat. And I wonder how much of the momentum there is related to machine learning capabilities offered as service. If you could frame just how important that is for the cloud business overall? And then, as a follow-up on Google Home or the voice-based assistant. If there is any update in how you are thinking about monetization from a transactional perspective, transactional model with perhaps retail partners or do you see an ad-based model emerging there as well?

Sundar Pichai

On the first thing calling on cloud, particularly last quarter, we obviously brought AutoML to our Google Cloud customers. To me that shows the rate at which we are bringing our internal advances. It's just a year ago, I remember reviewing with the team and they first showed me the AutoML work, we spoke about it at Google I/O, and it's pretty cutting edge work. And to turn it back around and to provide it for everyone in the world, I think that shows the power of what we can do with Google Cloud and get our state-of-the-art and get it to everyone.

I think the momentum there obviously is due to our strength in machine learning, the kind of open agile development environment we provide security, and then the combination with G Suite. But above all, I think what -- we've always -- we've been doing cloud now for 19 years because Google itself was built on a cloud platform. But where the momentum is really coming from is over the past two years, we've put a lot of effort to make sure we are enterprise scale ready. So, now we can handle any type of enterprise, any kind of regulatory complexity, security complexity and so on. And that's evident in the business wins we are seeing. So, we are signing customers who are very large across-the-board, globally. And I think that's driving a lot of momentum there.

On your question on Google Home and voice-based assistant and how we are thinking about monetization. There are a lot of interesting ideas internally. So, teams are excited about trying new things. We see a lot of potential. But the guidance I've given the teams is to be squarely focused on user experience. We are really getting started. I think these are going to be powerful technologies. But, there are areas where we clearly feel all of us fall short for doing right by users and getting their expectations -- matching their expectation. So, you'll see us focused on user experience there for a while to come.

Operator

And our next question comes from Michael Nathanson of MoffettNathanson. Your line is now open.

Michael Nathanson

One for Sundar and one for Ruth, both on YouTube. So, first question was as Google Preferred kicks up a little heat on types of qualities that makes the cut for your videos. Do you feel you have to take a more active stance and looking at what is in Google Preferred -- sorry YouTube Preferred and how are you going to go about that? And then for Ruth, the past year was one where we heard a lot about brand safety. And I wonder when you look back at the YouTube results in 2017, is there any noticeable signs of maybe a shift in ad spending from some of the brands who were making those complaints? So, those are my questions.

Sundar Pichai

I probably can talk about both as they're related. We obviously want to make sure YouTube has a great experience for users, content creators and advertisers because it supports content creators. And we took a lot of steps last year but particularly in December we adopted a new rigorous approach. And that's a much more stringent standard for creators. For example, they need 1,000 subscribers to be eligible for monetization. We are manually reviewing Google Preferred videos. We obviously use machine learning to support that a lot and they both go hand in hand. We have provided improved controls for marketers and we are also working with trusted third party vendors to assist brand suitability. So, it's a comprehensive approach to make sure all of this works well. And so, while there have been concerns but we are working really hard to address them and respond strongly. And so, I think we're focused on the long-term opportunity here and I think we are setting ourselves up well for the years ahead.

Operator

Our next question comes from Ken Sena of Wells Fargo Securities. Your line is now open.

Ken Sena

So, just a question, searches seem to be coming more qualified through travel as far as filtering the price that people want to pay, locations, amenities et cetera. Is there any trend that goes along with that in terms of maybe depressing search volume growth to some extent because of the more filtered aspect? And then, secondly, does the higher qualification trend tie in at all to the shifts towards programmatic and in terms of other parties that might be involved or the discussion that we had around TAC? And then, maybe two, just as a follow-up, if you can provide just a little bit more color on Google Pay in terms of what might be different in this round versus previous attempts?

Sundar Pichai

Maybe I'm not fully sure I understood all the specifics there. But, at a high level, as people are on the go, they are travelling et cetera, if anything, I think search is more invaluable than ever before. All the work we do in local searches applies incredibly when you travel, the properties we have like Google Maps et cetera, go along with it. So, overall, I think they all add up to a better user experience and hence a better opportunity for us. Google Pay turns out to be an important part of all of this. As we move from just answers to helping users complete actions about time including transactions, the ability to complete the transaction is an important part of it and which is why making sure Google Pay in a unified way works as seamlessly as possible is a big part of our long-term strategy.

Operator

The next question comes from Stephen Ju of Credit Suisse. Your line is now open.

Stephen Ju

So, Sundar, I think Ruth cited hardware in the prepared remarks as the largest contributor in the fourth quarter for the other revenue line. As you look at the roadmap going forward, you acquired the HTC engineers to bring that team in-house. So, looks like for the first time you have an integrated hardware and software team under one roof. So, how do you think your product development pace and strategy will change for smartphones and other devices going forward? And also, does it make sense to bring the Nest team to be more integrated into core Google as well given the drive to increase the touch points for all the Google products to other form factors?

Sundar Pichai

You are right that part of the reason we are so excited about being able to bring this world-class team in-house is while we have been working together already, we have had to straddle a company boundary to do that. But now, having them as Googlers, will really make that integrated development, which is so critical for us to do it better. We bring a unique approach to hardware, the combination of AI plus software plus hardware. So, being able to get those teams working together, I think would really drive the pace forward. And the best example of that is you see the advances we have made with both still and video photography on our phones. And the Nest team is very, very closely aligned with the Google hardware team. They work hard to realize a lot of synergies there. We already shared a lot of our go-to-market efforts. And we increasingly are collaborating on product development as well. So, we collaborate closely, and I'm excited at the possibilities there as well.

Operator

And our next question comes from Justin Post of Merrill Lynch. Your line is now open.

Justin Post

First for Sundar, it didn't feel like there is many visible search changes this year as far as coverage or ad formats? So, I would love to hear your thoughts on search innovation pipeline as you look at the 2018 and key growth drivers going forward? And then, Ruth, in the prepared remarks, there was a lot of comments on investment in your medium-term business growth drivers, offices, data centers and other areas. And I'm just wondering if you view 2018 upcoming as an investment year or kind of more of the same of what we have seen over the last couple of years?

Sundar Pichai

Justin, when you think about Search, one of the ways I'd encourage you to think, we think about user journeys. So, a lot of the innovation that we are doing has gone on to not just an individual query and how we respond but how we think about what our user is trying to accomplish over a series of successions. Are you trying to plan a trip and how do we do it better; do you have a health-related area where you are trying to learn more about it, and how do we help you through that. And so, it's not always just changing a specific format but understanding context better and bringing you that information through a journey. And I think so, there is a lot of innovation that's happening in that direction. And also underlying is what I said earlier, it's not just providing the answers, how do you help them get to that information and act on it. And so, maybe you found something and you want to call, call that place or maybe you are trying to order a birthday gift and we actually want you to -- want to go a step further and help that -- help you buy that gift. So, that's along the lines. And the innovation is happening across search and assistant in integrated way.

Ruth Porat

And then, in terms of your investment question, we've consistently been investing across Alphabet and we have tried to be very clear about our investment priorities, all with a view to supporting healthy, long-term growth that goes back to the inception of the Company. Year-on-year op inc growth that you have seen does include these sustained investments for all the areas that both, Sundar and I have talked about, for the year up 22% versus last year. Obviously a lot of variability in growth quarter-to-quarter. And that we just continue to be focused on doing the right things to support growth of the business. The fourth quarter does reflect the obvious seasonality. And again, we continue to look across various, their needs and try and prioritize that we can remain committed to long-term growth.

Operator

Our next question comes from Ben Schachter of Macquarie.

Ben Schachter

Just a couple of questions. Can you discuss the evolution of the business model for Waymo? You are launching the ride hailing service in Phoenix, you've worked with manufacturers. You talked about other models. But, when you think about the sort of 5 to 10-year view of that, what will the primary business model look like? And separately, can you talk about what is interesting from a strategic point of view about the video game business? You are making some key hires there and just wondering what you think Google can bring to that industry that would be innovative.

Ruth Porat

So, on Waymo, really not much more to add. We're really pleased after years of work on technology where it was really about safety, safety, safety and developing the technology and the platform. And now we are in a position where we have this opportunity to let people use and benefit from what we've developed. So, I think that safety has been a key driver and the opportunity for cities has been really exciting what it means about optimizing resource base that they have. So, it's still very early days and we're just -- we're pleased with all the progress the team's made. But, it would be getting out of ourselves to go further out than what we've laid out here.

Sundar Pichai

On the video gaming side, I think, look, we are -- maybe today have a lot of momentum in these areas, both with YouTube as a platform, Google play. So, these are assets that really worked well, and we will continue investing there. Nothing new or interesting to share with you at this time.