

# PART II

## ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

As of October 2, 2015, Alphabet Inc. became the successor issuer of Google Inc. pursuant to Rule 12g-3(a) under the Exchange Act. Our Class A common stock has been listed on the Nasdaq Global Select Market under the symbol "GOOG" since August 19, 2004 and under the symbol "GOOGI2" since April 3, 2014. Prior to August 19, 2004, there was no public market for our stock. Our Class B common stock is neither listed nor traded. Our Class C capital stock has been listed on the Nasdaq Global Select Market under the symbol "GOOG" since April 3, 2014.

### Holdings of Record

As of December 31, 2021, there were approximately 4,907 and 1,733 stockholders of record of our Class A common stock and Class C capital stock, respectively. Because many of our shares of Class A common stock and Class C capital stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders. As of December 31, 2021, there were approximately 64 stockholders of record of our Class B common stock.

### Dividend Policy

We have never declared or paid any cash dividend on our common or capital stock. The primary use of capital continues to be to invest for the long-term growth of the business. We regularly evaluate our cash and capital structure, including the size, pace, and form of capital return to stockholders.

### Issuer Purchases of Equity Securities

The following table presents information with respect to Alphabet's repurchases of Class A common stock and Class C capital stock during the quarter ended December 31, 2021:

Period	Total Number of Class A Shares Purchased (in thousands)(1)	Total Number of Class C Shares Purchased (in thousands)(1)	Average Price Paid per Class A Share(2)	Average Price Paid per Class C Share	Total Number of Shares Purchased as Part of Publicly Announced Programs (in thousands)(1)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Program (in millions)
October 1 - 31	126	1,445	\$ 2,812.76	\$ 2,794.72	1,571	\$ 26,450
November 1 - 30	289	1,393	\$ 2,943.97	\$ 2,956.73	1,682	\$ 21,479
December 1 - 31	250	1,169	\$ 2,880.79	\$ 2,898.56	1,419	\$ 17,371
Total	665	4,007			4,672	

(1) The repurchases are being executed from time to time, subject to general business and market conditions and other investment opportunities, through open market purchases or privately negotiated transactions, including through Rule 10b5-1 plans. The repurchase program does not have an expiration date. See Note 11 of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for additional information related to share repurchases.

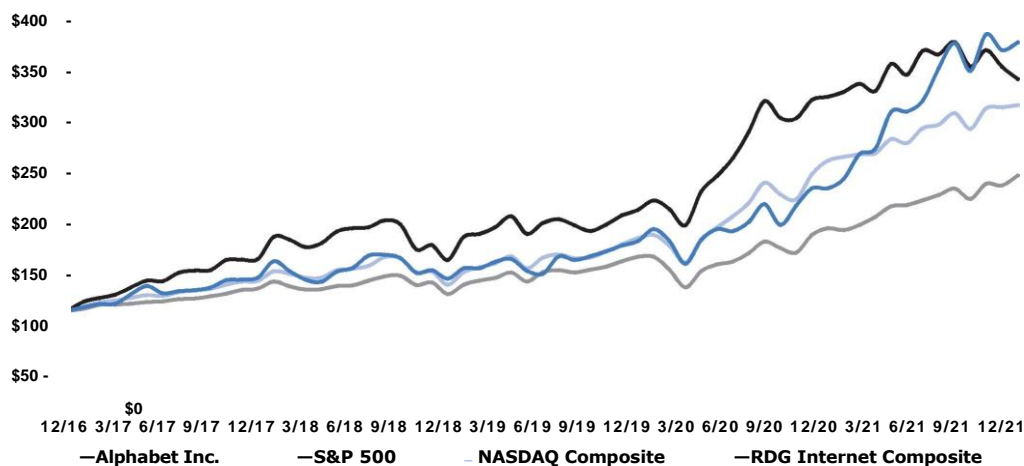
(2) Average price paid per share includes costs associated with the repurchases.

## Stock Performance Graphs

The graph below matches Alphabet Inc. Class A's cumulative 5-year total stockholder return on common stock with the cumulative total returns of the S&P 500 index, the NASDAQ Composite index, and the RDG Internet Composite index. The graph tracks the performance of a \$100 investment in our common stock and in each index (with the reinvestment of all dividends) from December 31, 2016 to December 31, 2021. The returns shown are based on historical results and are not intended to suggest future performance.

### COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN\*

ALPHABET INC. CLASS A CAPITAL STOCK  
Among Alphabet Inc., the S&P 500 Index,  
the NASDAQ Composite Index and the RDG Internet Composite Index

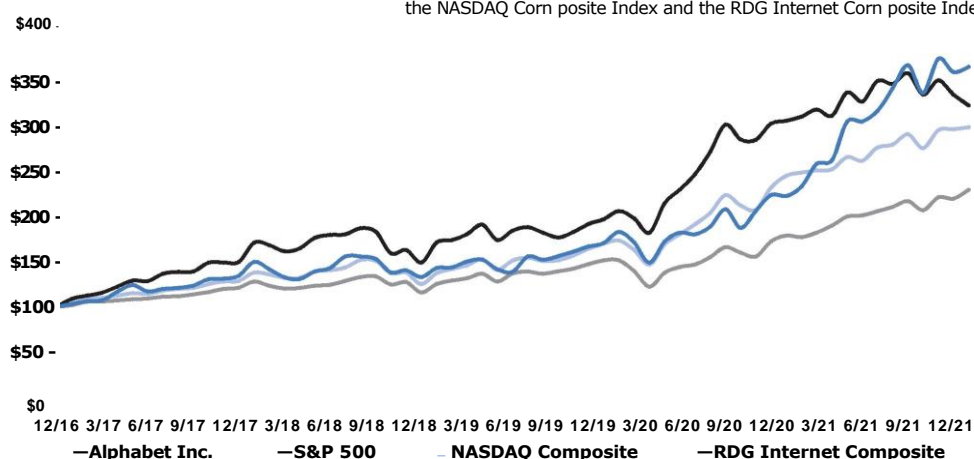


\*\$100 invested on December 31, 2016 in stock or in index, including reinvestment of dividends. Fiscal year ending December 31.  
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The graph below matches Alphabet Inc. Class C's cumulative 5-year total stockholder return on capital stock with the cumulative total returns of the S&P 500 index, the NASDAQ Composite index, and the RDG Internet Composite index. The graph tracks the performance of a \$100 investment in our Class C capital stock and in each index (with the reinvestment of all dividends) from December 31, 2016 to December 31, 2021. The returns shown are based on historical results and are not intended to suggest future performance.

### COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN\*

ALPHABET INC. CLASS C COMMON STOCK  
Among Alphabet Inc., the S&P 500 Index,  
the NASDAQ Composite Index and the RDG Internet Composite Index



\*\$100 invested on December 31, 2016 in stock or in index, including reinvestment of dividends. Fiscal year ending December 31.  
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## ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Please read the following discussion and analysis of our financial condition and results of operations together with "Note about Forward-Looking Statements," Part I, Item 1 "Business," Part I, Item 1 A "Risk Factors," and our consolidated financial statements and related notes included under Item 8 of this Annual Report on Form 10-K.

We have omitted discussion of 2019 results where it would be redundant to the discussion previously included in Item 7 of our 2020 Annual Report on Form 10-K.

### Understanding Alphabet's Financial Results

Alphabet is a collection of businesses — the largest of which is Google. We report Google in two segments, Google Services and Google Cloud; we also report all non-Google businesses collectively as Other Bets. Other Bets include earlier stage technologies that are further afield from our core Google business. For further details on our segments, see Part I, Item 1 "Business" and Note 15 of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K.

### Trends in Our Business and Financial Effect

The following long-term trends have contributed to the results of our consolidated operations, and we anticipate that they will continue to affect our future results:

- **Users' behaviors and advertising continue to shift online as the digital economy evolves.**

The continuing shift from an offline to online world has contributed to the growth of our business since inception, contributing to revenue growth, and we expect that this online shift will continue to benefit our business.

- **Users are increasingly using diverse devices and modalities to access our products and services, and our advertising revenues are increasingly coming from new formats.**

Our users are accessing the Internet via diverse devices and modalities, such as smartphones, wearables and smart home devices, and want to be able to be connected no matter where they are or what they are doing. We are focused on expanding our products and services to stay in front of these trends in order to maintain and grow our business.

We are increasingly generating advertising revenues from different channels, including mobile, and newer advertising formats. The margins on advertising revenues from these channels and newer products have generally been lower than those from traditional desktop search. Additionally, as the market for a particular device type or modality matures, our revenues may be affected. For example, growth in the global smartphone market has slowed due to various factors, including increased market saturation in developed countries, which can affect our mobile advertising revenue growth rates.

We expect TAC paid to our distribution partners and Google Network partners to increase as our revenues grow and TAC as a percentage of our advertising revenues ("TAC rate") to be affected by changes in device mix; geographic mix; partner mix; partner agreement terms; the percentage of queries channeled through paid access points; product mix; the relative revenue growth rates of advertising revenues from different channels; and revenue share terms.

We expect these trends to continue to affect our revenue growth rates and put pressure on our margins.

- **As online advertising evolves, we continue to expand our product offerings, which may affect our monetization.**

As interactions between users and advertisers change, and as online user behavior evolves, we continue to expand and evolve our product offerings to serve these changing needs. Over time, we expect our monetization trends to fluctuate. For example, we have seen an increase in revenues from ads on YouTube and Google Play, which monetize at a lower rate than our traditional search ads.

- **As users in developing economies increasingly come online, our revenues from international markets continue to increase and movements in foreign exchange rates affect such revenues.**

The shift to online, as well as the advent of the multi-device world, has brought opportunities outside of the U.S., including in emerging markets, such as India. We continue to invest heavily and develop localized versions of our products and advertising programs relevant to our users in these markets. This has led to a trend of increased revenues from emerging markets. We expect that our results will continue to be affected by our performance in these markets, particularly as low-cost mobile devices become more available. This trend could affect our revenues as developing markets initially monetize at a lower rate than more mature markets.

International revenues represent a significant portion of our revenues and are subject to fluctuations in foreign currency exchange rates relative to the U.S. dollar. While we have a foreign exchange risk management program designed to reduce our exposure to these fluctuations, this program does not fully offset their effect on our revenues and earnings.

- **The portion of revenues that we derive from non-advertising revenues is increasing and may adversely affect margins.**

Non-advertising revenues have grown over time. We expect this trend to continue as we focus on expanding our offerings through products and services like Google Cloud, Google Play, hardware products, and YouTube subscriptions. We currently derive non-advertising revenues primarily from sales of apps and in-app purchases, digital content products, and hardware; and licensing and service fees, including fees received for Google Cloud services and subscription and other services. A number of Other Bets initiatives are in their initial development stages, and as such, revenues from these businesses could be volatile. In addition, the margins on these revenues vary significantly and may be lower than the margins on our advertising revenues.

- **As we continue to serve our users and expand our businesses, we will invest heavily in operating and capital expenditures.**

We continue to make significant R&D investments in areas of strategic focus across Google Services, Google Cloud and Other Bets. We also expect to continue to invest in land and buildings for data centers and offices, and information technology assets, which includes servers and network equipment, to support the long-term growth of our business. In addition, acquisitions and strategic investments contribute to the breadth and depth of our offerings, expand our expertise in engineering and other functional areas, and build strong partnerships around strategic initiatives. For example, in January 2021 we closed the acquisition of Fitbit, Inc. for \$2.1 billion, which is expected to help spur innovation in wearable devices.

- **We face continuing changes in regulatory conditions, laws, and public policies, which could affect our business practices and financial results.**

Changes in social, political, economic, tax, and regulatory conditions or in laws and policies governing a wide range of topics and related legal matters have resulted in fines and caused us to change our business practices. As these global trends continue, our cost of doing business may increase, and our ability to pursue certain business models or offer certain products or services may be limited. Examples include the antitrust complaints filed by the U.S. Department of Justice and a number of state Attorneys General, the Digital Markets Act in Europe, and various legislative proposals in the U.S. focused on large technology platforms.

- **Our employees are critical to our success and we expect to continue investing in them.**

Our employees are among our best assets and are critical for our continued success. We expect to continue hiring talented employees around the globe and to provide competitive compensation programs. For additional information see Culture and Workforce in Part I, Item 1 "Business."

## Seasonality and other

Our advertising revenues are affected by seasonal fluctuations in internet usage, advertising expenditures, and underlying business trends, such as traditional retail seasonality. Additionally, our non-advertising revenues, including those generated from Google Cloud, Google Play, hardware, and YouTube, may be affected by fluctuations driven by changes in pricing, digital content releases, fee structures, new product and service launches, other market dynamics, as well as seasonality.

## Revenues and Monetization Metrics

### GOOGLE SERVICES

Google Services revenues consist of revenues generated from advertising ("Google advertising") as well as revenues from other sources ("Google other revenues").

#### Google Advertising

Google advertising revenues are comprised of the following:

- Google Search & other, which includes revenues generated on Google search properties (including revenues from traffic generated by search distribution partners who use [Google.com](https://www.google.com) as their default search in browsers, toolbars, etc.), and other Google owned and operated properties like Gmail, Google Maps, and Google Play;
- YouTube ads, which includes revenues generated on YouTube properties; and
- Google Network, which includes revenues generated on Google Network properties participating in AdMob, AdSense, and Google Ad Manager.

We use certain metrics to track how well traffic across various properties is monetized as it relates to our advertising revenues: paid clicks and cost-per-click pertain to traffic on Google Search & other properties, while impressions and cost-per-impressions pertain to traffic on our Network partners' properties.

Paid clicks represent engagement by users and include clicks on advertisements by end-users on Google search properties and other Google owned and operated properties including Gmail, Google Maps, and Google Play. Cost-per-click is defined as click-driven revenues divided by our total number of paid clicks and represents the average amount we charge advertisers for each engagement by users.

Impressions include impressions displayed to users on Google Network properties participating primarily in AdMob, AdSense, and Google Ad Manager. Cost-per-impression is defined as impression-based and click-based revenues divided by our total number of impressions, and represents the average amount we charge advertisers for each impression displayed to users.

As our business evolves, we periodically review, refine, and update our methodologies for monitoring, gathering, and counting the number of paid clicks and the number of impressions, and for identifying the revenues generated by the corresponding click and impression activity.

Our advertising revenue growth, as well as the change in paid clicks and cost-per-click on Google Search & other properties and the change in impressions and cost-per-impression on Google Network properties and the correlation between these items, have been affected and may continue to be affected by various factors, including:

- advertiser competition for keywords;
- changes in advertising quality, formats, delivery or policy;
- changes in device mix;
- changes in foreign currency exchange rates;
- fees advertisers are willing to pay based on how they manage their advertising costs;
- general economic conditions, including the effect of COVID-19;
- seasonality; and
- traffic growth in emerging markets compared to more mature markets and across various advertising verticals and channels.

## Google Other

Google other revenues are comprised of the following:

- Google Play, which includes sales of apps and in-app purchases and digital content sold in the Google Play store;
- Devices and Services, which includes sales of hardware, including Fitbit wearable devices, Google Nest home products, and Pixel phones;
- YouTube non-advertising, which includes YouTube Premium and YouTube TV subscriptions; and
- other products and services.

## GOOGLE CLOUD

Google Cloud revenues are comprised of the following:

- Google Cloud Platform, which includes fees for infrastructure, platform, and other services;
- Google Workspace, which includes fees for cloud-based collaboration tools for enterprises, such as Gmail, Docs, Drive, Calendar and Meet; and
- other enterprise services.

## OTHER BETS

Revenues from Other Bets are generated primarily from the sale of health technology and internet services.

For further details on how we recognize revenue, see Note 1 of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K.

## Costs and Expenses

Our cost structure has two components: cost of revenues and operating expenses. Our operating expenses include costs related to R&D, sales and marketing, and general and administrative functions. Certain of these expenses, including those associated with the operation of our technical infrastructure as well as components of our operating expenses, are generally less variable in nature and may not correlate to the changes in revenue.

## COST OF REVENUES

Cost of revenues is comprised of TAC and other costs of revenues.

- TAC includes:
  - Amounts paid to our distribution partners who make available our search access points and services. Our distribution partners include browser providers, mobile carriers, original equipment manufacturers, and software developers.
  - Amounts paid to Google Network partners primarily for ads displayed on their properties.
- Other cost of revenues includes:
  - Content acquisition costs, which are payments to content providers from whom we license video and other content for distribution on YouTube and Google Play (we pay fees to these content providers based on revenues generated or a flat fee).
  - Expenses associated with our data centers (including bandwidth, compensation expenses, depreciation, energy, and other equipment costs) as well as other operations costs (such as content review as well as customer and product support costs).
  - Inventory and other costs related to the hardware we sell.

The cost of revenues as a percentage of revenues generated from ads placed on Google Network properties are significantly higher than the cost of revenues as a percentage of revenues generated from ads placed on Google Search & other properties, because most of the advertiser revenues from ads served on Google Network properties are paid as TAC to our Google Network partners.

## OPERATING EXPENSES

Operating expenses are generally incurred during our normal course of business, which we categorize as either R&D, sales and marketing, or general and administrative.

The main components of our R&D expenses are:

- compensation expenses for engineering and technical employees responsible for R&D related to our existing and new products and services;
- depreciation; and
- professional services fees primarily related to consulting and outsourcing services.

The main components of our sales and marketing expenses are:

- compensation expenses for employees engaged in sales and marketing, sales support, and certain customer service functions; and
- spending relating to our advertising and promotional activities in support of our products and services.

The main components of our general and administrative expenses are:

- compensation expenses for employees in finance, human resources, information technology, legal, and other administrative support functions;
- expenses related to legal matters, including fines and settlements; and
- professional services fees, including audit, consulting, outside legal, and outsourcing services.

## Other Income (Expense), Net

Other income (expense), net primarily consists of interest income (expense), the effect of foreign currency exchange gains (losses), net gains (losses) and impairment on our marketable and non-marketable securities, performance fees, and income (loss) and impairment from our equity method investments.

For additional details, including how we account for our investments and factors that can drive fluctuations in the value of our investments, see Note 1 and Note 3 of the Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K as well as Item 7A, "Quantitative and Qualitative Disclosures About Market Risk".

## Provision for Income Taxes

Provision for income taxes represents the estimated amount of federal, state, and foreign income taxes incurred in the U.S. and the many jurisdictions in which we operate. The provision includes the effect of reserve provisions and changes to reserves that are considered appropriate as well as the related net interest and penalties.

For additional details, including a reconciliation of the U.S. federal statutory rate to our effective tax rate, see Note 14 of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K.



## Executive Overview

The following table summarizes consolidated financial results for the years ended December 31, 2020 and 2021 unless otherwise specified (in millions, except for per share information and percentages):

	Year Ended December 31,				
	2020	2021	\$ Change	% Change	
Consolidated revenues	\$ 182,527	\$ 257,637	\$ 75,110	41%	
Change in consolidated constant currency revenues				39%	
Cost of revenues	\$ 84,732	\$ 110,939	\$ 26,207	31%	
Operating expenses	\$ 56,571	\$ 67,984	\$ 11,413	20%	
Operating income	\$ 41,224	\$ 78,714	\$ 37,490	91%	
Operating margin	23%	31%		8%	
Other income (expense), net	\$ 6,858	\$ 12,020	\$ 5,162	75%	
Net Income	\$ 40,269	\$ 76,033	\$ 35,764	89%	
Diluted EPS	\$ 58.61	\$ 112.20	\$ 53.59	91%	
Number of Employees	135,301	156,500	21,199	16%	

- Revenues were \$257.6 billion, an increase of 41 %. The increase in revenues was primarily driven by Google Services and Google Cloud. The adverse effect of COVID-19 on 2020 advertising revenues also contributed to the year-over-year growth.
- Cost of revenues was \$110.9 billion, an increase of 31 %, primarily driven by increases in TAC and content acquisition costs. An overall increase in data centers and other operations costs was partially offset by a reduction in depreciation expense due to the change in the estimated useful life of our servers and certain network equipment.
- Operating expenses were \$68.0 billion, an increase of 20%, primarily driven by headcount growth, increases in advertising and promotional expenses and charges related to legal matters.

### Other information:

- Operating cash flow was \$91.7 billion, primarily driven by revenues generated from our advertising products.
- Share repurchases were \$50.3 billion, an increase of 62%. See Note 11 of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for further information.
- Capital expenditures, which primarily reflected investments in technical infrastructure, were \$24.6 billion.
- In January 2021, we updated the useful lives of certain of our servers and network equipment, resulting in a reduction in depreciation expense of \$2.6 billion recorded primarily in cost of revenues and R&D. See Note 1 of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for further information.
- Our acquisition of Fitbit closed in early January 2021, and the related revenues are included in Google other. See Note 8 of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for further information.
- On February 1, 2022, the Company announced that the Board of Directors had approved and declared a 20-for-one stock split in the form of a one-time special stock dividend on each share of the Company's Class A, Class B, and Class C stock. See Note 11 of the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K for additional information.

### The Effect of COVID-19 on our Financial Results

We began to observe the effect of COVID-19 on our financial results in March 2020 when, despite an increase in users' search activity, our advertising revenues declined compared to the prior year. This was due to a shift of user search activity to less commercial topics and reduced spending by our advertisers. For the quarter ended June 30, 2020 our advertising revenues declined due to the continued effects of COVID-19 and the related reductions in global economic activity, but we observed a gradual return in user search activity to more commercial topics. This was followed by increased spending by our advertisers, which continued throughout the



second half of 2020. Additionally, over the course of 2020, we experienced variability in our margins as many of our expenses are less variable in nature and/or may not correlate to changes in revenues. Market volatility contributed to fluctuations in the valuation of our equity investments. Further, our assessment of the credit deterioration of our customers due to changes in the macroeconomic environment during the period was reflected in our allowance for credit losses for accounts receivable.

Throughout 2021 we remained focused on innovating and investing in the services we offer to consumers and businesses to support our long-term growth. The impact of COVID-19 on 2020 financial results affected year-over-year growth trends. The COVID-19 pandemic continues to evolve, be unpredictable and affect our business and financial results. Our past results may not be indicative of our future performance, and historical trends in our financial results may differ materially.

## Financial Results

### Revenues

The following table presents revenues by type (in millions):

		Year Ended December 31,	
		2020	2021
Google Search & other	\$	104,062	\$ 148,951
YouTube ads		19,772	28,845
Google Network		23,090	31,701
Google advertising		146,924	209,497
Google other		21,711	28,032
Google Services total		168,635	237,529
Google Cloud		13,059	19,206
Other Bets		657	753
Hedging gains (losses)		176	149
Total revenues	\$	182,527	\$ 257,637

### Google Services

#### GOOGLE ADVERTISING REVENUES

#### Google Search & other

Google Search & other revenues increased \$44.9 billion from 2020 to 2021. The overall growth was driven by interrelated factors including increases in search queries resulting from growth in user adoption and usage, primarily on mobile devices, growth in advertiser spending, and improvements we have made in ad formats and delivery. The adverse effect of COVID-19 on 2020 revenues also contributed to the year-over-year increase.

#### YouTube ads

YouTube ads revenues increased \$9.1 billion from 2020 to 2021. Growth was driven by our direct response and brand advertising products. Growth for our direct response advertising products was primarily driven by increased advertiser spending as well as improvements to ad formats and delivery. Growth for our brand advertising products was primarily driven by increased spending by our advertisers and the adverse effect of COVID-19 on 2020 revenues.

#### Google Network

Google Network revenues increased \$8.6 billion from 2020 to 2021. The growth was primarily driven by strength in AdMob, Google Ad Manager, and AdSense. The adverse effect of COVID-19 on 2020 revenues also contributed to the year-over-year increase.

## MONETIZATION METRICS

### Paid clicks and cost-per-click

The following table presents changes in paid clicks and cost-per-click (expressed as a percentage) from 2020 to 2021:

	Year Ended December 31,
	2021
Paid clicks change	23%
Cost-per-click change	15%

Paid clicks increased from 2020 to 2021 driven by a number of interrelated factors, including an increase in search queries resulting from growth in user adoption and usage, primarily on mobile devices; an increase in clicks relating to ads on Google Play; growth in advertiser spending; and improvements we have made in ad formats and delivery. The adverse effect of COVID-19 on 2020 paid clicks also contributed to the increase.

The increase in cost-per-click from 2020 to 2021 was driven by a number of interrelated factors including changes in device mix, geographic mix, growth in advertiser spending, ongoing product changes, and property mix, as well as the adverse effect of COVID-19 in 2020.

### Impressions and cost-per-impression

The following table presents changes in impressions and cost-per-impression (expressed as a percentage) from 2020 to 2021:

	Year Ended December 31,
	2021
Impressions change	2%
Cost-per-impression change	35%

Impressions increased from 2020 to 2021 primarily driven by growth in AdMob, partially offset by a decline in impressions related to AdSense. The increase in cost-per-impression was primarily driven by the adverse effect of COVID-19 in 2020 as well as the effect of interrelated factors including ongoing product and policy changes and improvements we have made in ad formats and delivery, changes in device mix, geographic mix, product mix, and property mix.

## GOOGLE OTHER REVENUES

Google other revenues increased \$6.3 billion from 2020 to 2021. The growth was primarily driven by YouTube non-advertising and hardware, followed by Google Play. Growth for YouTube non-advertising was primarily due to an increase in paid subscribers. Growth in hardware reflects the inclusion of Fitbit revenues, as the acquisition closed in January 2021, and an increase in phone sales. Growth for Google Play was primarily driven by sales of apps and in-app purchases.

### Google Cloud

Google Cloud revenues increased \$6.1 billion from 2020 to 2021. The growth was primarily driven by GCP followed by Google Workspace offerings. Google Cloud's infrastructure and platform services were the largest drivers of growth in GCP.

### Revenues by Geography

The following table presents revenues by geography as a percentage of revenues, determined based on the addresses of our customers:

	Year Ended December 31,	
	2020	2021
United States	47%	46%
EMEA	30%	31%
APAC	18%	18%
Other Americas	5%	5%