

Date: October 29, 2024

Operator

Welcome, everyone. Thank you for standing by for the Alphabet Third Quarter 2024 Earnings Conference Call. At this time, all participants are in a listen-only mode. After the speaker presentation, there will be a question-and-answer session. [Operator Instructions] I would now like to hand the conference over to your speaker today, Jim Friedland, Senior Director of Investor Relations. Please go ahead.

Jim Friedland

Thank you. Good afternoon, everyone, and welcome to Alphabet's third quarter 2024 earnings conference call. With us today are Sundar Pichai, Philipp Schindler and Anat Ashkenazi. Now I'll quickly cover the Safe Harbor. Some of the statements that we make today regarding our business, operations and financial performance may be considered forward-looking. Such statements are based on current expectations and assumptions that are subject to a number of risks and uncertainties. Actual results could differ materially. Please refer to our Forms 10-K and 10-Q, including the risk factors. We undertake no obligation to update any forward-looking statement. 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. Our comments will be on year-over-year comparisons unless we state otherwise. And now I'll turn the call over to Sundar.

Sundar Pichai

Thank you, Jim, and hello, everyone. Q3 was another great quarter. The momentum across the company is extraordinary, as you've seen in recent product launches, and as you will hear on the call today. Our commitment to innovation as well as a long-term focus and investment in AI are paying off and driving success for the company and for our customers. We are uniquely positioned to lead in the era of AI because of our differentiated full stack approach to AI innovation, and we are now seeing this operate at scale. It has three components. First, a robust AI infrastructure that includes data centers, chips and a global fiber network. Second, world-class research teams who are advancing our work with deep technical AI research and who are also building the models that power our efforts. And third, a broad global reach through products and platforms that touch billions of people and customers around the world, creating a virtuous cycle. Let me quickly touch on each of these. We continue to invest in state-of-the-art infrastructure to support our AI efforts from the U.S. to Thailand to Uruguay. We are also making bold clean energy investments, including the world's first corporate agreement to purchase nuclear energy from multiple small modular reactors, which will enable up to 500 megawatts of new 24/7 carbon-free power. We are also doing important work inside our data centers to drive efficiencies while making significant hardware and model improvements. For example, we shared that since we first began testing AI Overviews, we have lowered machine cost per query significantly. In 18 months, we reduced cost by more than 90% for these queries through hardware, engineering and technical breakthroughs while doubling the size of our custom Gemini model. And of course, we use and offer our customers a range of AI accelerator options, including multiple classes of NVIDIA GPUs and our own custom-built TPUs. We are now on the sixth generation of TPUs known as Trillium and continue to drive efficiencies and better performance with them. Turning to research. Our team at Google DeepMind continues to drive our leadership. Let me take a moment to congratulate Demis Hassabis and John Jumper on winning the Noble Prize in chemistry for their work on AlphaFold. This is an extraordinary achievement and underscores the incredible talent we have and how critical our world-leading research is to the modern AI revolution and to our future progress. Also, congratulations to Jeff Vinton, who spent over a decade here on winning the Noble Prize in physics. Our research teams also drive our industry-leading Gemini model capabilities, including long context understanding, multimodality and agentic capabilities. By any measure, token volume, API calls, consumer usage, business adoption, usage of the Gemini models is in a period of dramatic growth. And our teams are actively working on performance improvements and new capabilities for our range of models. Stay tuned. And they are building out experiences where AI can see and reason about the world around you. Project Astra is a glimpse of that future. We are working to ship experiences like this as early as 2025. We then work to bring those advances to consumers and businesses. Today, all seven of our products and platforms with more than 2 billion monthly users use Gemini models. That includes the latest product to surpass the 2 billion user milestone Google Maps. Beyond Google's own platforms, following strong demand, we are making Gemini even more broadly available to developers. Today, we shared that Gemini is now available on GitHub Copilot with more to come. To support our investments across these three pillars, we are organizing the company to operate with speed and agility. We recently moved the Gemini app team to Google DeepMind to speed up deployment of new models and streamline post-training work. This follows other structural changes that have unified teams in research, machine learning infrastructure and our developer teams, as well as our security efforts and our platforms and devices team. This is all helping us move faster. For instance, it was a small dedicated team that built Notebook LM, an incredibly popular product that has so much promise. We're also using AI internally to improve our coding processes, which is boosting productivity and efficiency. Today, more than a quarter of all new code at Google is generated by AI, then reviewed and accepted by engineers. This helps our engineers do more and move faster. I'm energized by our progress and the opportunities ahead, and we continue to be laser-focused on building great products. Let me turn now to the quarterly highlights. In search, recent advancements, including AI Overviews, Circle to Search and new features in Lens are transforming the user experience, expanding what people can search for and how they search for it. This leads to users coming to search more often for more of their information needs, driving additional search queries. Just this week, AI Overview started rolling out to more than 100 new countries and territories. It will now reach more than 1 billion users on a monthly basis. We are seeing strong engagement, which is increasing overall search usage and user satisfaction. People are asking longer and more complex questions and exploring a wider range of websites. What's particularly exciting is that this growth actually increases over time as people learn that Google can answer more of their questions. The integration of ads within AI Overviews is also performing well, helping people connect with businesses as they search. Circle to Search is now available on over 150 million Android devices with people using it to shop, translate text and learn more about the world around them. A third of the people who have tried Circle to Search now use it weekly, a testament to its helpfulness and potential. Meanwhile, Lens is now used for over 20 billion visual searches per month. Lens is one of the fastest-growing query types we see on search because of its ability to answer complex multimodal questions and help in product discovery and shopping. For all these AI features, it's just the beginning, and you will see a rapid pace of innovation and progress here. Next, Google Cloud. I'm very pleased with our growth. This business has real momentum and the overall opportunity is increasing as customers embrace GenAI. We generated Q3 revenues of \$11.4 billion, up 35% over last year with operating margins of 17%. Our technology leadership and AI portfolio are helping us attract new customers, win larger deals and drive 30% deeper product adoption with existing customers. Customers are using our products in five different ways. First, our AI infrastructure, which we differentiate with leading performance driven by storage, compute and software advances, as well as leading reliability and a leading number of accelerators. Using a combination of our TPUs and GPUs, LG AI research reduced inference processing time for its multimodal model by more than 50% and operating costs by 72%. Second, our enterprise AI platform, Vertex, is used to build and customize the best foundation models from Google and the industry. Gemini API calls have grown nearly 40x in a 6-month period. When Snap was looking to power more innovative experiences within their

My AI chatbot, they chose Gemini's strong multimodal capabilities. Since then, Snap saw over 2.5 times as much engagement with My AI in the United States. Third, customers use our AI platform together with our data platform, BigQuery, because we analyze multimodal data no matter where it is stored with ultra-low latency access to Gemini. This enables accurate real-time decision-making for customers like Hiscox, one of the flagship syndicates in Lloyd's of London, which reduced the time it took to code complex risks from days to minutes. These types of customer outcomes, which combine AI with data science have led to 80% growth in BigQuery ML operations over a 6-month period. Fourth, our AI-powered cybersecurity solutions, Google Threat Intelligence and Security operations are helping customers like BBVA and Deloitte prevent, detect and respond to cybersecurity threats much faster. We have seen customer adoption of our Mandiant-powered threat detection increased 4x over the last 6 quarters. Fifth, in Q3, we broadened our applications portfolio with the introduction of our new customer engagement suite. It's designed to improve the customer experience online and in mobile apps, as well as in call centers, retail stores and more. A great example is Volkswagen of America, who is using this technology to power its new myVW Virtual Assistant. In addition, the employee agents we delivered through Gemini for Google Workspace are getting superb reviews. 75% of daily users say it improves the quality of their work. Moving now to YouTube. For the first time ever, YouTube's combined ad and subscription revenue over the past four quarters has surpassed \$50 billion. Together, YouTube TV, NFL Sunday Ticket and YouTube Music Premium are driving subscription growth for the platform. And we are leaning into the living room experience with multi-view and a new option for creators to organize content into episodes and seasons, similar to traditional TV. At Made on YouTube, we announced that Google DeepMind's most capable model for video generation VO is coming to YouTube Shorts to help creators later this year. Next, platforms and devices. Gemini's deep integration is improving Android. For example, Gemini Live lets you have free flowing conversations with Gemini. People love it. It's available on Android, including Samsung Galaxy devices. We continue to work closely with them to deliver innovations across their newest devices with much more to come. At Made by Google, we unveiled our latest Pixel 9 series of devices featuring advanced AI models, including Gemini Nano. We have seen strong demand for these devices, and they've already received multiple awards. Turning to Other Bets. I want to highlight Waymo, the biggest part of our portfolio. Waymo is now a clear technical leader within the autonomous vehicle industry and creating a growing commercial opportunity. Over the years, Waymo has been infusing cutting-edge AI into its work. Now each week, Waymo is driving more than 1 million fully autonomous miles and serves over 150,000 paid rides. The first time any AV company has reached this kind of mainstream use. Through its expanded network and operations partnership with Uber in Austin and Atlanta, plus a new multiyear partnership with Hyundai, Waymo will bring fully autonomous driving to more people and places. By developing a universal driver, Waymo has multiple paths to market. And with its sixth generation system, Waymo significantly reduced unit costs without compromising safety. Before I close, I'm delighted to welcome our new CFO, Anat. We are thrilled to have her on board, and you will hear from her shortly. And as always, I want to express my gratitude to our employees worldwide. Your dedication and hard work have made this another exceptional quarter for Alphabet. Now over to you, Philipp.

Philipp Schindler

Thanks, Sundar, and hello, everyone. I'll start with performance for the quarter and then describe the progress we're seeing across ads, YouTube and partnerships, highlighting the impact AI is already having on our business. Google Services delivered revenues of \$76.5 billion for the quarter, up 13% year-on-year. Search and other revenues grew 12% year-on-year, led by growth in the financial services vertical due to strength in insurance, followed by retail. YouTube ads revenues grew 12% year-on-year, driven by brand, closely followed by direct response. Network revenues were down 2% year-on-year. In subscriptions, platforms and devices, year-on-year revenues were up 28%, driven by growth in subscriptions as well as the launch of our Made by Google devices in the third quarter. Before I double-click into ads, YouTube and partnerships, a few comments on search. Whether they're using their voice to find answers on the go or opening their camera to explore the world around them, people are expanding how they ask questions in search as well as the type of questions they ask. New behaviors create new opportunities to help us connect businesses and consumers via amazing commercial experiences. As GenAI expands what's possible, we continue to see a significant opportunity in search. Let me take a minute to explain why. AI really supercharges search. Our new AI-powered features make searches more helpful, and we continue to see great feedback, particularly from younger users. For example, with Circle to Search, where we see higher engagement from users aged 18 to 24. AI is expanding our ability to understand intent and connect it to our advertisers. This allows us to connect highly relevant users with the most helpful ad and deliver business impact to our customers. Let me share two new ad experiences we have rolled out alongside our popular AI-powered features in search. First, as you heard from Sundar, every month, Lens is used for almost 20 billion visual searches with 1 in 4 of these searches having commercial intent. In early October, we announced product search on Google Lens. And in testing this feature, we found that shoppers are more likely to engage with content in this new format. We're also seeing that people are turning to Lens more often to run complex multimodal queries, voicing a question or inputting text in addition to a visual. Given these new user behaviors, earlier this month, we announced the rollout of shopping ads above and alongside relevant Lens visual search results to help better connect consumers and businesses. Second, AI Overviews, where we have now started showing search and shopping ads within the overview for mobile users in the U.S. As you remember, we've already been running ads above and below AI Overviews. We're now seeing that people find ads directly within AI Overviews helpful because they can quickly connect with relevant businesses, products and services to take the next step at the exact moment they need. As I've said before, we believe AI will revolutionize every part of the marketing value chain. Let's start with creative. Advertisers now use our Gemini-powered tools to build and test a larger variety of relevant creatives at scale. Audi used our AI tools to generate multiple video image and text assets in different links and orientations out of existing long-form videos. It then fed the newly generated creatives into demand gen to drive reach, traffic and booking to their driving experience. The campaign increased website visits by 80% and increased clicks by 2.7 times, delivering a lift in their sales. Last week, we updated image generation at Google Ads with our most advanced text-to-image model, Imagine 3, which we tuned using ads performance data from multiple industries to help customers produce high-quality imagery for their campaigns. Advertisers can now create even higher-performing assets for PMax, Demand Gen app and Display campaigns. Turning to media buying. AI-powered campaigns help advertisers get faster feedback on what creatives work, where and redirect their media buying. Using Demand Gen, DoorDash tested a mix of image and video assets to drive more impact across Google and YouTube's visually immersive surfaces. They saw a 15 times higher conversion rate at a 50% more efficient cost per action when compared to video action campaigns alone. Last and most importantly, measurement. This quarter, we extended availability of our open source marketing mix model, Meridian to more customers, helping to scale measurement of cross-channel budgets to drive better business outcomes. On YouTube, we remain focused on building a platform that enables creators to thrive and unlocking a whole new world of creativity with AI. Creators are at the heart of the YouTube ecosystem and the content they are making is driving robust growth in watch time across the platform. We're also using AI to greatly improve recommendations on YouTube. Driven by Gemini, our large language models have a deeper understanding of video content and viewers' preferences. As a result, they can recommend more relevant, fresher and personalized content to the viewer. Short-form creation continues to thrive on YouTube. Shorts monetization improved again this quarter, and we continue to significantly close the gap with in-stream video, particularly in the U.S. and other more highly monetizing markets. Of all the channels uploading to YouTube each month, 70% are uploading shorts. And we recently announced a top requested feature, the ability to upload shorts up to 3 minutes long. Also, advertisers can now book first position on Shorts blocks in close to 40 markets. We're unlocking more opportunities in the living room. Our momentum here continues as we maintain our status as the number one streamer in the U.S. according to Nielsen. This is driven by the strength of our creators, such as Michelle Carr and Rhett & Link, who are increasingly crafting experiences designed specifically for the big screen, and it's paying off. The number of creators making the majority of the YouTube revenue on TV screens is up more than 30% year-on-year. YouTube is becoming a premier destination for sports watching. People come for the game and stay for the commentary and around the game content from creators like Evelyn Gonzalez, Adam W and Brad Coleman. During the Olympics, content from

Paris 2024 had over 12 billion views on YouTube. More than 850 million unique viewers watched over 40 billion minutes of content with 35% on their TV screens. And recently, we kicked off our second season of NFL Sunday Ticket on YouTube TV, which continues to receive a positive reception from advertisers, our partners at the NFL and fans. We have continued to invest in our product experience with improvements to multiview and deeper integrations for fantasy football fans. Following up on my remarks from last quarter about Brandcast, we had a strong upfront performance with commitments up about 20% year-on-year. As always, let me wrap with the strong momentum we're seeing in partnerships. More and more of our partners are recognizing the breadth of our technologies and building solutions that leverage the very best of Google. For example, our recently announced strategic partnership with Vodafone Group spans Google Cloud, AI, Android ads and digital services. This multibillion-dollar partnership will bring these technologies to more than 330 million customers across Europe and Africa. We are collaborating on more than 30 initiatives across 7 areas, including generative AI from consumers, a best-in-class TV platform, hardware and cybersecurity. With that, a heartfelt thank you to Google everywhere for their extraordinary commitment and to our customers and partners for their continued collaboration and trust. Anat, welcome to the team. It's great to have you with us. Over to you.

Anat Ashkenazi

Thank you, Philipp. And thanks, Sundar, for the words of welcome. My comments will focus on year-over-year comparisons for the third quarter, unless I state otherwise. I will start with the results at the Alphabet level and will then cover our segment results. I'll end with high-level commentary on investment at the Alphabet level. We had another strong quarter in Q3 with robust momentum across the business. Consolidated revenue increased by 15% or 16% in constant currency. Search remained the largest contributor to revenue growth, followed by a robust 35% growth in cloud. Total cost of revenue was \$36.5 billion, up 10%. Tech was \$13.7 billion, up 9%. We continue to see a revenue mix shift with Google Search growing at double-digit levels, while network revenue, which have a much higher TAC rate declined. Other cost of revenue was \$22.8 billion, up 11%, with the increase primarily driven by content acquisition costs, primarily for YouTube, an increase in depreciation associated with higher level of investment in our technical infrastructure and higher hardware costs associated with the pull forward of our Made by Google launches from the fourth to the third quarter. Total operating expenses increased 5% to \$23.3 billion. The increase was primarily driven by facilities-related charges as results of actions were taken to further optimize our office space footprint globally, followed by depreciation, partially offset by year-on-year decline in charges for legal and other matters. R&D investments increased by 11%, primarily driven by increases in compensation and depreciation expenses. Sales and marketing expenses increased 5%, primarily reflecting investment in advertising and promotional efforts related to the Made by Google launches, as well as for AI and Gemini. G&A expenses declined by 10%, primarily due to lower charges for legal and other matters. Operating income increased 34% to \$28.5 billion and operating margin increased to 32%. Net income increased 34% to \$26.3 billion and earnings per share increased 37% to \$2.12. We're pleased with the progress we're making in reengineering our cost structure, which is reflected in our operating margin expansion this quarter, while also continuing to invest in the business to bring innovation to consumers, creators and enterprises. We delivered free cash flow of \$17.6 billion for the third quarter and \$55.8 billion for the trailing 12 months. Year-on-year free cash flow was negatively impacted by the following items. In 2023, we deferred cash tax payments from the second and third quarter to the fourth quarter. And in Q3 2024, we made a \$3 billion cash payment related to the 2017 EC shopping fine. We ended the quarter with \$93 billion in cash and marketable securities. Now turning to segment results. Google Services revenue increased 13% to \$76.5 billion. Google Search and other advertising revenue increased by 12% to \$49.4 billion. The robust performance of search was broad-based across verticals, led by the financial services vertical due to strength in insurance followed by retail. YouTube advertising revenue increased 12% to \$8.9 billion, driven by brand, followed by direct response advertising. As Philipp mentioned, we're seeing strong momentum in YouTube, including robust growth in watch time across the platform and are excited about the new features and products we're bringing to creators. Network advertising revenue of \$7.5 billion were down 2%. In the third quarter, the year-on-year growth in all our advertising revenue lines was impacted by the increase in strength in advertising revenue in Q3 of last year, in part from APAC-based retailers. Subscription platforms and devices revenue increased 28% to \$10.7 billion, reflecting growth in subscription revenues, as well as the launch of our Made by Google devices in the third quarter. We continue to have significant growth in our subscription products, driven primarily by YouTube TV and YouTube Music Premium, as well as Google One, primarily due to increases in the number of paid subscribers. With regards to platforms, we're pleased with the performance in play, primarily driven by an increase in buyers. Google Service operating income increased by 29% to \$30.9 billion, and operating margin was 40%. Turning to the Google Cloud segment, which continued to deliver very strong results this quarter. Revenue increased by 35% to \$11.4 billion in the third quarter, reflecting accelerated growth in GCP across AI infrastructure, generative AI solutions and core GCP products. Once again, GCP grew at a rate that was higher than cloud overall. We also saw strong Google Workspace growth, primarily driven by increases in average revenue per seat. As you just heard from Sundar, the robust innovation and expanded AI offerings within our cloud business are allowing existing and new customers to realize measurable business benefits, including reduced cost, greater customer engagement, faster response time and better revenue conversion. Google Cloud operating income increased to \$1.9 billion and operating margin increased to 17%. The operating margin expansion was driven by strong revenue performance across cloud AI products, core GCP and Workspace, as well as ongoing efficiency initiatives. As to our Other Bets, for the third quarter revenue were \$388 million and operating loss was \$1.1 billion. I'll highlight just a couple of accomplishments in the quarter for Waymo and Wing. We're excited about the progress we're seeing in Waymo, as Sundar mentioned, and the increase in the number of paid rides. We're planning to continue to expand our geographic coverage and reach more customers in existing markets and new markets. Wing, our drone delivery company, recently passed the 1-year anniversary of scaling its partnership with Walmart in the Dallas-Fort Worth area, now operating in 11 stores and serving 26 different cities and towns. Turning to Alphabet level activities. The largest component of this line is our investment in AI research and development activities, which support all of Alphabet. There were two notable items that impacted the operating loss in Alphabet level activities. First, a \$607 million charge related to decisions we've made to further optimize our physical footprint and office space globally; and second, our ongoing investments in AI R&D, including the full quarter effect of the organizational changes we've made in May to move some additional AI teams from Google Services to Google DeepMind. With respect to CapEx, our reported CapEx in the third quarter was \$13 billion, reflecting investment in our technical infrastructure with the largest component being investment in servers, followed by data centers and networking equipment. Looking ahead, we expect quarterly CapEx in the fourth quarter to be at similar levels to Q3, keeping in mind that the timing of cash payments can cause variability in quarterly reported CapEx. Our expansion of data center capacity is expected to bring economic benefits to countries and communities where we are investing. In the third quarter alone, we made announcements of over \$7 billion in planned data center investments with nearly \$6 billion of that in the U.S. In Q3, we also returned value to shareholders in the form of \$15.3 billion in share repurchases and \$2.5 billion in dividend payments. Overall, we returned a total of nearly \$70 billion over the trailing 12 months to shareholders. As we look forward, we're working to balance our investments in AI and other growth areas with the cost discipline needed to fund those activities. As we think about the remainder of 2024, there are a couple of dynamics to consider. In terms of revenue, year-on-year growth in advertising revenue will continue to be impacted by the increasing strength in advertising revenue in the second half of 2023, in part from APAC-based retailers. And there will be a headwind to year-over-year growth in subscription platforms and devices revenue in the fourth quarter due to the pull forward of our Made by Google launches into the third quarter this year. In terms of expenses, we'll continue to see increases in depreciation and expenses associated with higher level of investment in our technical infrastructure, partially offset by a slight benefit from the cost revenue associated with our devices due to the pull forward of hardware launches into Q3. Now before going into Q&A, as the new CFO, I would like to share a few thoughts on how I'm approaching and thinking through growth, cost structure and capital allocation and expect to hear more from me on these topics in the coming quarters. As I look at the business, I see opportunities for further growth propelled by AI and the underlying momentum across the business. You heard about some of these on the call today. I also believe that we are well positioned to

deliver meaningful innovation, which will translate to revenue given our strength in the core pillars that are required to succeed in AI at scale. Realizing those opportunities and great innovation in AI requires global reach, which we have through our products and platforms, as well as continued meaningful capital investment. And while we have a strong balance sheet to be able to support these investments, we will be looking for efficiencies so that we can fund innovation in priority areas. Sundar, Ruth and our leadership team started important work to reengineer our cost structure including efforts such as optimizing our headcount growth, our physical footprint, improving the efficiencies of our technical infrastructure and streamlining operations across the company through the use of AI. I plan to build on these efforts, but also evaluate where we might be able to accelerate work and where we might need to pivot to free up capital for more attractive opportunities. Thank you. Sundar, Philipp and I will now take your questions.

Operator

Thank you. [Operator Instructions] And our first question comes from Brian Nowak with Morgan Stanley. Your line is now open.

Brian Nowak

Thanks for taking my questions. I have a two-parter, Sundar. The first one, over the course of the last year plus, you've sort of showcased a lot of different types of new GenAI enabled search products to sort of reimagine the search experience. Can you help us hone in on one or two of these products that you're most excited about that you think over the next 2 to 3 years could really lead to more durable multiyear search growth once they scale? And then the second one, just as we're sort of thinking through constraints to how quickly they come out, what are sort of the key constraints that you see to really reimagining search and scaling it out across 2 billion to 3 billion people? Thanks.

Sundar Pichai

Thanks, Brian. Great question. Look, it's been an extraordinary year of innovation. I mentioned in my remarks about Circle to Search Lens now with video search approaching over 20 billion queries a month and obviously, AI Overviews. And with each of these changes, we are definitely expanding what's possible in search. And it's been really heartening to see users adapt. They understand they can ask more queries. They come back more often. And so - and we have seen growth there. I think we are with very - while we've rolled out AI Overviews to over 1 billion users, there is a lot more innovation there we are actively working on. So I expect search to continue to evolve significantly in 2025, both in the search product and in Gemini. And so I think that's the opportunity ahead. I think we are in early days of what is a powerful new technology. And with it, I think we can do a lot more for our users, but at the same time, underpin it on the foundational bedrock of quality and trust and user experience, which we have always done. So we are at 1 billion people. I don't necessarily see a constraint there. Obviously, things like latency, cost per query, et cetera. But as you've seen us over the past 18 months make substantial progress. So we'll continue rolling it out more, and we'll keep evolving it. I think search, if I were to take a 12-month outlook, I think is going to continue to evolve and we'll be at the forefront of that innovation.

Operator

Our next question comes from Doug Anmuth with JPMorgan. Your line is now open.

Doug Anmuth

All right. Thanks for taking the question. Perhaps for Sundar and Anat. Can you talk more about the infrastructure advantages and CapEx efficiencies you've generated from Google's own TPUs? And how does that influence your CapEx spending going forward relative to peers and other leading cloud service providers? Thanks.

Sundar Pichai

Thanks, Doug. I'll take the first part and Anat can give color on the CapEx spending part. Look, I think one of the - we are well positioned because in our AI infrastructure, we have a comprehensive solution set, right? We have all the leading AI accelerators GPUs, TPUs as well as CPUs, and we are investing in all of them. We have a wonderful partnership with NVIDIA. We are excited for the GB200s, and we'll be one of the first to provide it at scale. On the TPU front, I think we have - not only are we in our sixth generation. I just spent some time with the teams on the road map ahead. I couldn't be more excited at the forward-looking road map, but all of it allows us to both plan ahead in the future and really drive an optimized architecture for it. And I think because of all this, both we can have best-in-class efficiency, not just for internal at Google, but what we can provide through cloud, and that's reflected in the growth we saw in our AI infrastructure and GenAI services on top of it. So I'm pretty excited about how we are set up, and we'll continue executing there. And maybe Anat can give comments on the CapEx spending.

Anat Ashkenazi

Yeah, sure. So let me provide a little more color on our capital investments and certainly an important area in the - this time of investments in AI. As you saw in the quarter, we invested \$13 billion in CapEx across the company. And as you think about it, really it's divided into two categories. One is our technical infrastructure, and that's the majority of that \$13 billion. And the other one goes into areas such as facilities, the Bets and other areas across the company. Within TI, we have investments in servers, which includes both TPUs and GPUs. And then the second categories are data centers and networking equipment. This quarter, approximately 60% of that investment in technical infrastructure went towards servers and about 40% towards data center and networking equipment. And as you think about them, we offer both GPUs and TPUs both internally and to our customers. So we have choices and options based on what our customer needs and what our internal needs are. And as you think about the next quarter and going into next year, as I mentioned in my prepared remarks, we will be investing in Q4 at approximately the same level of what we've invested in Q3, approximately \$13 billion. And as we think into 2025, we do see an increase coming in 2025, and we will provide more color on that on the Q4 call, likely not the same percent step-up that we saw between '23 and '24, but additional increase.

Sundar Pichai

The one other thing I would add on the - Doug, on your first part of the question on the TPUs is if you look at the flash pricing we have been able to deliver externally, I think - and how much more attractive it is compared to other models of that capability, I think probably that gives a good sense of the efficiencies we can generate from our architecture. And so - and we are doing the same that for internal use as well. The models for search, while they keep going up in capability, we've been able to really optimize them for the underlying architecture, and that's where we are seeing a lot of efficiencies as well.

Doug Anmuth

Thank you.

Operator

Your next question comes from Eric Sheridan with Goldman Sachs. Your line is now open.

Eric Sheridan

Thank you for taking the question. And Anat congrats on the new role. And welcome to Alphabet. Sundar, maybe one for you on Waymo. What are the key learnings as Waymo has rolled out to additional cities in terms of consumer adoption of the product and how you think about go-to-market strategies for Waymo? And then maybe one for Philipp. In terms of looking at YouTube trends by long-form versus short-form video or shorts, how are you seeing consumption versus monetization trends continue to evolve for YouTube as broken down maybe in that means? Thank you.

Sundar Pichai

Thanks, Eric. On Waymo, obviously, it's been an exciting year, both in the Phoenix market and in San Francisco. We've definitely scaled and particularly scaled paid rides and definitely surprised us on the positive in terms of how much consumers are loving the experience from a safety standpoint, privacy standpoint, reliability standpoint, et cetera. So I think all of that has been on the positive side. And obviously, the product will continue to improve. So for us, we are mainly focused on each city as we go, the pace at which we can now do additional city gets easier. So we are definitely accelerating that way. That's why we - you've seen us move into L.A. We're also striking partnerships in newer and unique ways. Hence, the Uber partnership and expansion to Austin and Atlanta. And we have more options where we are looking at the driven by Waymo model with other network partners, fleet managers, et cetera. So it's an exciting moment, but we are still obviously being safety focused, but are looking to scale and testing out a variety of models and which will help us plan ahead well for 2025 and beyond.

Philipp Schindler

Yes. And to your question on YouTube Shorts, consumption versus monetization, maybe we start with the watch time. It continues to grow actually across YouTube with particular strength in shorts and in the living room. Just to give you a number, over 70 billion YouTube Shorts are watched every day. On the monetization side, the monetization rate of shorts relative to in-stream viewing is continuing to show a healthy rate of growth. The gap continues to narrow, particularly in the U.S. We also see it in other more highly monetizing markets. And we continue to work very closely with our advertisers. We're committed to providing them with very effective ways to reach the growing audience here. I talked about advertisers now being able to book first position on Shorts blocks. That's exciting. Shorts are also integrated into video reach campaigns, YouTube Select. So you're really giving brands the precise targeting options here. So yeah, we are pleased with the progress we're making here.

Operator

Our next question comes from Ross Sandler with Barclays. Your line is now open.

Ross Sandler

Hi, everybody. Thanks for taking the questions. Congrats, Anat. Two, if that's okay. So first, Sundar, given the high stakes around native AI product usage, are there any milestones you can share around where Gemini usage is compared to the 250 million weekly active users that ChatGPT is seeing right now? And then the second question is, I'm sure this is something you guys have been thinking about for a while, but it looks like the way that the Google versus DOJ search trial is going, there's a decent likelihood that the Apple ISA contract and some of the Android pre-install contracts are going to be voided out at some point in the future. So I guess the question is, what plans do we have in place to recapture some of the usage that might be going away in those search access points? How can we gain share on iOS queries if the Safari toolbar access point were to change? Thank you very much.

Sundar Pichai

Thanks, Ross. Look, I think, you know, obviously, we are serving Gemini across a lot of touch points, including it's now over 1 billion people are using it in search accessing. We are getting it across our products. The Gemini app itself has very strong momentum on user growth. Our API volume, I commented on the Gemini APIs having gone up 14x in the past 6 months. So we are seeing growth across the board. And the Gemini integration into Google Assistant is going super well on Android. The user feedback is positive. So we are continuing to roll that out more. So I think we'll - you will see us we are investing in the next generation of models. And as part of that, we are investing in scaling up the usage of the - both directly to the models as both on the consumer and the developer side. So I think I'm pleased with the momentum there. On the second - on the legal trials, obviously, I don't want to - it's not appropriate for me to speculate given it's in the middle of ongoing litigation. But what I would say is stepping back, look, we've always and even as the court acknowledged, clearly, we have reached a position of success because we have deeply innovated, and we are continuing to do so. People have chosen us because they view it as the best product, be it consumers or partners. And we have a long track record of working hard to make sure our products are as easily available to users as possible across all platforms. So all that approach and all the learnings over the years, I think, will all be - will give us a strong foundation. First of all, we plan to vigorously defend these cases. And some of the early proposals from the DOJ, et cetera, have been far reaching. And we plan to - I think they could have unintended consequences, particularly to the dynamic tech sector and the American leadership there. And so we plan to be - we plan to engage very vigorously there. Thanks.

Ross Sandler

Thank you.

Operator

Your next question comes from Justin Post with BAML. Your line is now open.

Justin Post

Great. Thank you. I wanted to ask a little bit more about AI Overviews, maybe two parts. You mentioned you're seeing increasing queries or activity. Could you help us understand that for the billion users who have had access to the product, what you're seeing there? And then on the monetization side, is there a chance that AI Overviews would help monetize some of the information queries that maybe you weren't making much monetization from with old formats? Thank you.

Sundar Pichai

Thanks, Justin. Look, I think the main thing I would say is as we have rolled out, we're obviously now scaling it out. We just rolled it out to 100 new countries and territories, and that's what will get us to billion users. But amongst the users where we had already rolled out, we clearly see strong engagement. It's one of the most positive user satisfaction launches we have done in search. And it is increasing overall search usage, like people are asking more complex questions, different types of questions. They are exploring a wider range of websites. And what's particularly exciting is that this growth actually increases over time as people learn to adapt to that new behavior. So I'll stick to those comments. And I think - to the second part of your question on the monetization side, I think Philipp can answer more of that. Philipp?

Philipp Schindler

Yeah. So look, the transition here is working well, including for ads. As you know, we recently launched ads within AI Overviews on mobile in the U.S. And this really builds on our previous rollout of ads above and below the AI Overviews. So overall, for AI Overviews, we see monetization at approximately the same rate, which gives us a really strong base on which we can innovate even more. And specifically to your question of monetizing queries where we can monetization potentially at the moment, yes, I can see that there is opportunity for that.

Justin Post

Thank you.

Operator

Your next question comes from Michael Nathanson with MoffettNathanson. Your line is now open.

Michael Nathanson

Thanks. I have one for Sundar. Sundar, there was this perception and even false that Alphabet was not as innovative on AI as they should. And it clearly shows that that was wrong. You're moving pretty quickly rolling out new products. Can you talk a bit about how you may have changed your structure? I know you've combined some assets, but talk a bit about how you've maybe rethought how you go to market with some of your innovation products? And maybe what's changed operationally as AI has picked up steam for you guys?

Sundar Pichai

Thanks, Michael. Look, I definitely think it's an extraordinary opportunity. And I think the company, given the important moment, we had to gear up to build models from scratch that could be productionized at scale on our architecture. And that's what the Gemini era was about. So there was a fixed cost of getting it all set up and getting the Gemini era underway. But now I think we are in much more of a virtuous cycle with a lot of velocity in the underlying models. We've had two generations of Gemini model. We are working on the third generation, which is progressing well. And teams internally are now set up much better to consume the underlying model innovation and translate that into innovation within their products. So now all the seven products, which have 2 billion users each have done their first versions of incorporating Gemini, and there is aggressive road map ahead for 2025. I mentioned earlier, search alone. I think there's a lot more we can do. And we are also enabling smaller teams to ship newer experiences and Notebook LM was the first instantiation of those types of efforts as well. Through it all, within, we had to do this when the company evolved from desktop to mobile. We are restructuring the company. Effectively, if you think of Google as a neural network, we are forming new synapses, which work much better to adapt to this moment. And I think that sets us up well for the year ahead. And we are bringing all of this innovation to the outside world through cloud as well. And so we are going to do that. And so that's an additional opportunity at this moment.

Michael Nathanson

Thanks, Sundar.

Operator

Our next question comes from Mark Mahaney with Evercore. Your line is now open.

Mark Mahaney

Okay. I'd like to ask two questions, please, to Anat. First, the margins at cloud have really started to ramp nicely. There are comps in the industry with still materially higher operating margins. I imagine that's a matter of scale and trying to catch up from a third place position. But how do you think about the margin trends that you're seeing? And what's your level of confidence that those margins can kind of match up to other industry players that are doing closer to 30% margins? And then secondly, just across the board, when you think about the business that's running at, what, 32% operating margins this last quarter, and you come in looking at this fresh, is it clear to you that there are a lot of kind of newfound cost efficiencies or ongoing cost efficiencies? Like what do you see as the biggest opportunities to kind of take those margins and maybe over time, take them materially higher? Thank you very much.

Anat Ashkenazi

Thanks, Mark, for both of these questions. Let me start on the cloud margin. So certainly, very pleased to see not just the top line growth rate, but the margin expansion to 17%, really outstanding work by our cloud team to drive continued benefit to customers. And as you think about that margin expansion, really, it's a few things. You've mentioned one of them. The first is scale. Obviously, as we scale the business, we have more opportunity for margin expansion. But the second, and shouldn't be underestimated is the work the team has done to drive efficiencies across the cloud business, and we're seeing those come through, whether it's through headcount management or facilities management, other process efficiencies. We're seeing that go to the bottom line and driving the results

you're seeing this quarter. Hard to obviously compare to any of our peers or competitors. It's a different business, but more to come. Now the one thing to remember, and I mentioned this in my prepared remarks, this is an area that requires investment. And a lot of these investments, you think about servers, et cetera, is based on demand we're seeing from customers. So this will translate to revenue in the fairly short term. But that means there are headwinds associated with the - overall, the annual run rate or costs associated with these investments, whether it's in the form of depreciation or just construction costs that are not capitalized, et cetera. So we'll continue to drive efficiency in the business to try and offset some of these. But this is how I'm thinking about the dynamics for cloud. Overall, for the business, this is one of my key priorities is to look across the organization to see what we can do in terms of driving further efficiencies. There's really good work that was done started by Ruth, Sundar and the rest of the lead team to reengineer the cost base. But I think any organization can always push a little further. And I'll be looking at additional opportunities really across all the elements that I've mentioned in my prepared remarks, think not just about the size of the organization, but mostly how we operate and how we run the business. And I think when you simplify the organization, Sundar just made a few comments on that. When we use AI within our own processes and how we get work done, there are some efficiencies or opportunities for efficiencies. Now all of that will go against substantial increases in capital investment, as I've mentioned, going into 2025. And again, I'll give more color when we are on the Q4 call. So hopefully, we'll be able to drive efficiencies to work towards offsetting some or all of that increase.

Mark Mahaney

Thank you very much.

Operator

Our next question comes from Ken Gawrelski with Wells Fargo. Your line is now open.

Ken Gawrelski

Thank you so much. Two, if I may. First, just on search, why does it make sense to have completely - why doesn't it make sense to have two completely different search experiences. One, an agent-like answers engine, and then two, a links-based more traditional search engine. You could innovate on both and let the consumer decide. It's - maybe think of it as the ultimate A/B test. So I'd be curious to get your thoughts there. And then the second, if you could touch a little bit on the consumer environment in 4Q. Perhaps nobody has a better view into the health of the consumer in multiple verticals. If you could talk a little bit about - you talked about tougher comps on the Asia e-commerce side, but any other trends you could point out be around the election or fewer holiday days this year, that would be really helpful. Thank you.

Sundar Pichai

Why don't I take the first part and then Philipp can give color on the consumer vertical trends. On the first part, look, in this moment, people are using a lot of buzzwords like answer engines and all that stuff. I mean, Google started answering questions about 10 years ago in our search product with featured snippets. So look, I think ultimately, you are serving users. User expectations are constantly evolving. And we work hard to stay a step ahead, anticipate and stay a step ahead. And this is why we've kind of really brought multimodality on the input side and the output side in search pretty natively. And so we'll continue expanding innovations there. I do think having two surfaces for us allows us to experiment more. And there are - I view this moment as moment in which there are new use cases which we will be able to do, which we couldn't have done before. And so having the flexibility, having product surfaces where we can move very, very fast, I think, is actually helpful. And so we are embracing it and going to lean into this moment like we have done in the past year, and I think that will play out well for users. Philipp?

Philipp Schindler

Yes. On the vertical trends, look, I called out search and other revenues being led by growth in the financial services due to improved economics in the insurance industry, followed by retail. But I think it's fair to say, in general, we saw broad-based strength across all verticals, maybe specifically to election-related ad spend. We had a slight tailwind from election-related ad spend in the third quarter, which was a little bit more pronounced in YouTube ads.

Operator

And our last question comes from Stephen Ju with UBS. Your line is now open.

Stephen Ju

Thank you so much. Hi, Sundar. I think in two separate blog posts from Google Cloud, talking about the real-life use cases for GenAI, I think you highlighted what was a pretty material increase in a number of companies that are starting to turn their, I guess, ideas into products. I think it was like an 80% increase in the 6-month period. And I think you guys also published some survey data saying that your customers are generating tangible ROI there. So can you update us on what you're seeing in terms of sales cycles, perhaps accelerating? And how much of the heavy lifting the cloud team may have to do to help your customers turn those ideas into reality more quickly? And Philipp, I think one of the feedbacks that we're getting from advertisers is that while the initial use case for PMax for them was in search, they're starting to use it more and more for mid and upper funnel campaigns and budgets as well. So can you talk about whether that's an anecdote or something that you're already seeing perpetuate among all of your advertisers? Thank you.

Sundar Pichai

On the cloud side, look, I think you - sorry, on the cloud side, look, I do think you hinted in your question itself. Definitely, customers are leaning in this moment, wherever we have been working, we are definitely seeing real concrete proof points delivering real impact, right, be it in their user experience, be it in the bottom line, et cetera. And so I gave a few examples on my remarks. And I think customers are getting savvier. We ourselves are going through a lot of learnings, both in deploying this within Google as an enterprise and bringing those learnings to our customers outside. And as we see common patterns across the breadth of sectors we serve in, I think we are bringing those learnings. So I would say, if anything, I think over time, I think organizations are beginning to understand more. They are leaning in. Our models are getting better. We are building more comprehensive solutions on top of it. So I think we are well set up for 2025, and I think there will be continued momentum in this area.

Philipp Schindler

And on the PMax side, look, we continue to see success with PMax. And we see those success stories really from large advertisers, from agencies, from SMBs across marketing objectives, across different verticals. It's very cost effective, and it really finds customers wherever they are across all the different Google channels. And with the introduction of Gemini, we added a lot of new features to PMax. For example, to deliver more powerful performance, help advertisers scale, build high-quality creative assets and so on. But going directly to your question on the funnel, also keep in mind, we have a great product with Demand Gen that is all about inspiring consumers beyond the initial awareness and to take action. And we think Demand Gen is actually a very powerful tool to win in today's marketplace with marketers, and we can't wait to see actually what more value it will drive.

Stephen Ju

Thank you.

Operator

Thank you. And that concludes our question-and-answer session for today. I'd like to turn the conference back over to Jim Friedland for any further remarks.

Jim Friedland

Thanks, everyone, for joining us today. We look forward to speaking with you again on our fourth quarter 2024 call. Thank you, and have a good evening.

Operator

Thank you, everyone. This concludes today's conference call. Thank you for participating. You may now disconnect.