Google Strategy Teardown

Strategic investments, acquisitions, and partnerships across Google's top priorities moving forward.

CBINSIGHTS

WITHIN 24 HOURS

Briefing recording will be distributed

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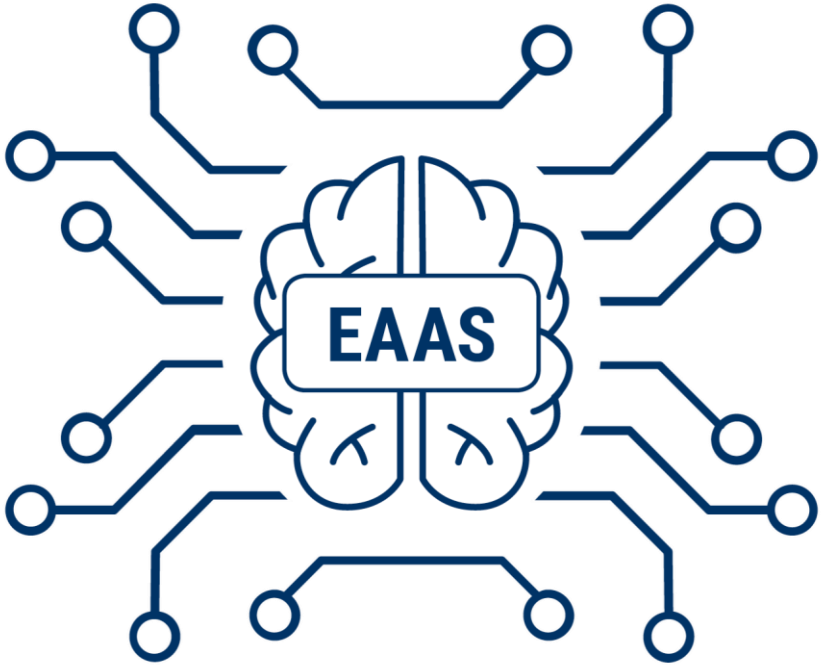
WHO WE ARE

The technology market intelligence platform.

CB Insights software lets you predict, discuss, and communicate emerging technology trends using data in ways that are beyond human cognition. We are a leader in the Expert Automation & Augmentation Software (EAAS) space.



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Beti Cung, Corporate Strategy, Microsoft

Microsoft

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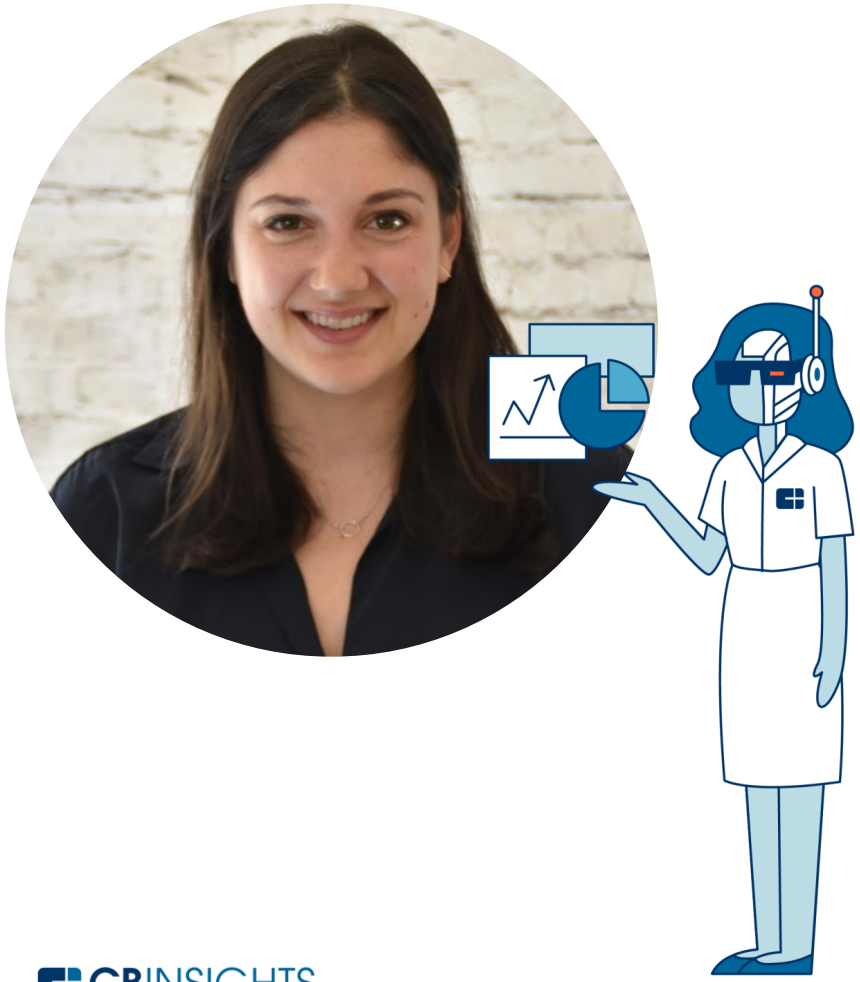
ABOUT THE ANALYST

Rachel Binder



Intelligence Associate

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Rachel Binder is an intelligence associate at CB Insights covering the auto and mobility space. Prior to joining the team at CB Insights, Rachel worked in equity research at Goldman Sachs covering retail companies. Rachel graduated from Brown University with a degree in Economics.

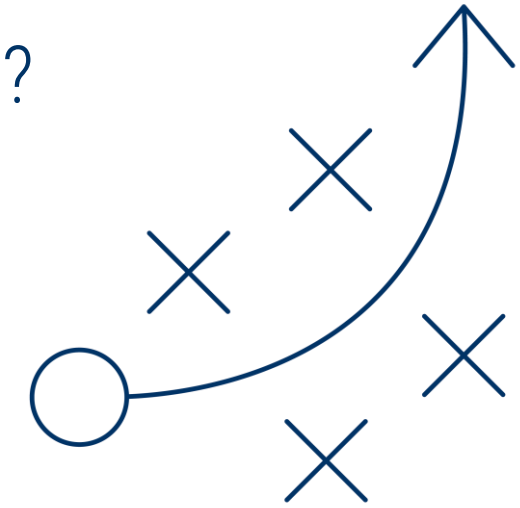
Contents

For each initiative, we'll be asking the following questions:

1. Why is this a priority for Google?

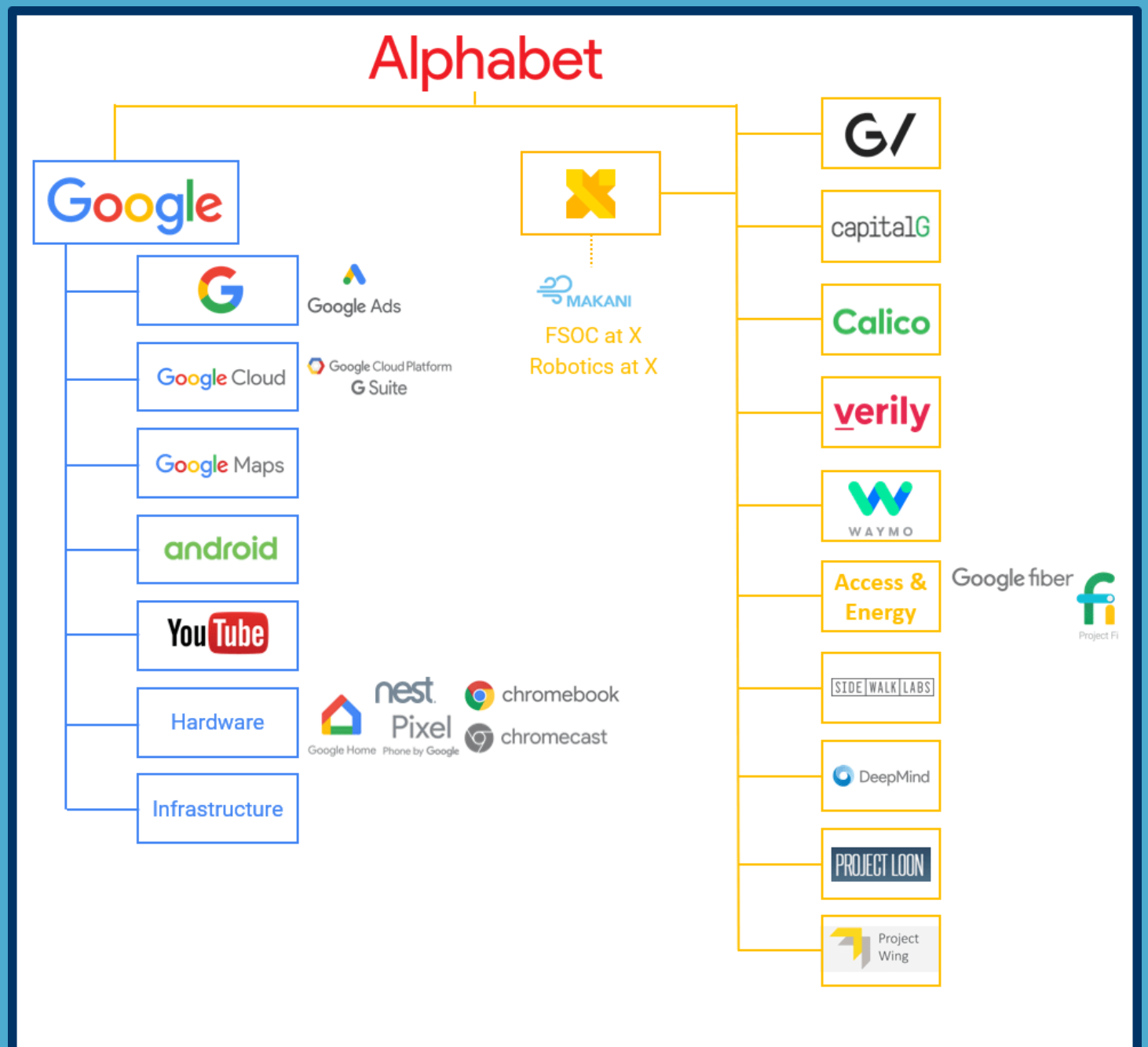
2. What is Google doing now in this space?

3. Where is Google going next?



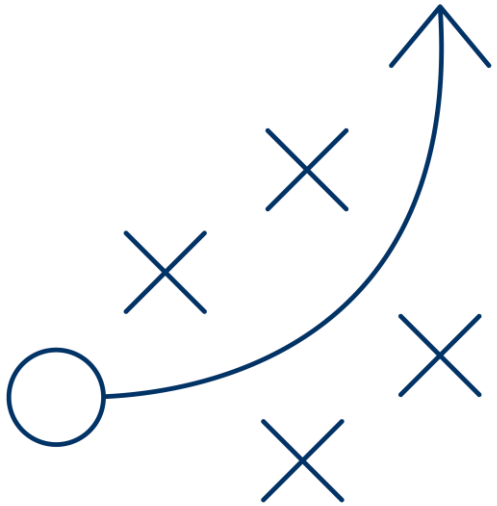
Alphabet's structure

Alphabet is broken out into its core Google business and a number of other subsidiaries, which it calls "Other Bets."

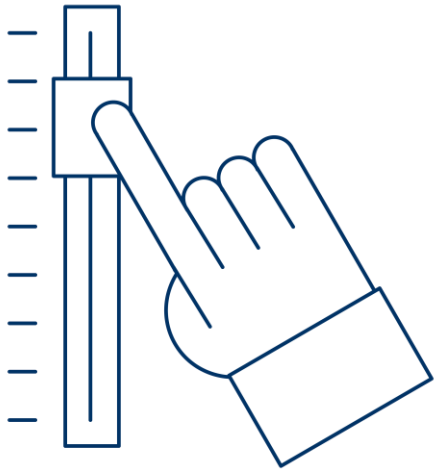


A MULTI-PRONGED APPROACH

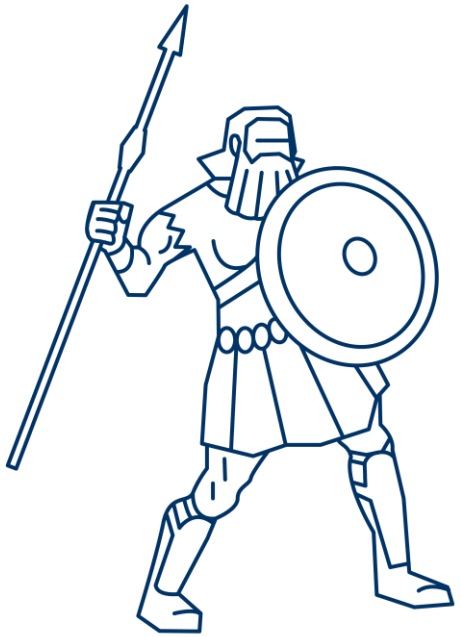
What's driving Google's strategy moving forward?



A number of factors are threatening Google's moat in search and advertising



Rising costs



Heightened competition

Shift to mobile and voice

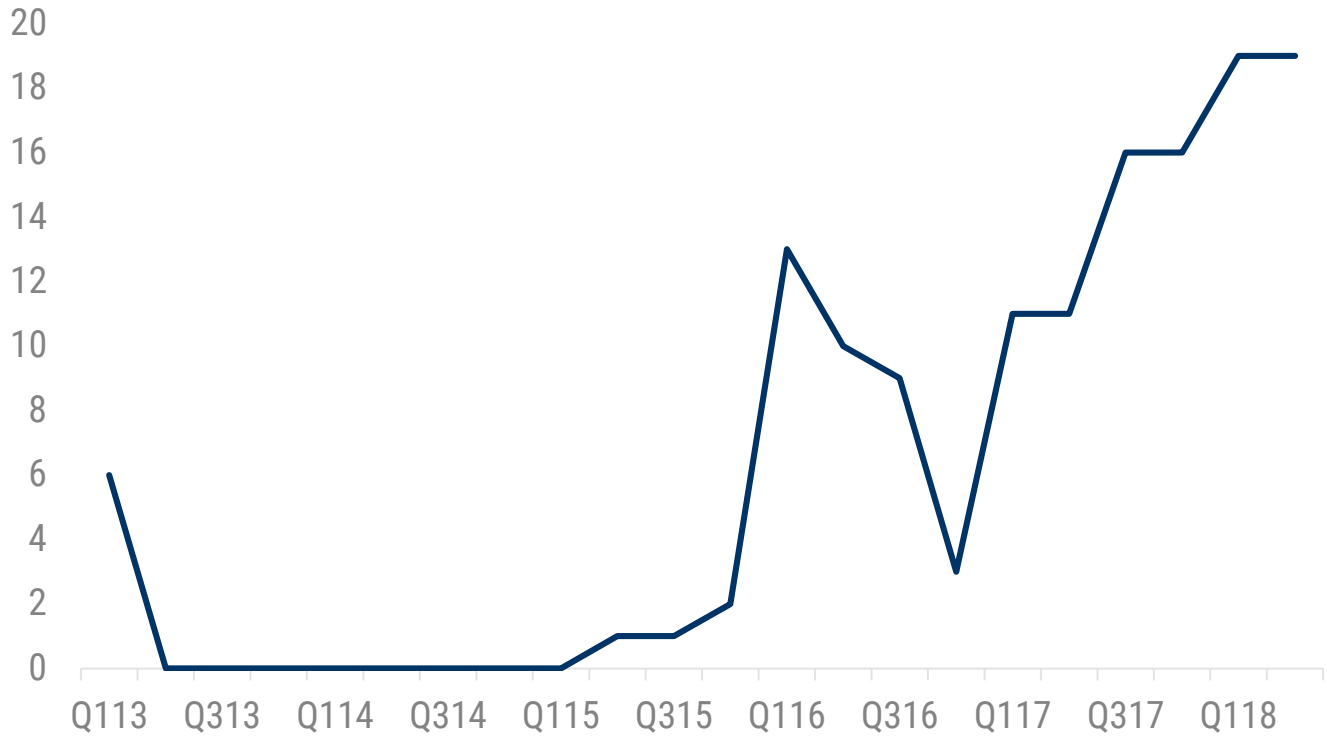
Google’s ad costs are rising, pressuring profits

Google’s traffic acquisition costs (TAC) are the largest costs associated with ad and search revenues.

TAC has been increasing in recent quarters as the company faces intensifying regulation and an ongoing shift to mobile from desktop.

Investor concerns mounting over rising TAC

Mentions of “total acquisition costs” or “TAC” on Google earnings calls



Peers investing billions to make media/app platforms stickier

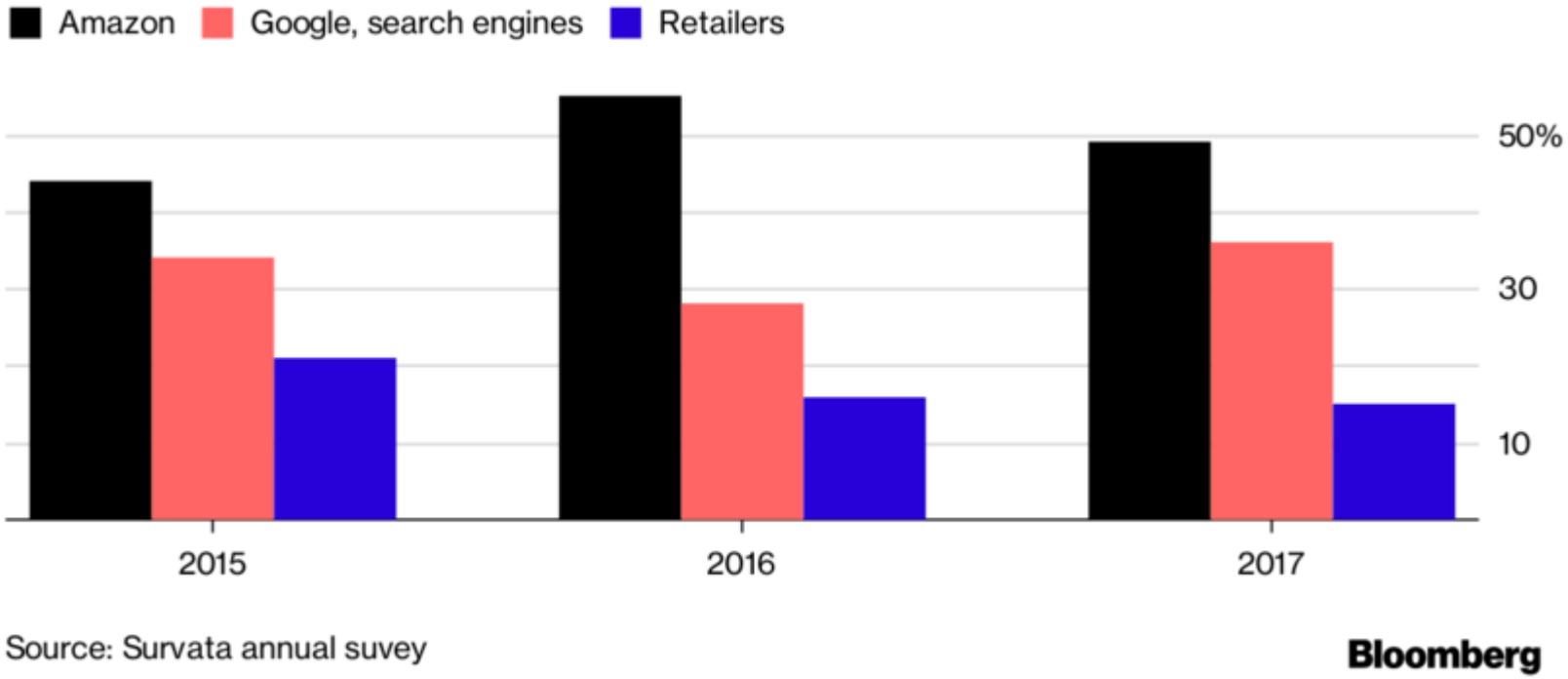
 Sources: Axios, Barrons, The Guardian, The New York Times

Amazon has largest share of product search…

Amazon dominates product search, outpacing Google and search engines as well as retail at large.

In 2017, Google re-captured some of that share loss, but still trails Amazon.

Product search remains an area of focus for Google, as it makes up roughly 60% of its total ad clicks.

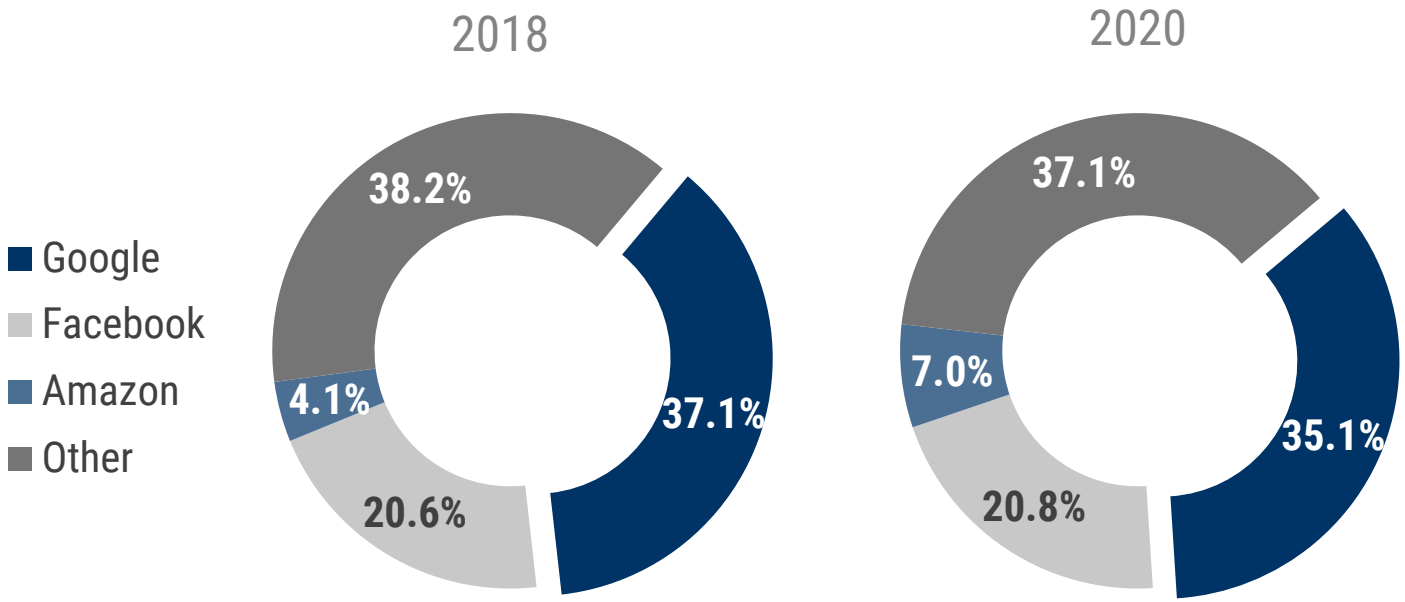


… and is gaining traction in advertising

Though Google and Facebook still reign supreme in the online ad market, **Amazon has displayed notable growth,** surpassing Oath and Microsoft in 2018 with the **third largest share of digital advertising revenue.**

Google losing share of ad market to Amazon

Percent of total digital ad spending in the US

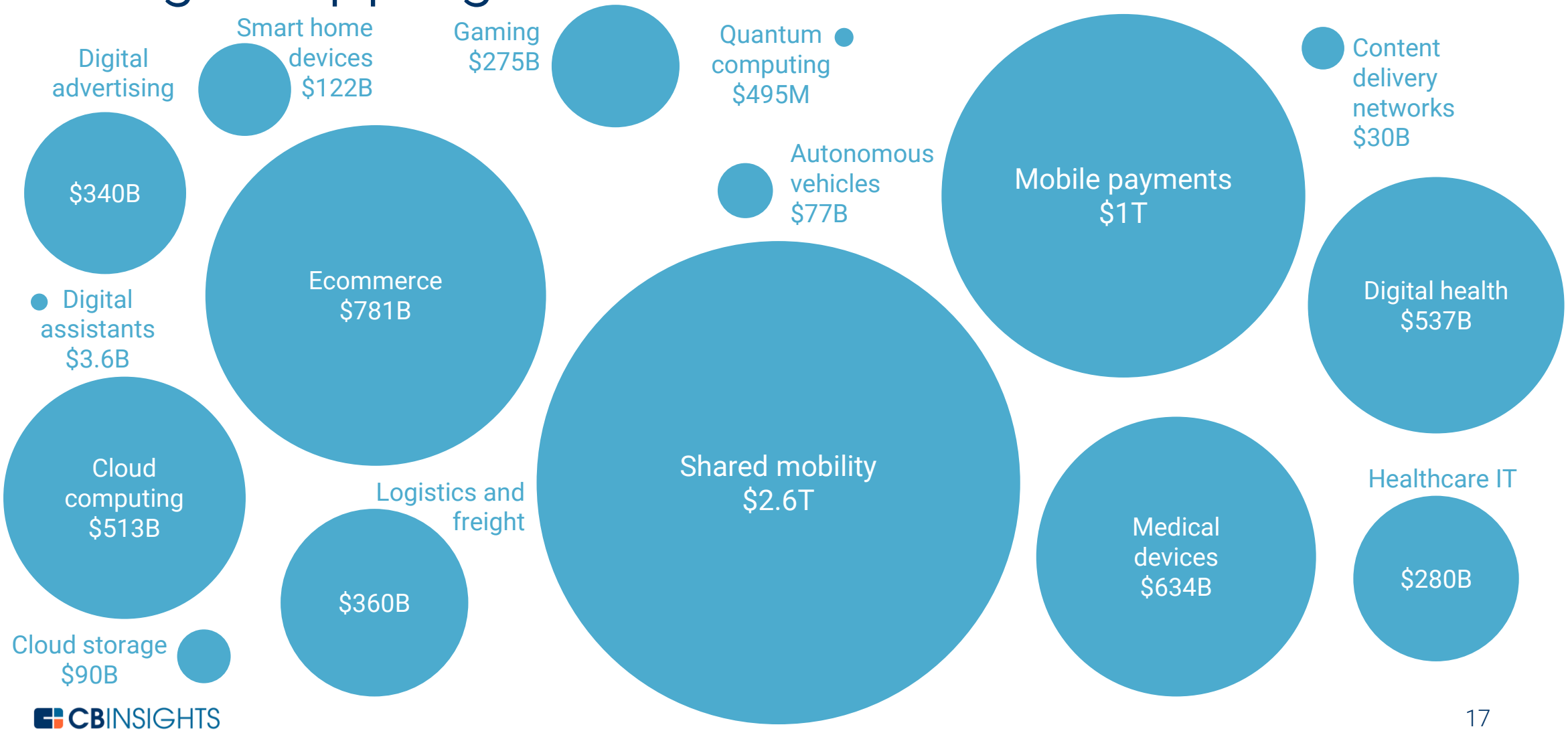


Note: includes advertising that appears on desktop and laptop computers as well as mobile phones, tablets, and other internet-connected devices, and includes all the various formats of advertising on those platforms; net ad revenues after paying traffic acquisition costs (TAC) to partner sites; Other includes US digital ad spending outside Amazon, Facebook, and Google

CBINSIGHTS Sources: eMarketer

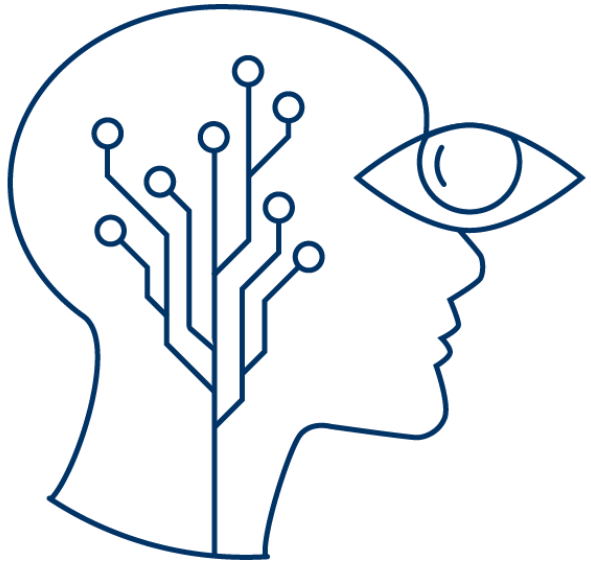
WHY ARE THESE PRIORITIES?

Google tapping into multi-billion dollar markets



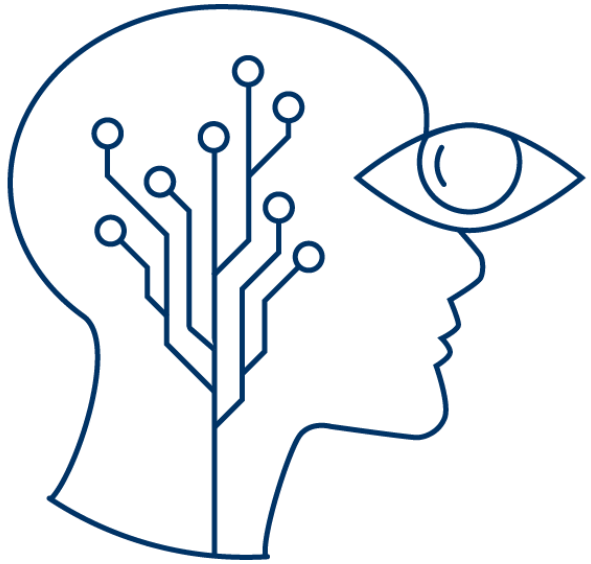
AI CENTRICITY

Embrace an AI-centric approach and solidify lead in machine learning



AI CENTRICITY

Why it’s a priority

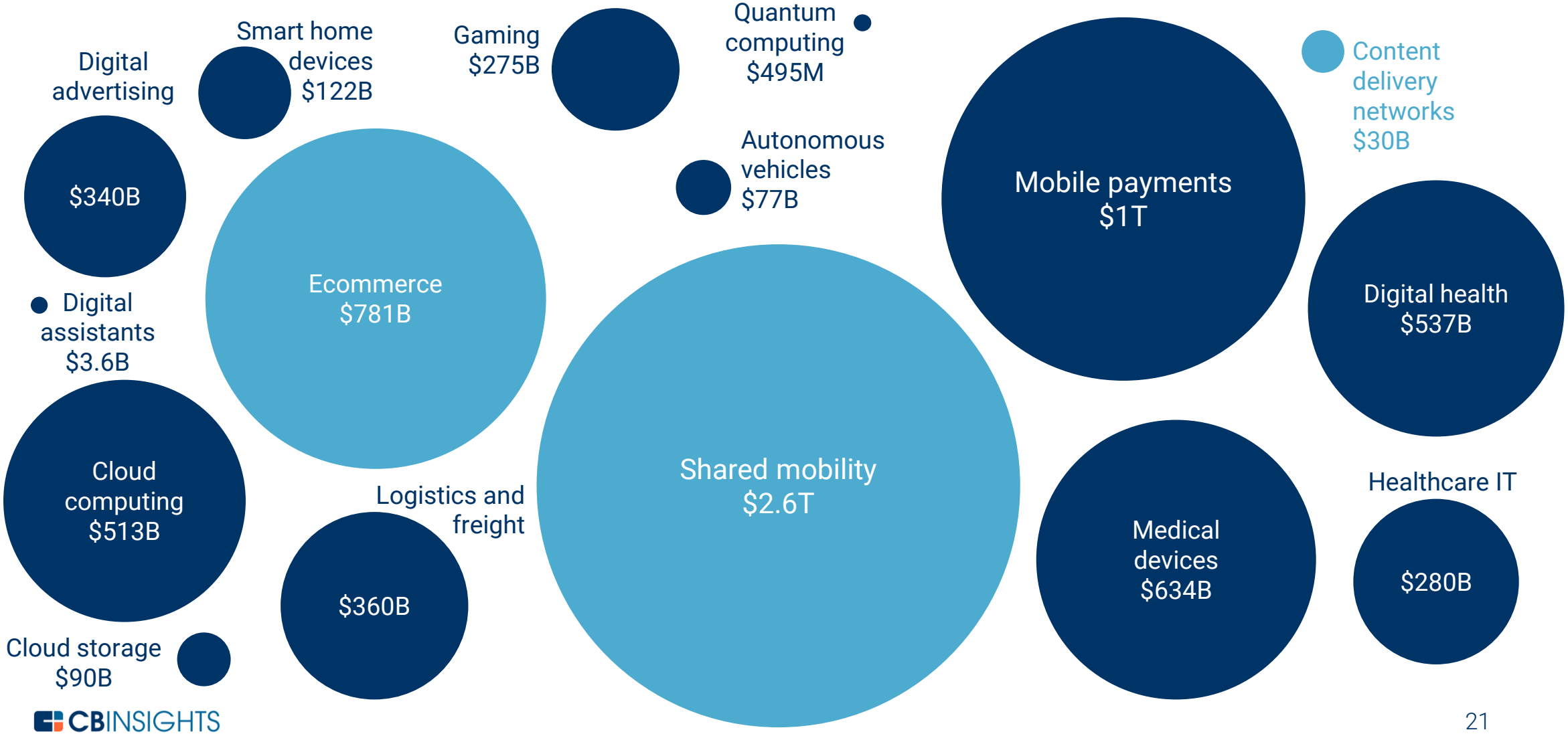


THE WORLD IS CHANGING

"We are evolving from a mobile-first to an **AI-first** world."

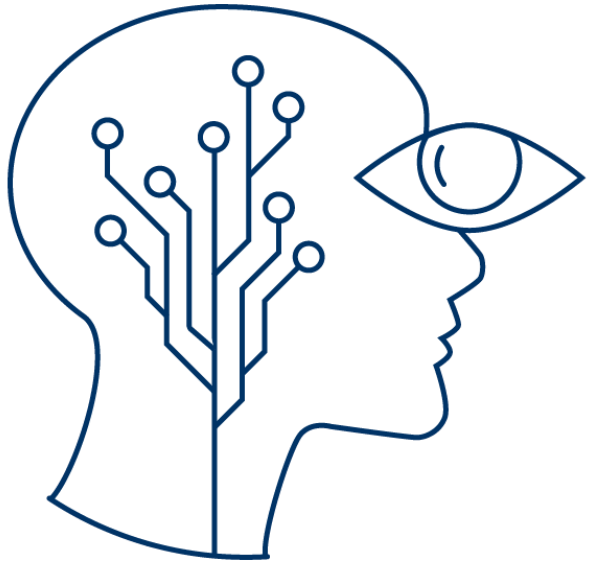
- GOOGLE CEO, SUNDAR PICHAI

AI stands to disrupt several of these markets



AI CENTRICITY

What Google is doing now



New investment vehicles focused on AI

Gradient Ventures

Launched July 2017

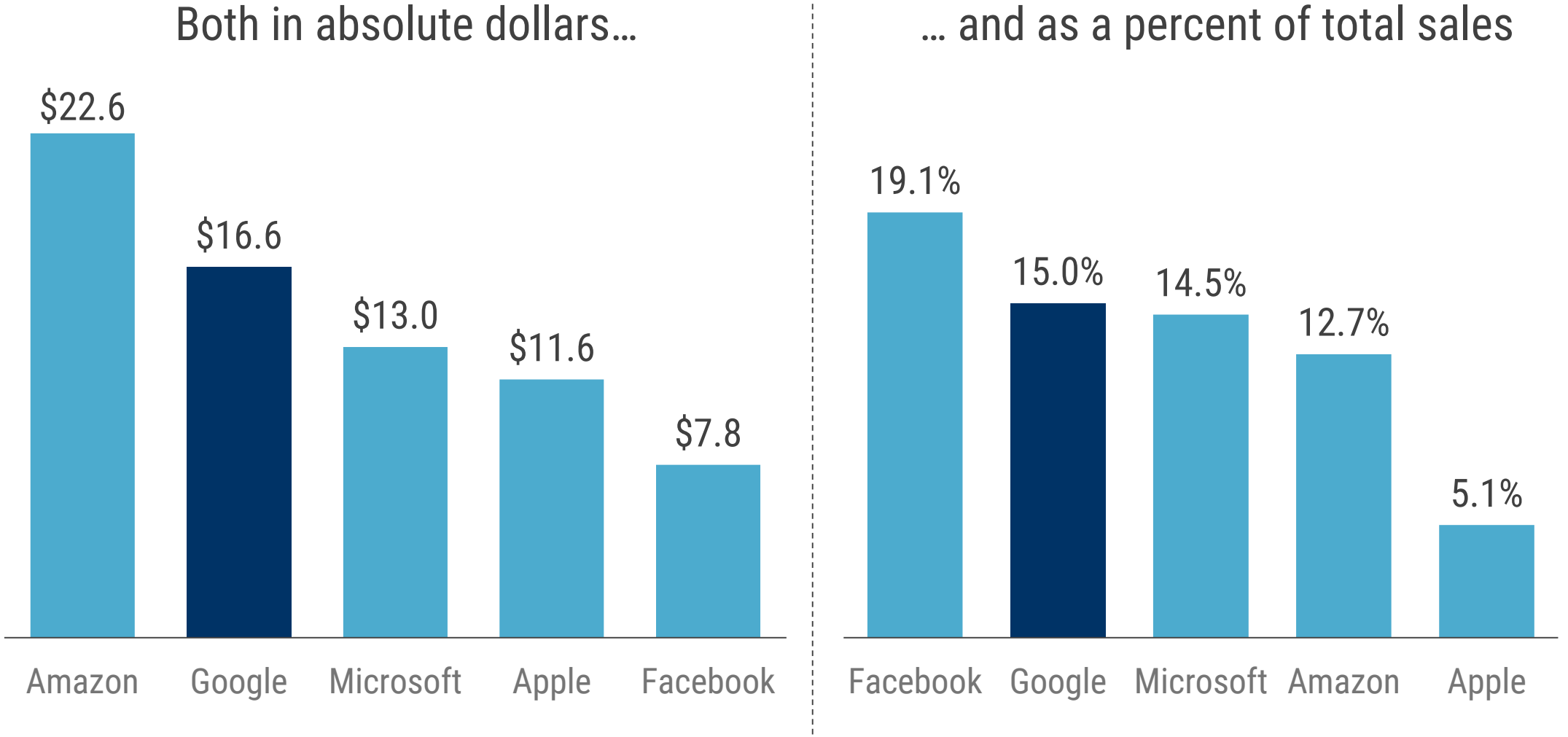
Gradient Ventures invests in early-stage AI startups.

Google Assistant Investment Program

Launched May 2018

The Google Assistant Investment Program is focused on early-stage startups working with Google's virtual assistant, the Google Assistant.

Google's R&D spend tracks at high end of peers

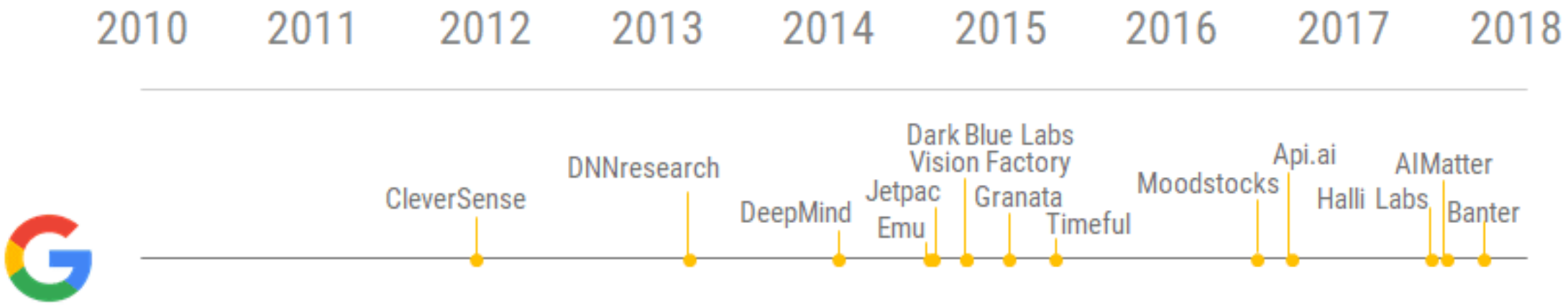


CBINSIGHTS Source: Company data, $s in billions

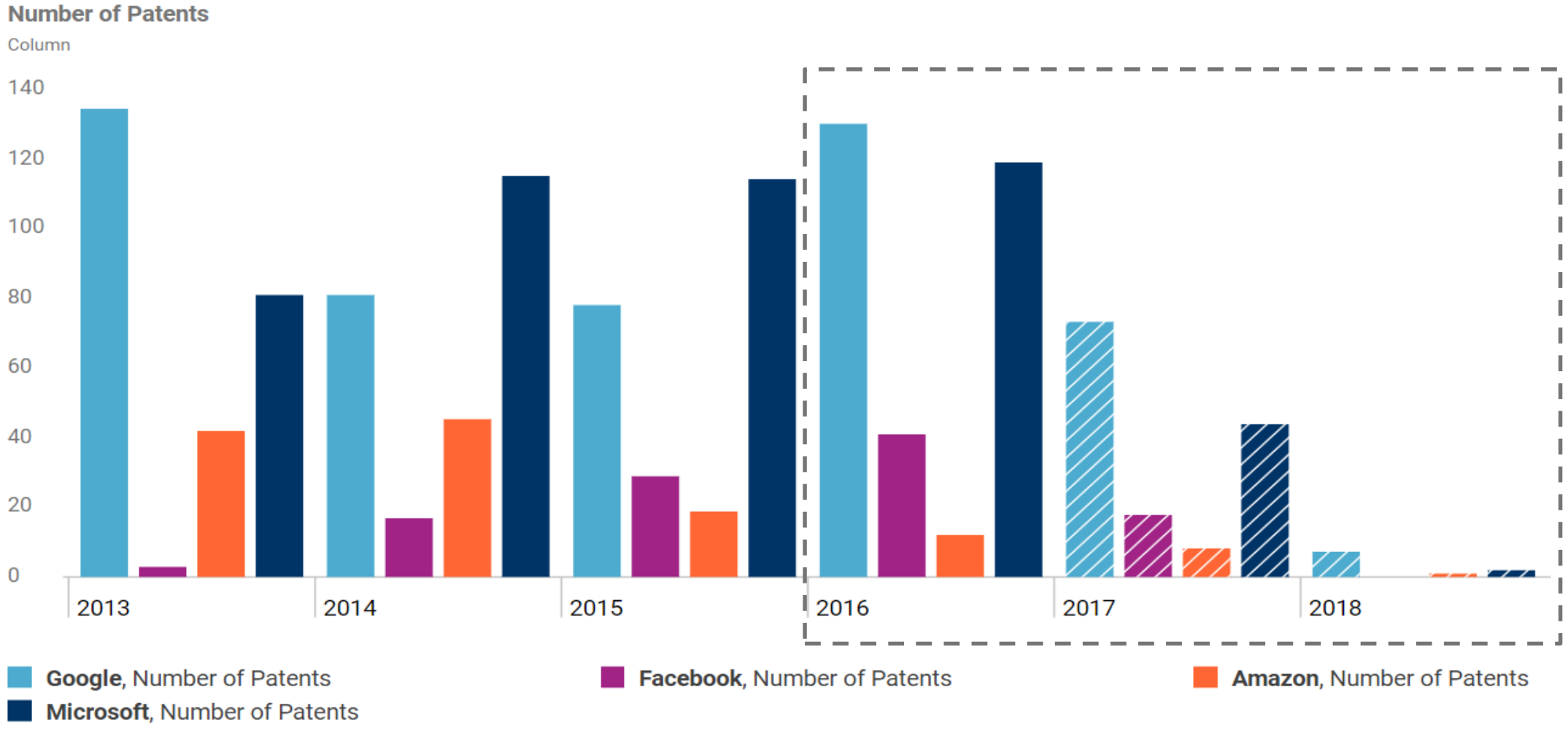
Google has been active in AI-related M&A

Google's $600M acquisition of DeepMind in 2014 spurred some of its most groundbreaking research in AI, including the machine learning software that beat a human champion in the board game "Go."

Recent acquisitions such as Halli Labs, AIMatter, and Banter have helped Google build out AI capabilities in deep learning, computer vision, and natural language processing for cloud, respectively.



Google outpacing FAMGA in AI-related patents



Deep learning is growing in importance

"Neural network" was first mentioned in 2015 and has since climbed to become **one of the top 3 most frequently mentioned terms**.

Google doubles down on deep learning

Most common keywords in Google patents by year

2013	2014	2015	2016	2017
content item	content item	graphical user	display screen	electronic device
electronic device	display device	display screen	graphical user	content item
search result	computer icon	user interface	user interface	**neural network**
mobile device	wearable display	content item	**neural network**	display screen
display screen	handheld device	display device	screen or portion	graphical user
user interface	autonomous vehicle	notebook computer housing	content item	user interface
graphical user	display panel	notebook computer	electronic device	first user
display panel	electronic device	user device	display panel	computing device
search query	mobile device	display panel	user device	user device
notebook computer housing	animated computer	computing device	mobile device	medium item
notebook computer	display screen	**neural network**	user interface component	mobile device
medium item	graphical user	electronic device	display screen portion	trigger phrase
computing device	headphone assembly	retail display	screen portion	search result
packaging assembly	user interface	screen or portion	computing device	medium content
first user	notebook computer	mesh network	search result	time of flight
geographic location	notebook computer housing	autonomous vehicle	power adapter	virtual environment
social network	medium item	native application	audio data	virtual reality
web page	computing device	mobile device	virtual reality	client device
user device	user device	search query	interface or portion	wearable computing
power adapter	client device	medium content	medium item	web page

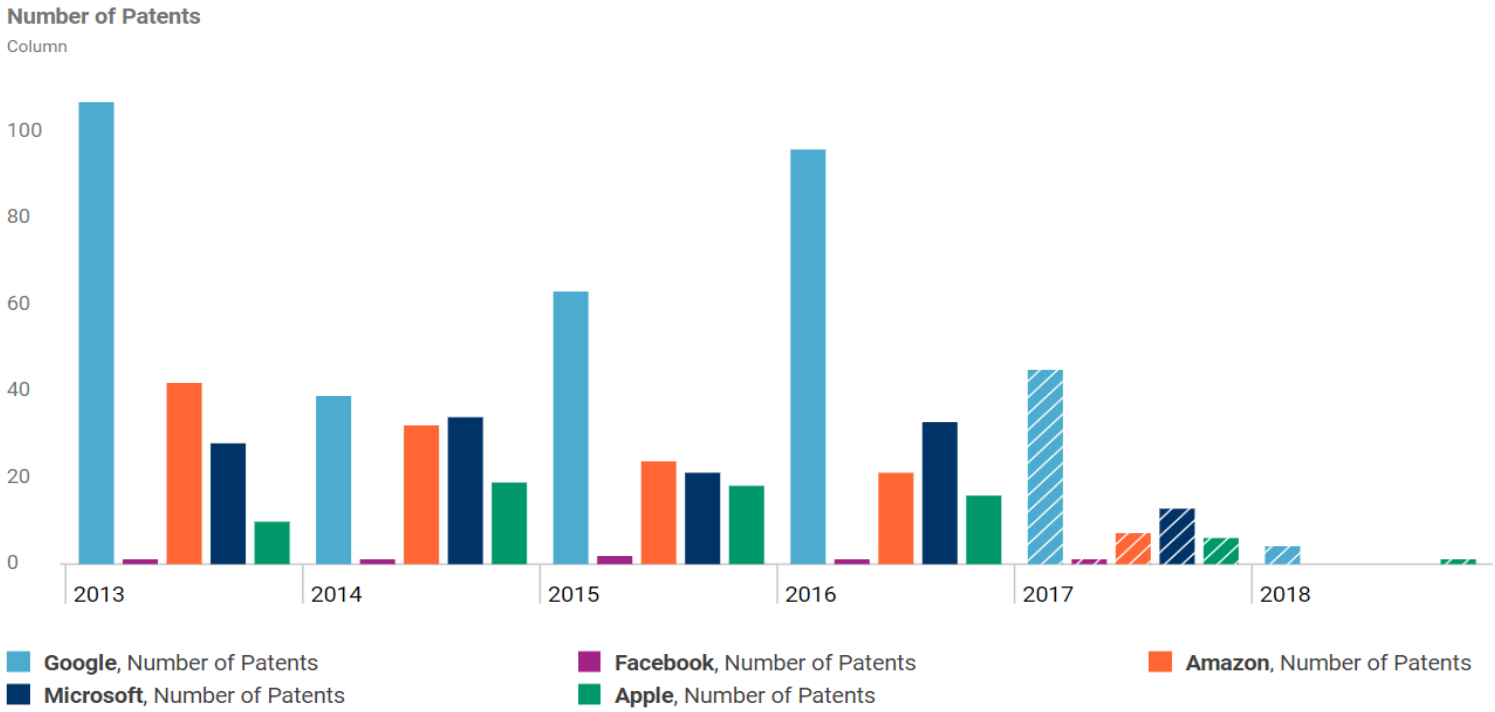
Speech recognition is a priority at Google

Google is focused heavily on speech recognition and natural language processing for its digital assistant, Google Translate, and a host of other products and services.

The company's IP activity around voice has tracked above FAMGA peers historically.

Google leads FAMGA in patent activity on speech recognition

Patent applications and grants for "speech recognition" at Google, Facebook, Amazon, Microsoft, and Apple; 2013-2018TD (7/24/2018)

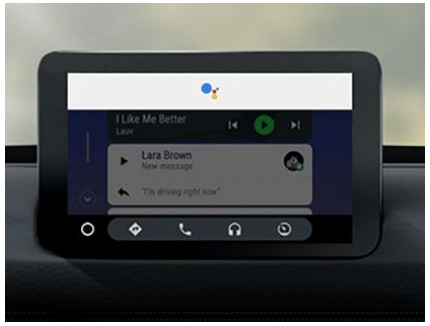


Assistant compatible with array of devices

Smart Speakers

The Google Assistant is offered across a number of speaker systems, from Google's own Google Home to Lenovo's Smart Display 10, the first smart speaker with a screen.

Auto



Google has integrated Google Assistant in its Android Auto app, enabling its digital assistant in the dashboard of select cars.

Smart Home

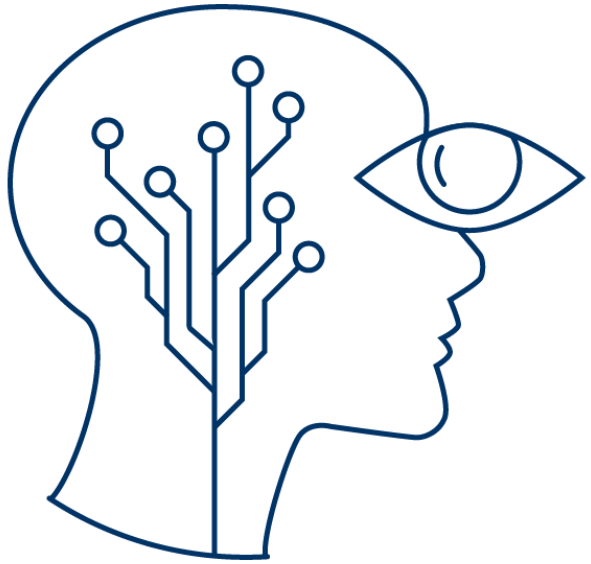
Google Assistant is also available in Nest's smart home products, such as the Nest Thermostat, the Nest Cam, among others.

Wearables

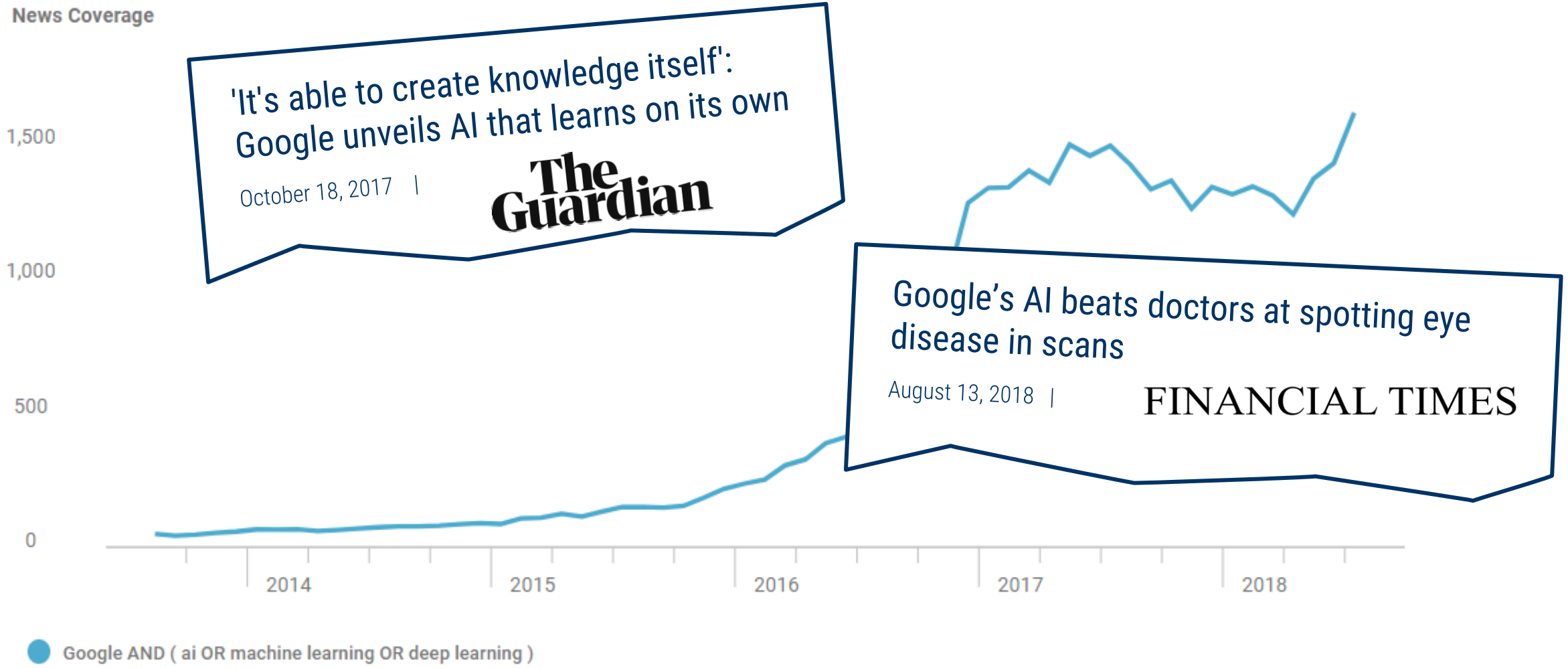
Google introduced a systemwide application in its Wear OS smartwatches that includes Google Assistant, allowing for recommendations or smart suggestions.

AI CENTRICITY

Where Google is going next



Chatter about Google's work in AI is soaring



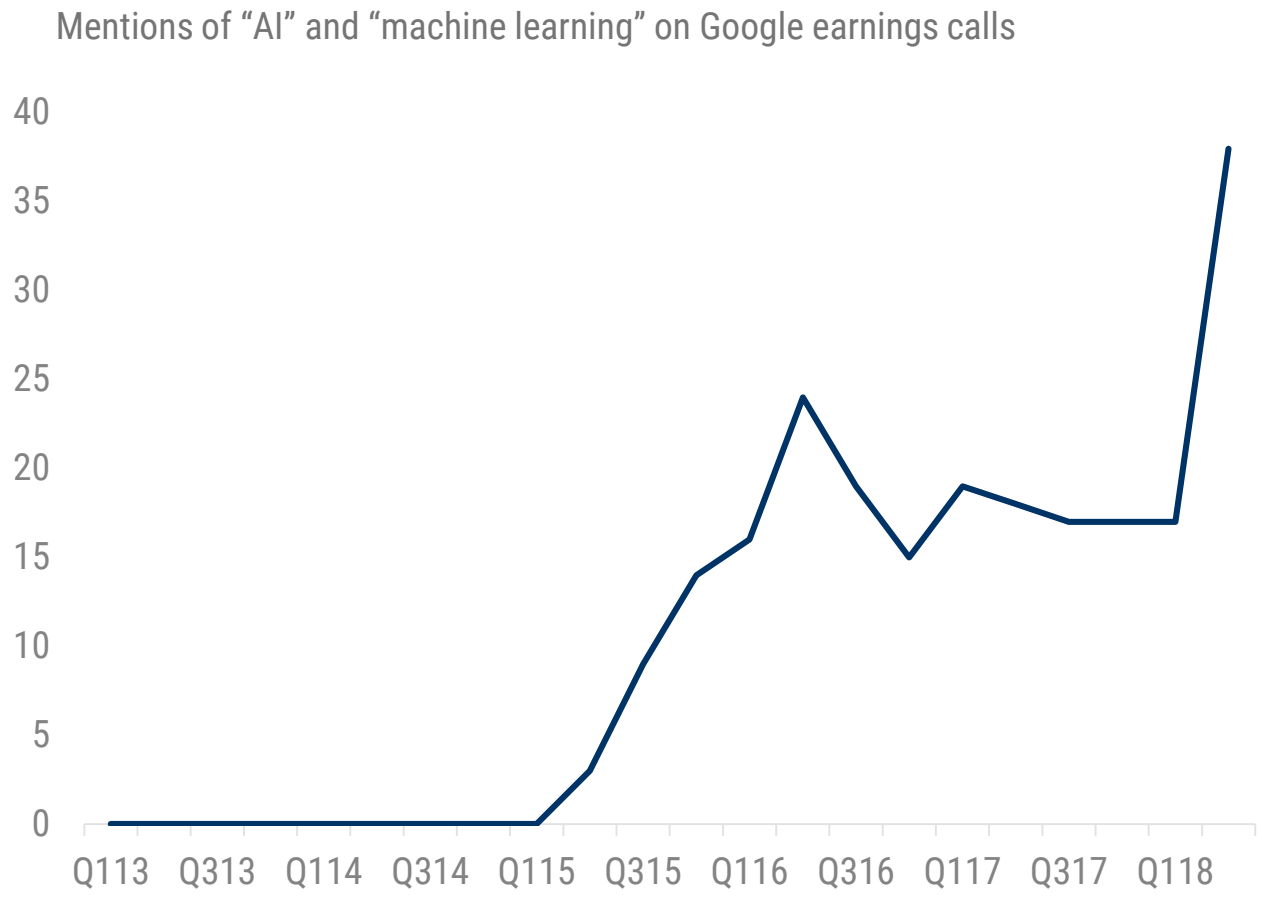
CBINSIGHTS Sources: The Guardian, Financial Times

AI and machine learning central at Google

Though artificial intelligence has been a key focus for over a year, Google's mentions of "AI" and "machine learning" on earnings calls **reached a new peak in Q2'18**.

The company is looking to leverage its expertise in machine learning across its multitude of other projects.

AI and machine learning topical on Google earnings calls



HELPING PEOPLE COMPLETE ACTIONS

"The next big evolution as part of mobile search and Assistant is to **help users get things done**."

- GOOGLE CEO, SUNDAR PICHAI

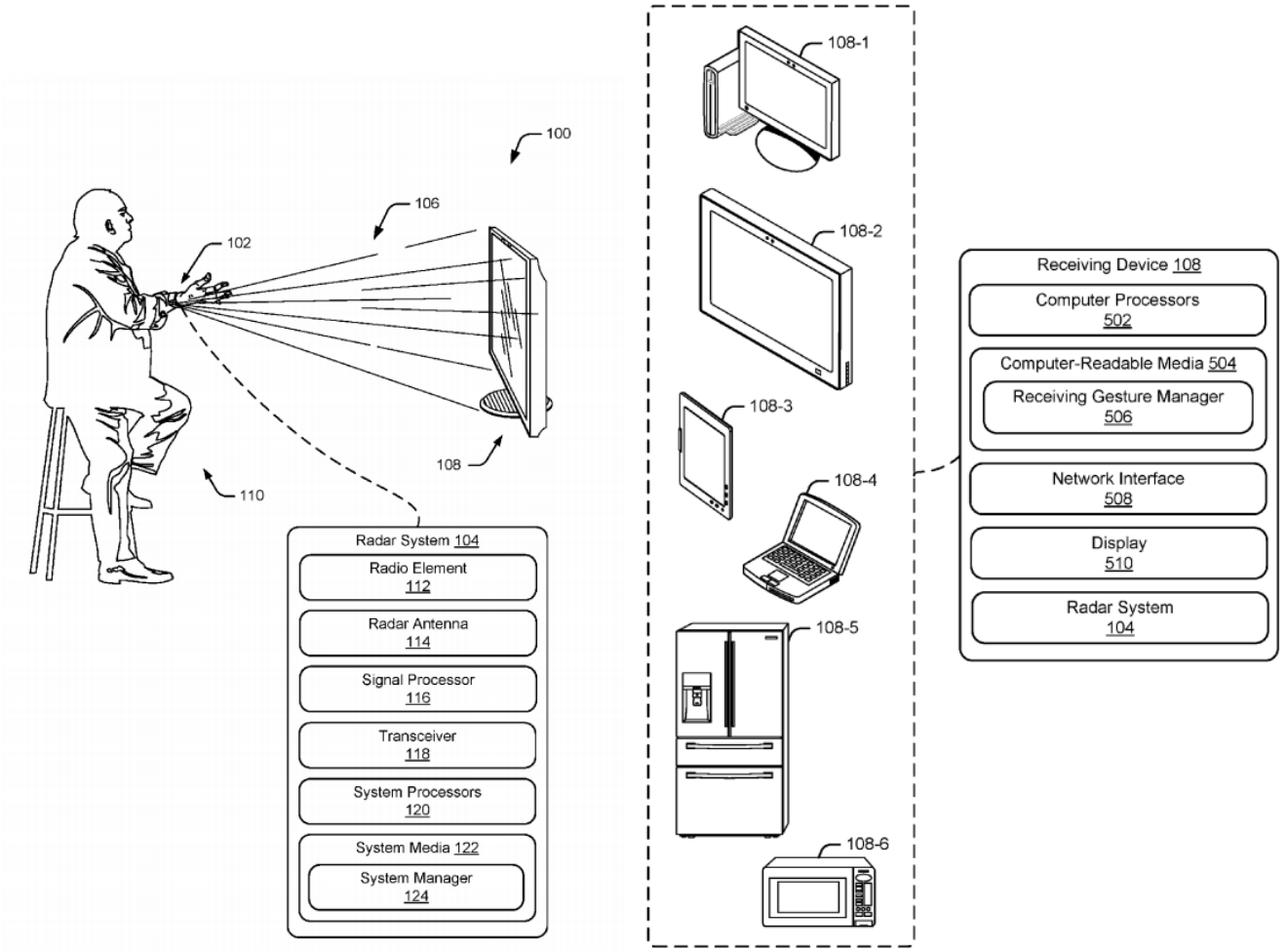
New products will be aimed at task assistance

At its i/O conference in May, the company announced **Duplex**, a future capability for the Assistant that can **carry out phone calls on a user's behalf**.

Voice and gesture key to future product suite

In October 2017, Google filed a patent for “radar-based gesture sensing and data transmission.” The technology would allow users to control a suite of devices using gestures, rather than just voice or other control devices (like a TV remote or buttons on a microwave).

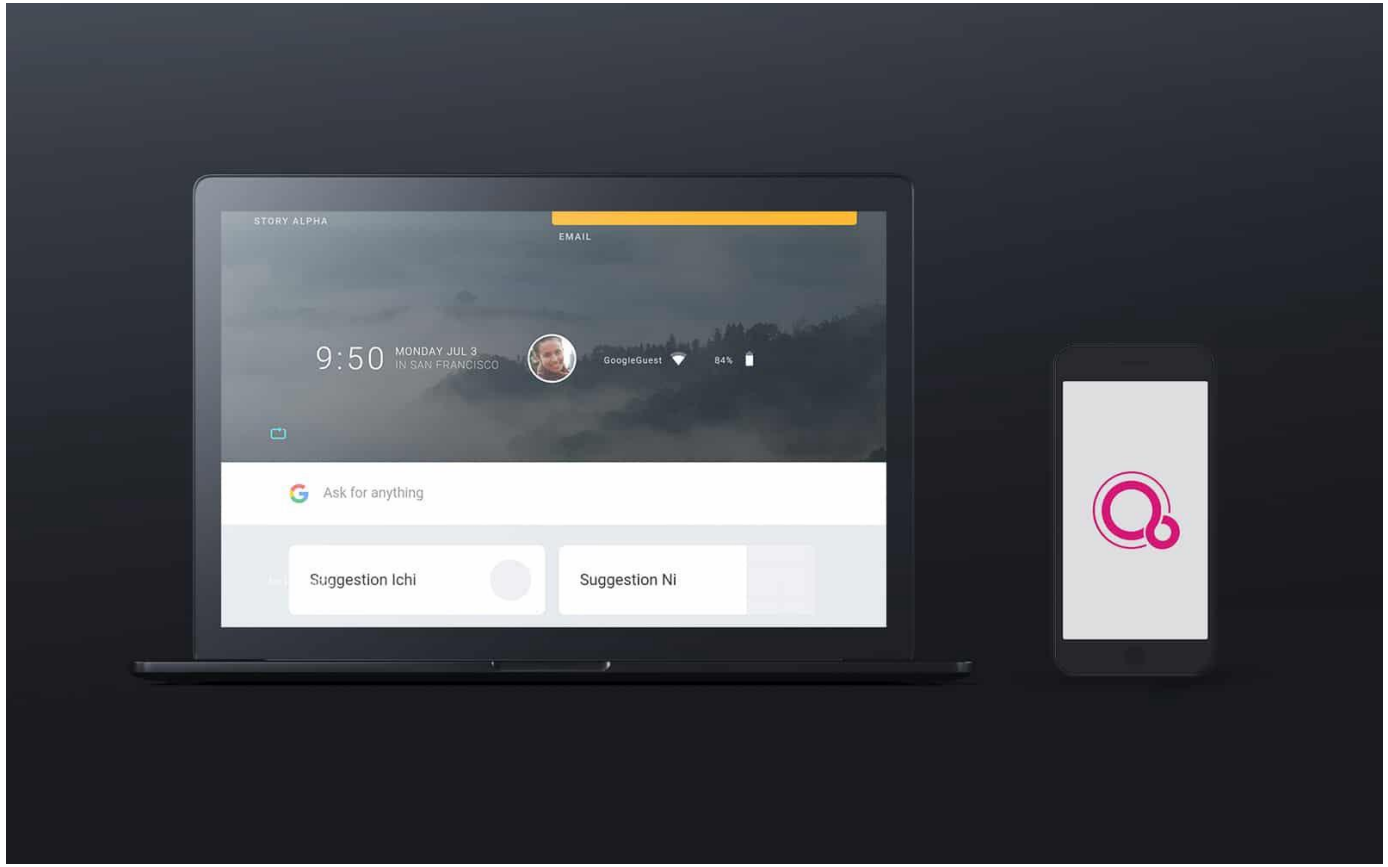
Google patent integrates voice and gesture recognition into smart home ecosystem



A uniform operating system is in the works

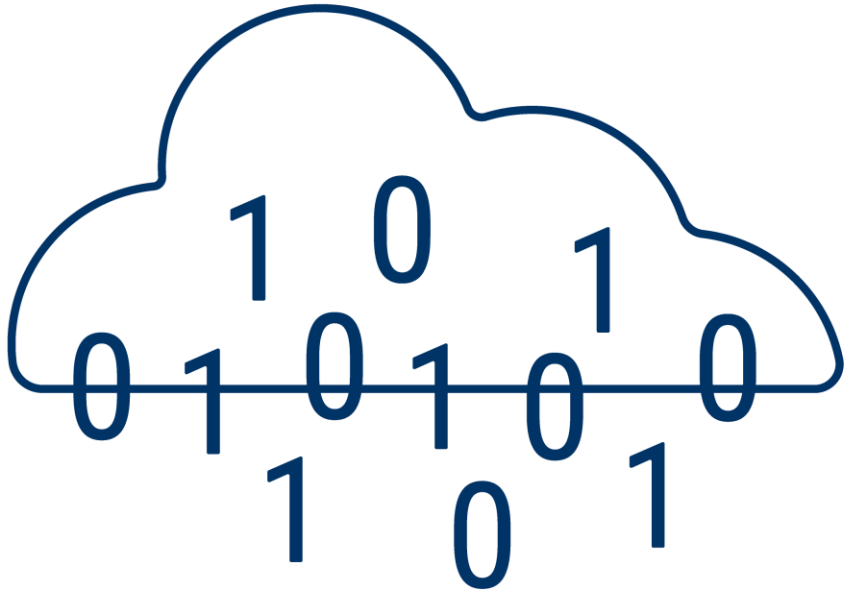
Google is reportedly working on an operating system with natural language processing at its core.

Called **Fuscia**, the system would replace Android and Chrome OS, offering a **universal platform** that would be better suited for Google's AI-based service offering designed to span all of a user's connected devices.



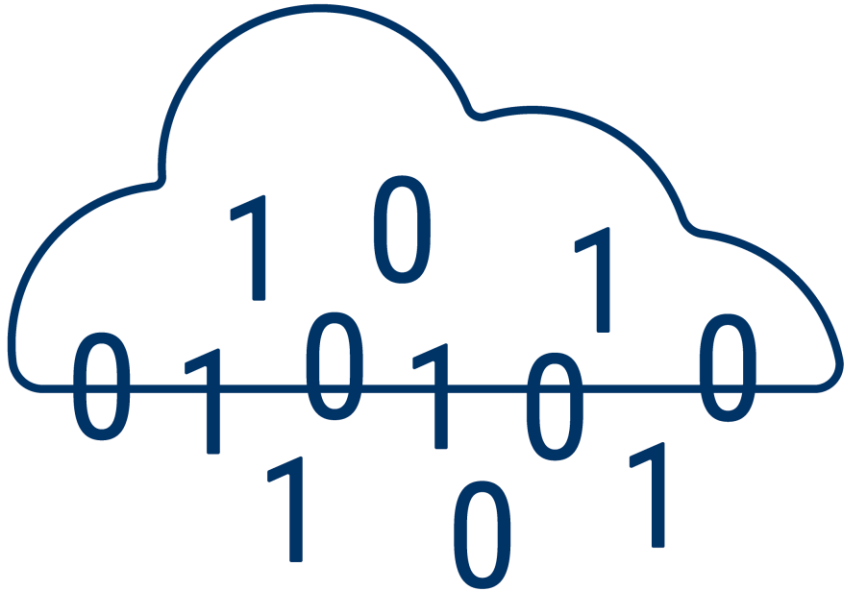
CLOUD & COMPUTING

Grow share in the cloud market



CLOUD & COMPUTING

Why they're a priority



"The **power and potential of computation** to tackle important problems has **never been greater**."

- GOOGLE CO-FOUNDER, SERGEY BRIN

The future of computing is in the cloud

1

LARGE ADDRESSABLE MARKET

Analysts expect the cloud computing market to reach $513B by 2022. Despite trailing Amazon and Microsoft in share of the market, Google will benefit from the growing adoption of a multi-cloud approach, which involves now utilizing multiple cloud providers to take advantage of strengths across public cloud services.

2

DEMAND IS SET TO INCREASE

Advancements in computing capabilities and a growing number of connected devices will require more processing power to make sense of it. Google stands to benefit from these drivers given its well-developed high-speed delivery network that it continues to build out and improve.

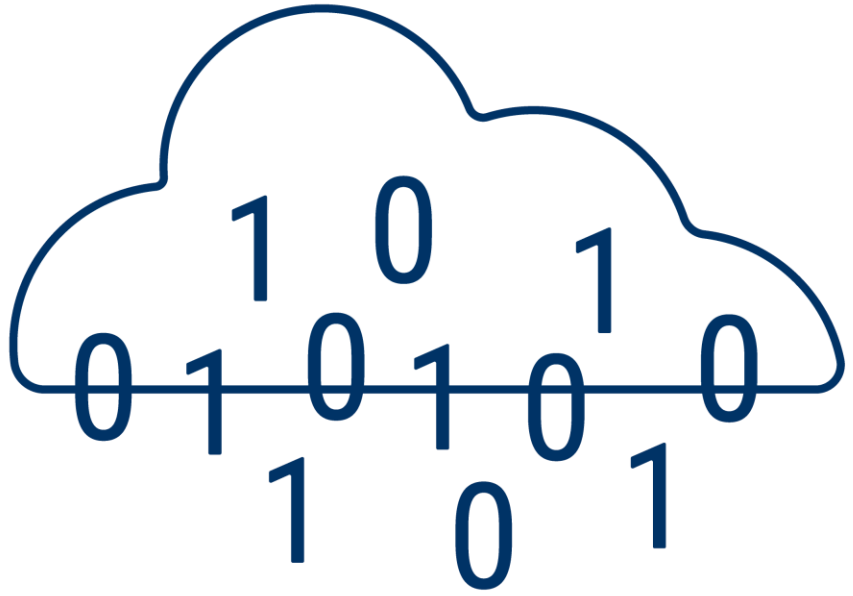
3

OPPORTUNITIES REMAIN IN ENTERPRISE

A number of large data-centric companies have yet to migrate to the cloud, and many could benefit from a hybrid cloud approach, which Google now offers, that allows them to utilize both the public and private cloud.

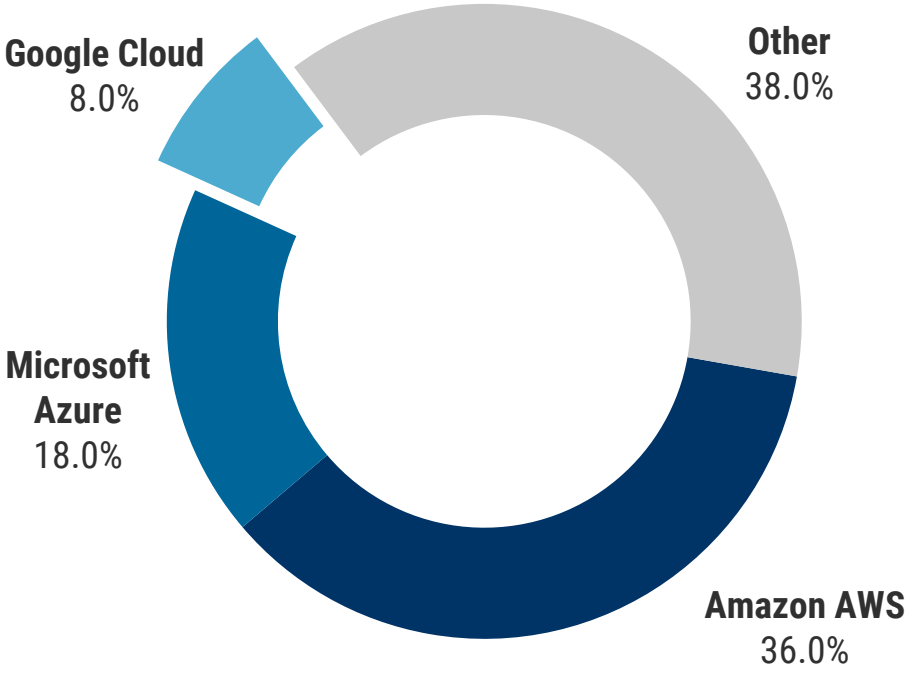
CLOUD & COMPUTING

What Google is doing now

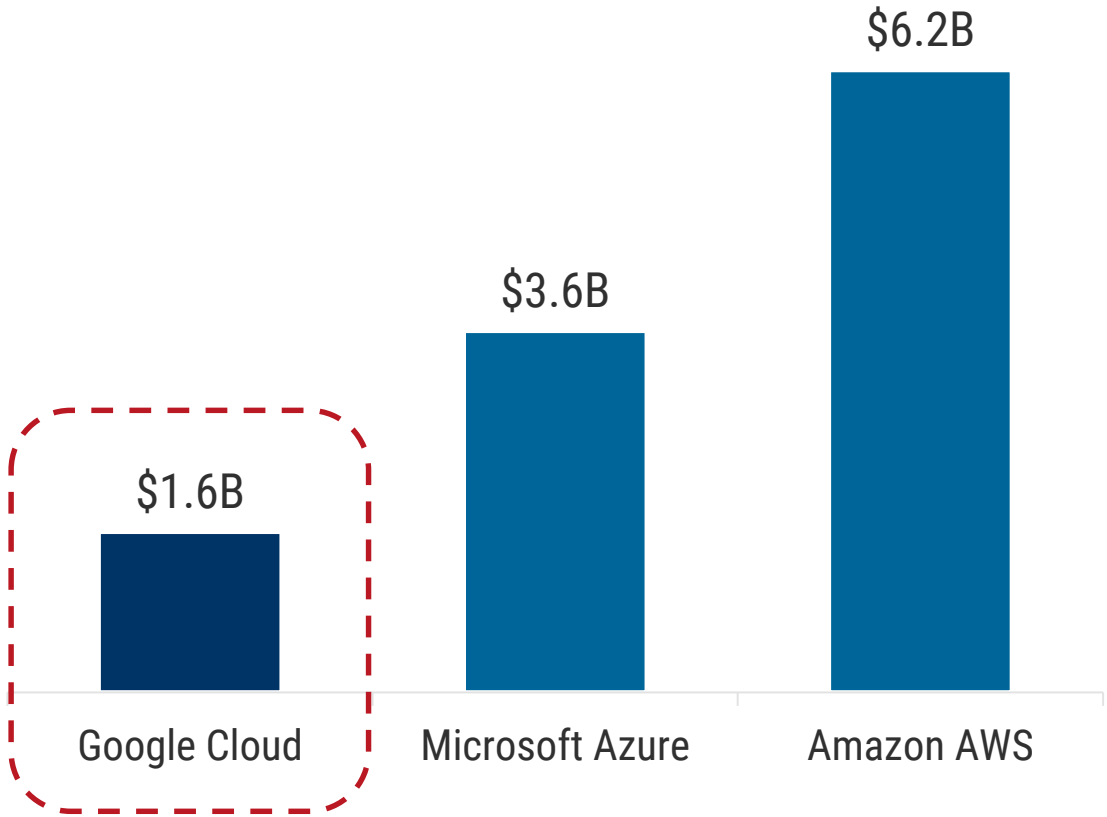


Google trails peers but now raking in >$1B

Share of cloud market by provider in Q2'18



Estimated cloud revenues in Q2'18



CBINSIGHTS Sources: Canalys

"**We're playing the long game**. This thing is early. Some people estimate that only 10 percent of workloads are in the big public clouds. And if it's not in a public cloud, it is going to be in a public cloud."

- GOOGLE CLOUD CEO, DIANE GREENE

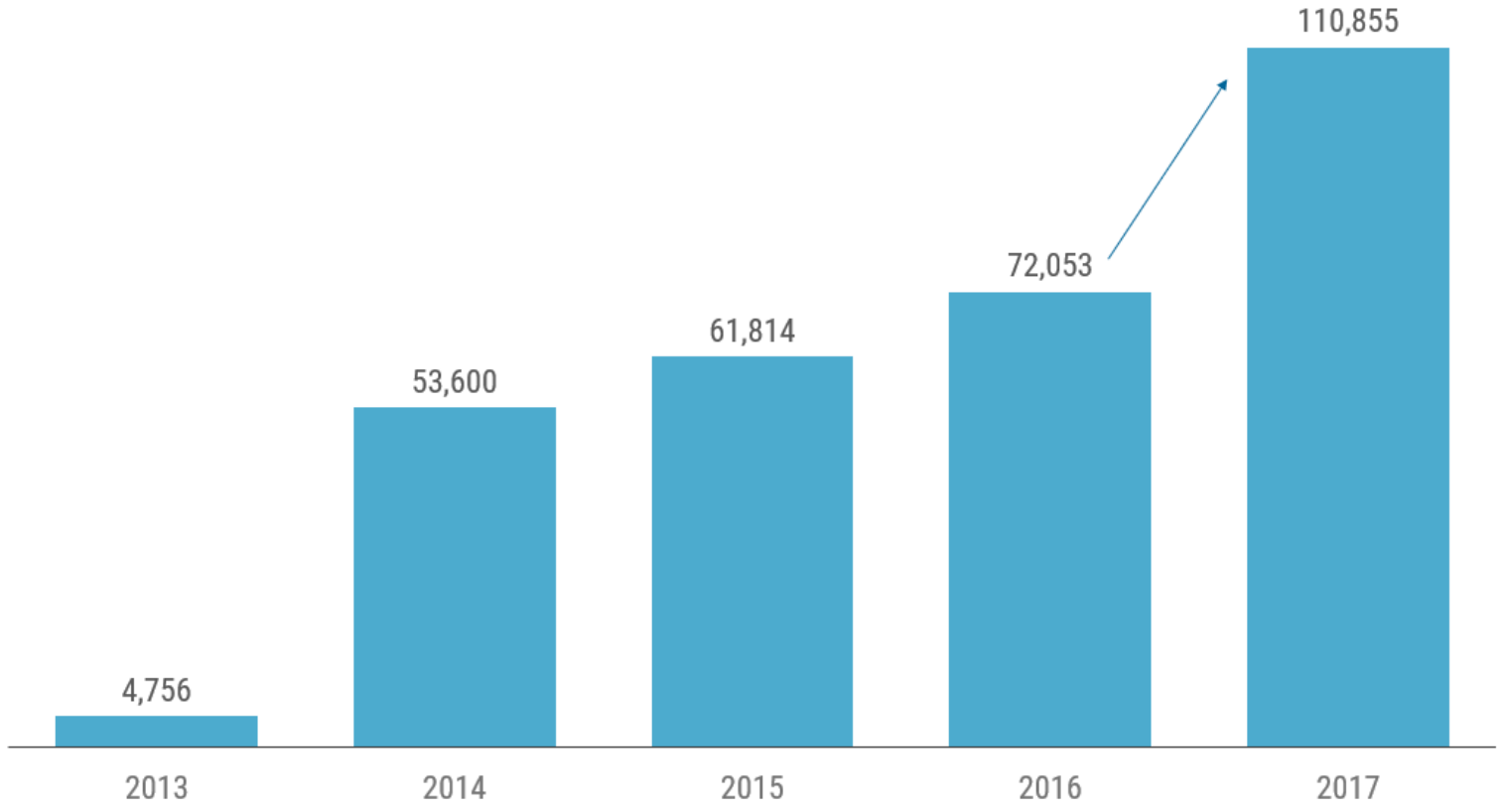
Google is building out its capabilities in cloud

Google has attributed **headcount increases** to hires for cloud for 4 quarters in a row.

Hires include everything from engineers to go-to-market strategists.

Spike in headcount last year driven by cloud hires

Number of employees at Alphabet



Sources: Company data

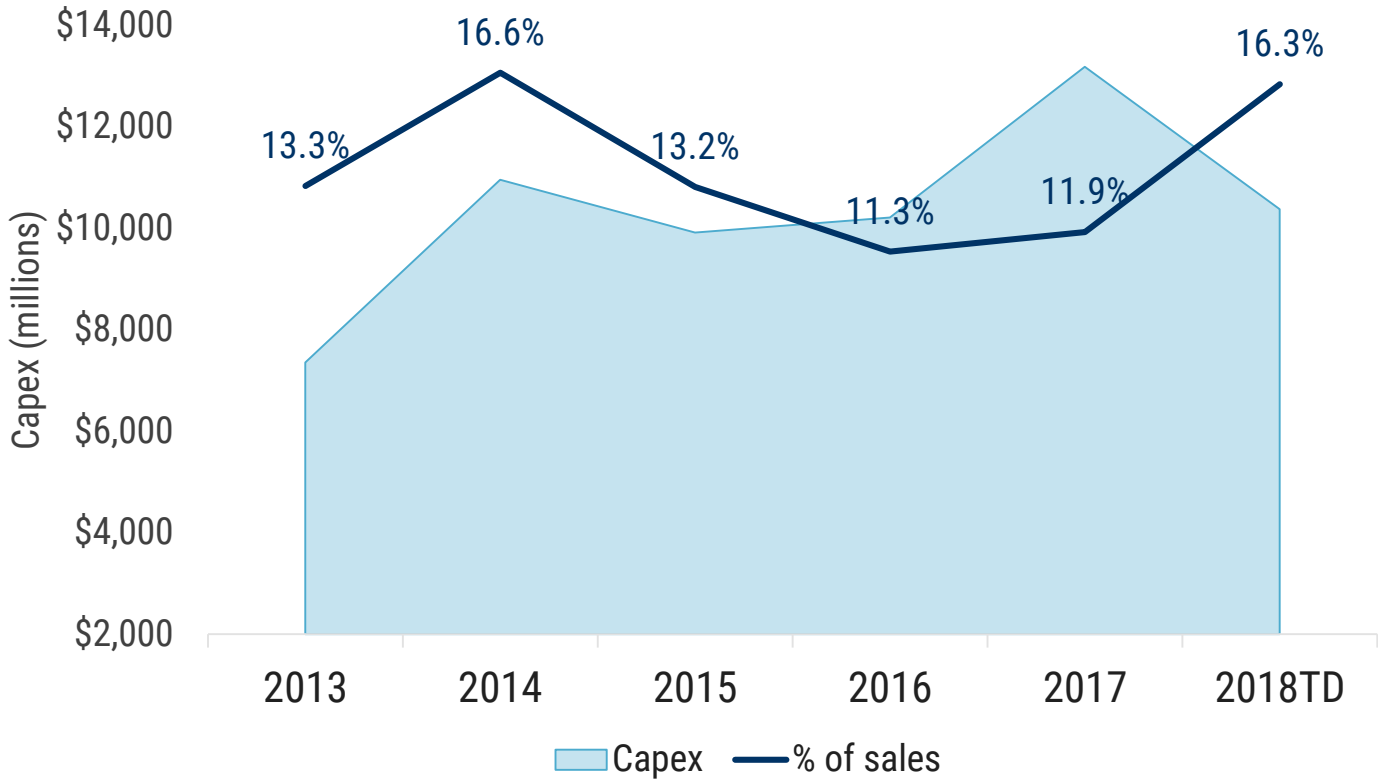
Google ups capex spend to support computing

"We're **focused on capex** as a lens into the outlook for growth for **additional compute capacity**."

- ALPHABET CFO, RUTH PORAT

Capex spend on the rise at Google

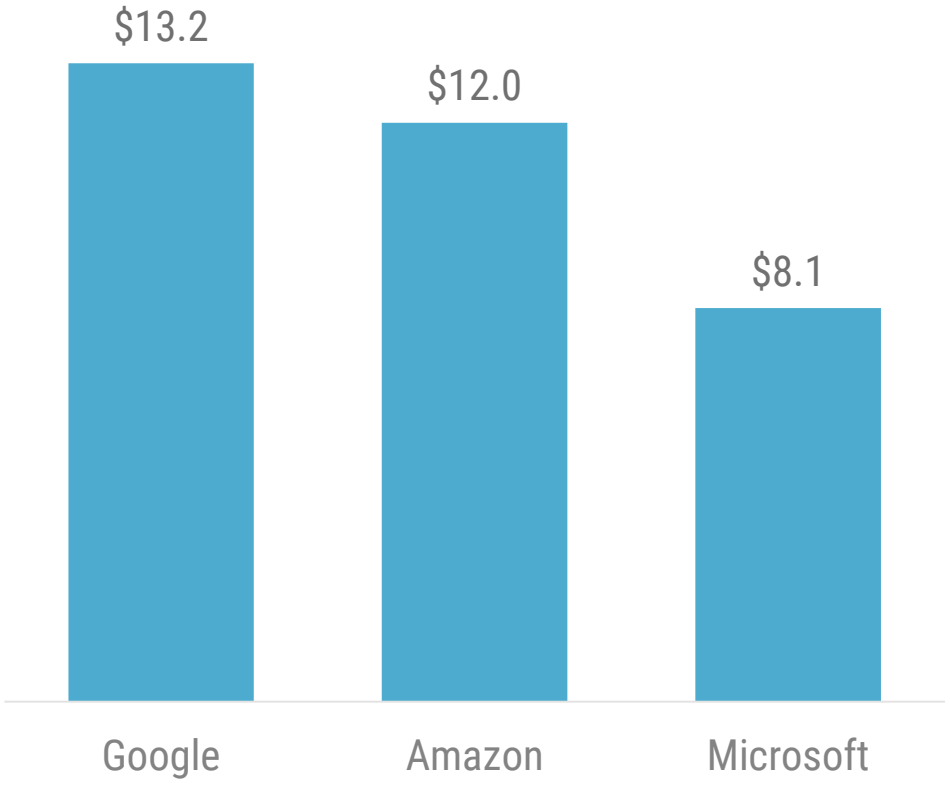
Annual capital expenditures in dollars and as a percentage of total sales



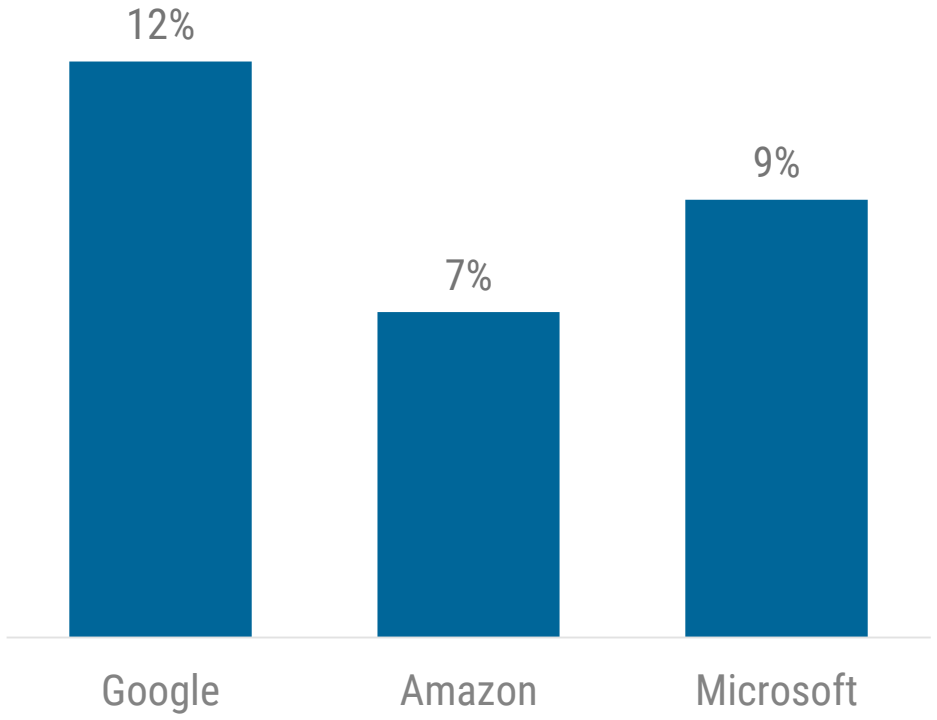
 Sources: Company data

Capex at Google now tracks above cloud peers

Both in absolute dollars…



… and as a percent of total sales



CBINSIGHTS Sources: Company data; $ in billions

M&A another avenue to build out capabilities

"The acquisitions that we've talked about really in particular **fill in holes in cloud**, and that's been really valuable."

- ALPHABET CFO, RUTH PORAT

Google's recent cloud acquisitions

Company	Description	Date	Total Funding	Country
Cask Data	Cask Data, formerly Continuuity, delivers Big Data application fabric, fueling the next generation of Big Data applications by making it fast and easy for any developer to build, deploy, scale and manage Big Data apps.	5/17/2018	$32.5	United States
Velostrata	Velostrata is a cloud workload mobility company.	5/9/2018	$31.5	United States
Xively	Xively, fka Pachube and Cosm, offers IoT platforms and connected product management platforms for enterprises building connected products and services.	2/16/2018	NA	United States
Bitium	Bitium is an enterprise software company that is creating an operating system for cloud-based apps.	9/26/2017	$14.9	United States
AppBridge	AppBridge specializes in helping businesses move their files and data into the Google Cloud platform.	3/9/2017	NA	Canada
Crashlytics	Crashlytics provides developers with detailed diagnostics about issues related to crashes of mobile apps, securely and in real-time.	1/18/2017	$6.0	United States
Fabric	Fabric is a developer toolkit with software products that enable mobile teams to build better mobile apps, understand their users, and grow their businesses.	1/18/2017	NA	United States
Limes Audio	Limes Audio is an expert in acoustic echo cancellation and speech enhancement. It offers the set of tools required to design impressive audio quality into two-way communication products.	1/5/2017	$5.4	Sweden

Google tries to differentiate cloud product

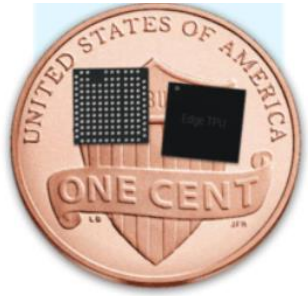
AI and Machine Learning

Google's open-source, deep learning library **TensorFlow is the most popular ML library available today**. Google also other open-source projects focused on the cloud that are focused on databases and developer tools.

Content Delivery

Google has built out a delivery network with miles of fiber optic cables that move information with limited latency. According to research conducted by Cedexis (now Citrix), **Google Cloud offers the fastest and most secure way to deliver content globally**.

IoT and Edge Computing



Edge TPU

Google is focused on its big data processing capabilities, which require high processing power across IoT devices. As a result, the company is prioritizing its edge computing capabilities, namely with the public release of its **Cloud IoT Core** product in February as well as its **Edge TPU** in July.

Data centers central to cloud business

Google has built out a data center network to support its growing cloud business.

The company currently operates 15 data centers across the globe (8 in the US, 4 in Europe, 2 in Asia, and 1 in South America) which house its compute, storage, and data replication services.

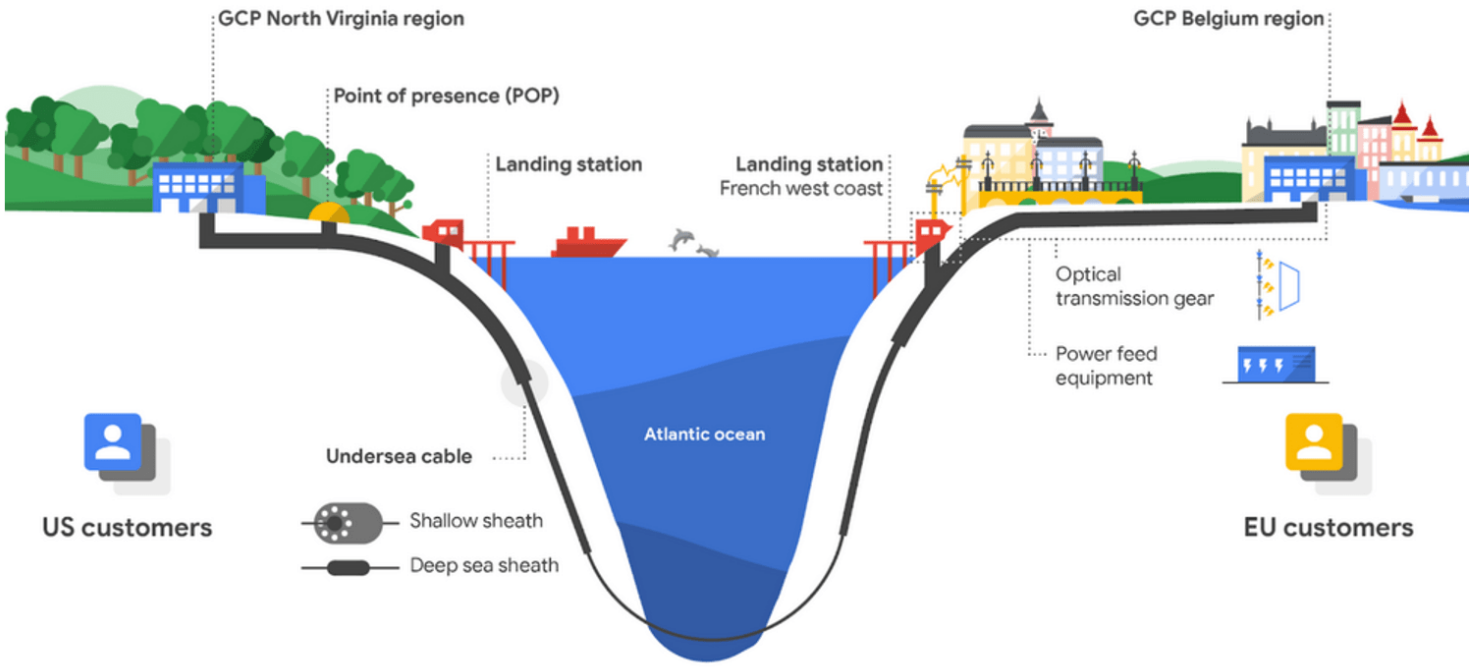
Google is opening data centers across the globe

Google's data center locations

Supporting areas with growing internet usage

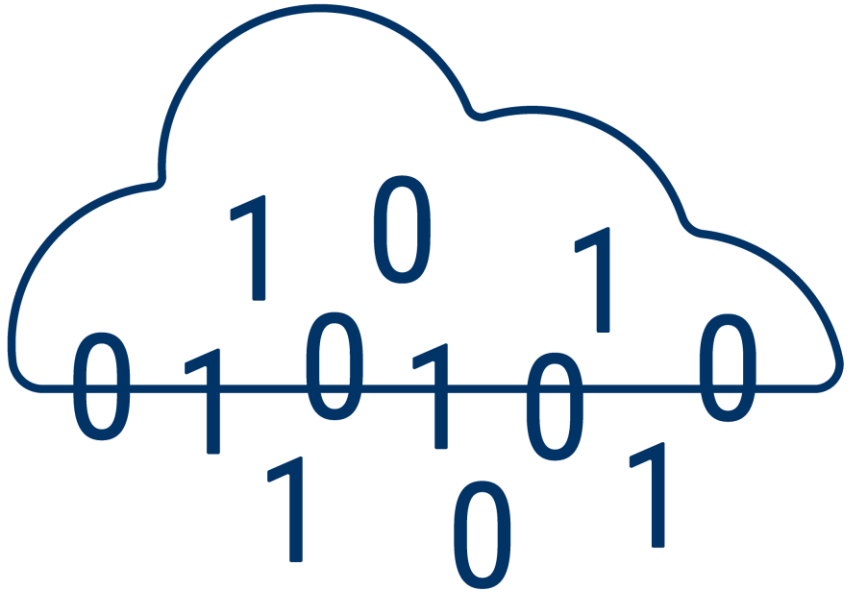
Google has invested heavily in a number of projects to support its computing capabilities.

In July, the company announced a private subsea cable project intended to increase network capacity across the internet and also support the growth of Google Cloud.

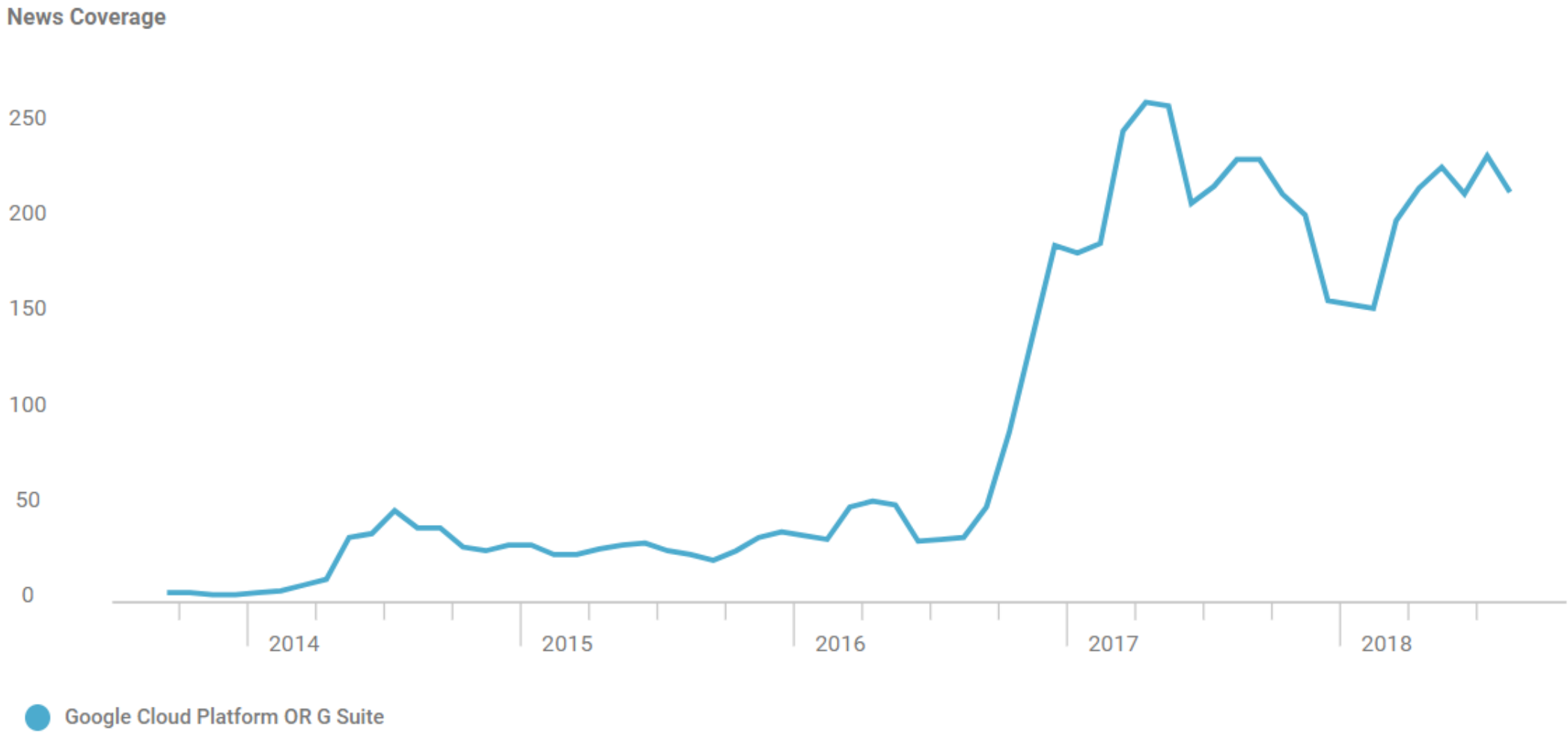


CLOUD & COMPUTING

Where Google is going next



Cloud products garnering more attention

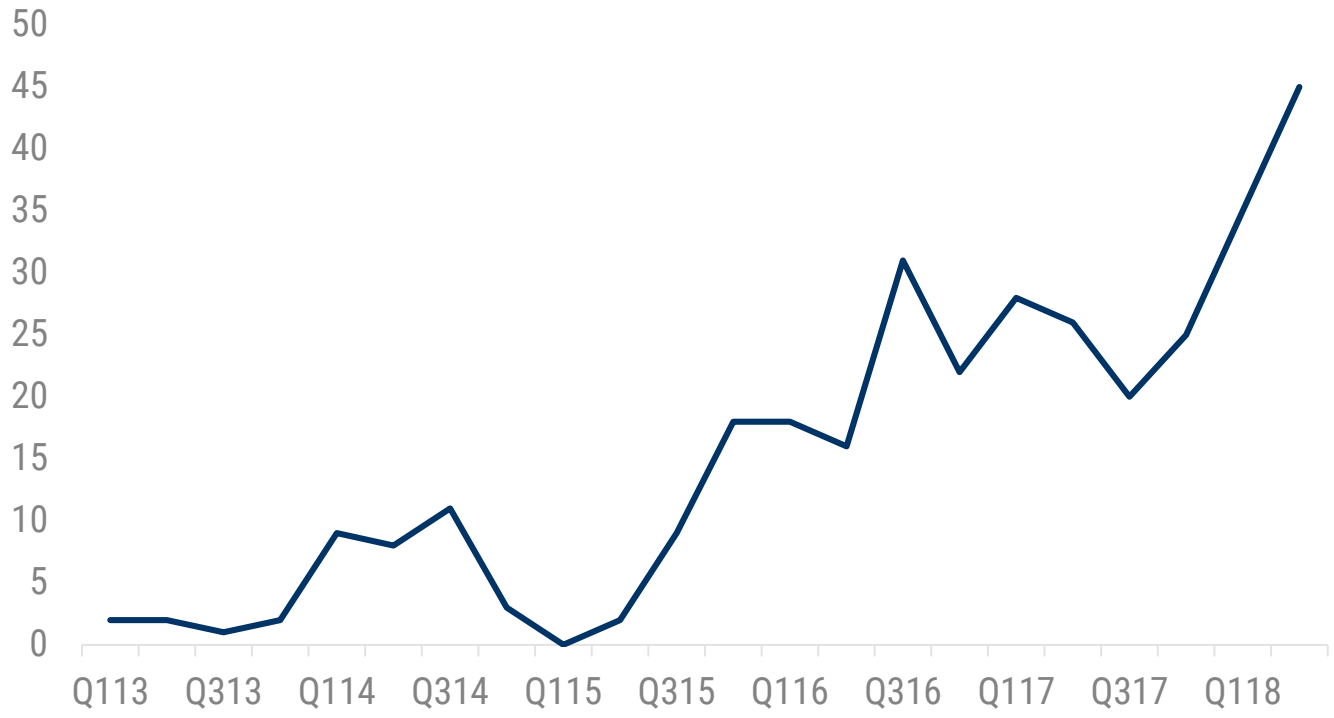


Cloud also topical on earnings calls

Even though cloud has been top-of-mind for Google for several years now, **mentions of cloud and cloud-related products reached a new peak in Q2'18**, suggesting that the company sees increasing opportunity in the space.

Google highly focused on the potential in cloud

Mentions of "cloud" and related terms[1] on Google earnings calls



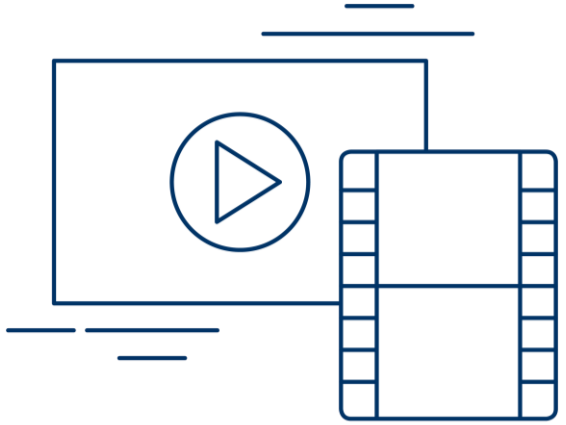
[1]Includes "Google Cloud Platform," "GCP," "G Suite"

Where Google is focused in enterprise

Heavily regulated industries

Google is investing in the necessary security features and certifications to support industries such as healthcare and financial services, which have a harder time migrating to the cloud given regulatory concerns.

Content delivery



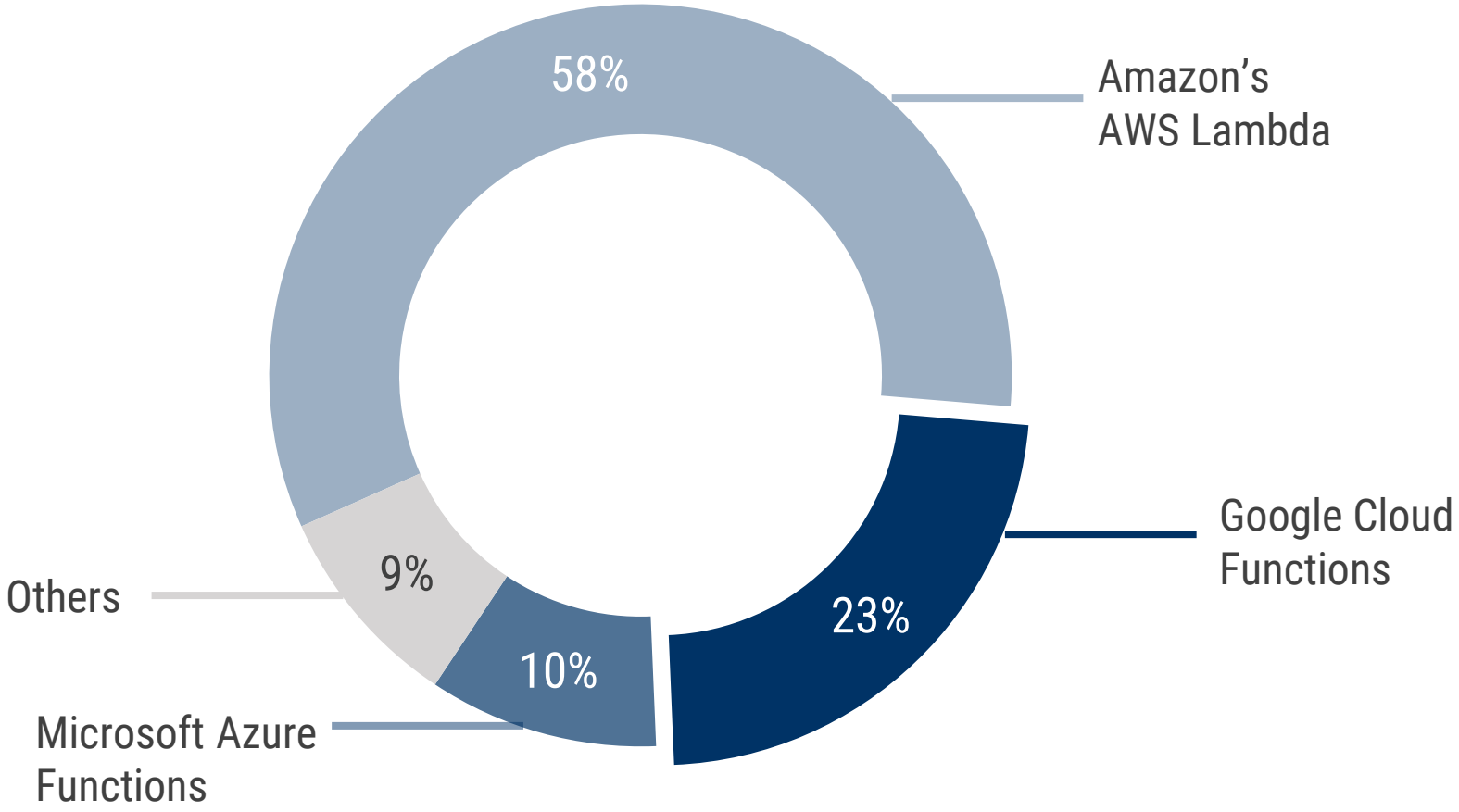
The Google Cloud Platform's low-latency delivery network is attractive to companies like Spotify, Netflix, and Apple that rely on a high-speed network infrastructure to deliver their product.

Hybrid cloud computing

Google is building out its capabilities to support cloud computing on both GCP and in on-premise environments, catering to a number of businesses that would prefer to take a hybrid cloud approach.

Google has gained ground in serverless

Google's serverless computing offering, **Google Cloud Functions**, is now **more than twice as popular** as Microsoft's Azure Functions even though Google's product launched more than 21 months after Microsoft's became generally available.

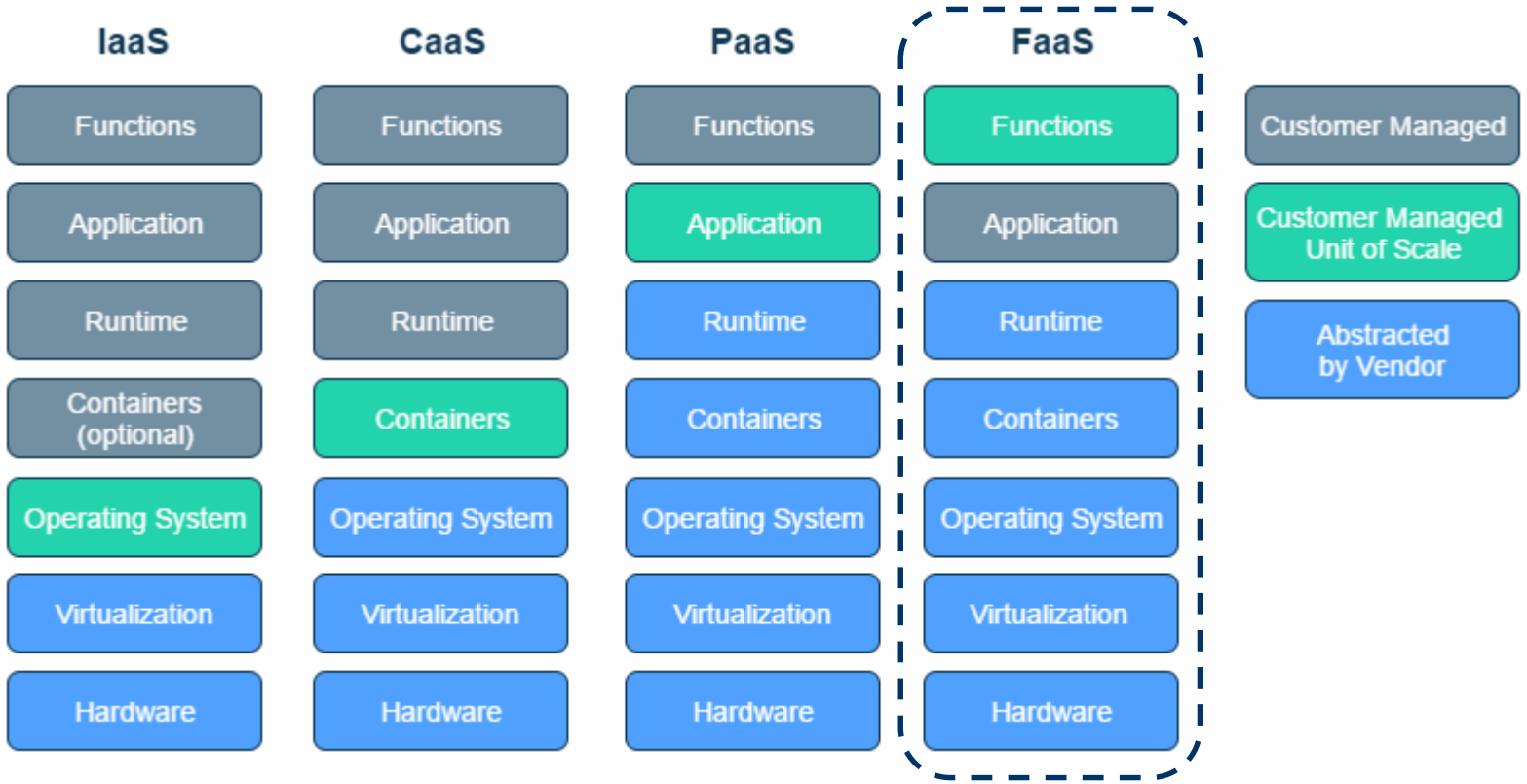


CBINSIGHTS Sources: DigitalOcean

The opportunity in serverless computing

Serverless computing, also known as **Function-as-a-Service (FaaS)**, allows businesses to pay for resources **per function** rather than paying for pre-defined computing capacity and storage.

As a result, developers **don't have to worry about common pain points** in cloud computing such as capacity planning or load balancing.



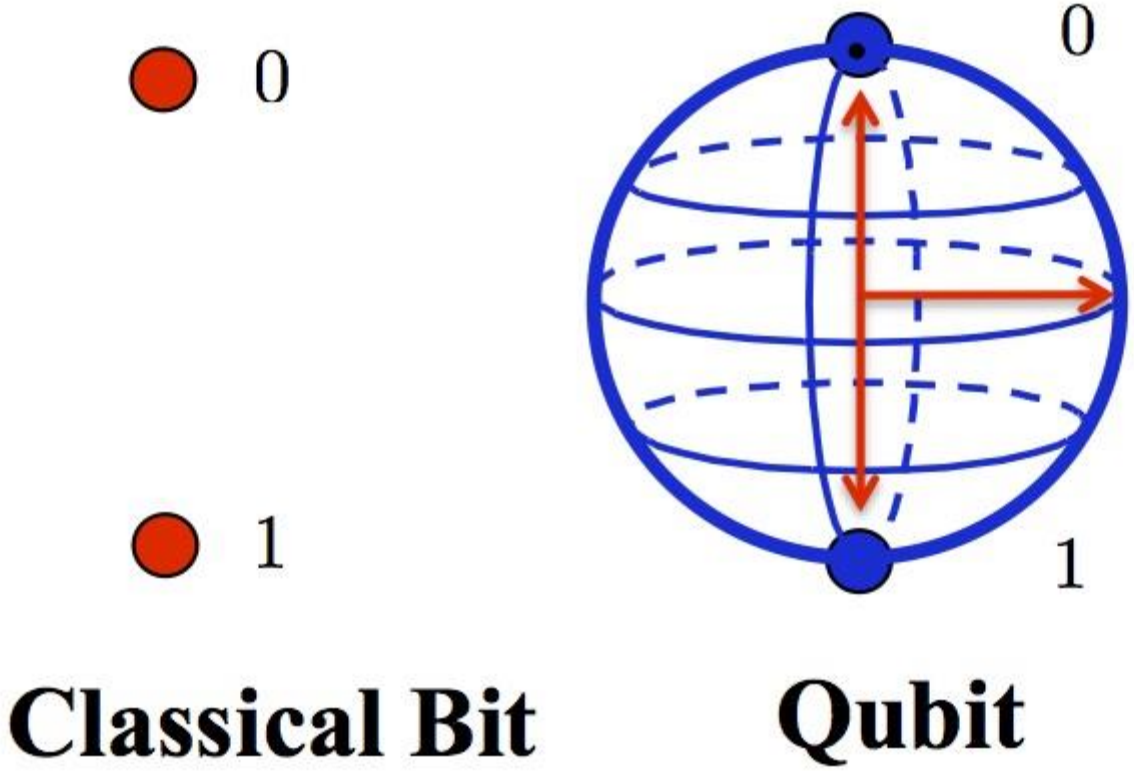
Quantum computing can solve complex problems **exponentially faster** than a traditional computer.

What makes quantum computing so powerful?

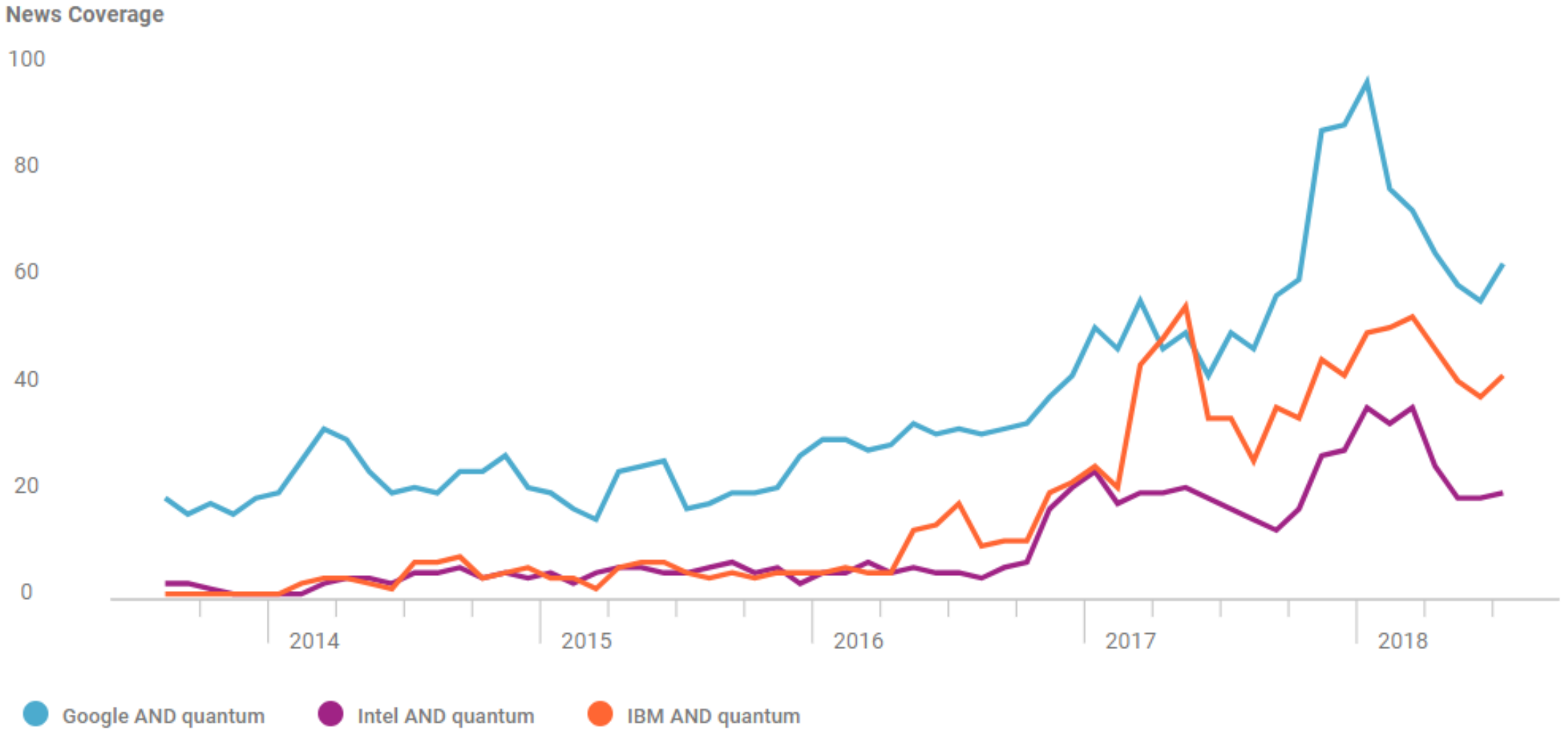
Traditional computers encode information in classical bits, which are binary and can hold only one symbol at a time: 0 or 1.

Quantum computers encode information as quantum bits, or **qubits**, which can hold both a 0 and 1 at the same time through a technique called superposition.

As a result, traditional computers can only process one calculation at a time, whereas quantum computers can perform many calculations at once.



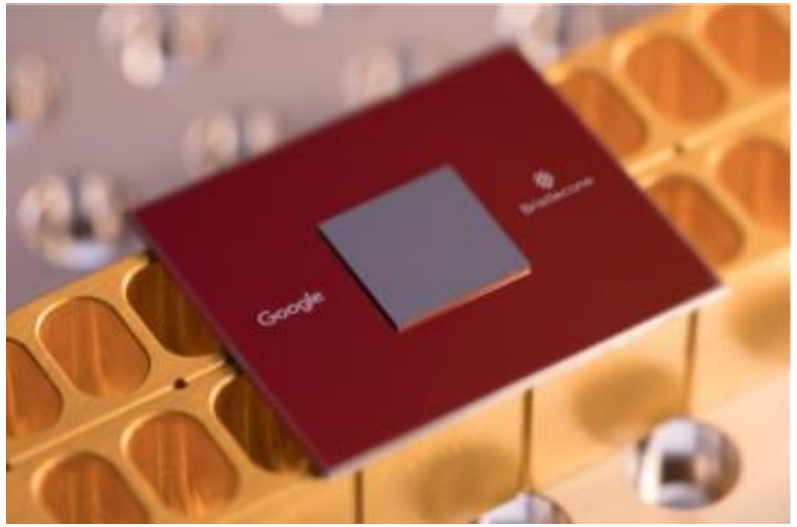
Google leads pack in quantum computing



Pioneering the most powerful processor

In March, Google unveiled its quantum computing processor chip, **Bristlecone**.

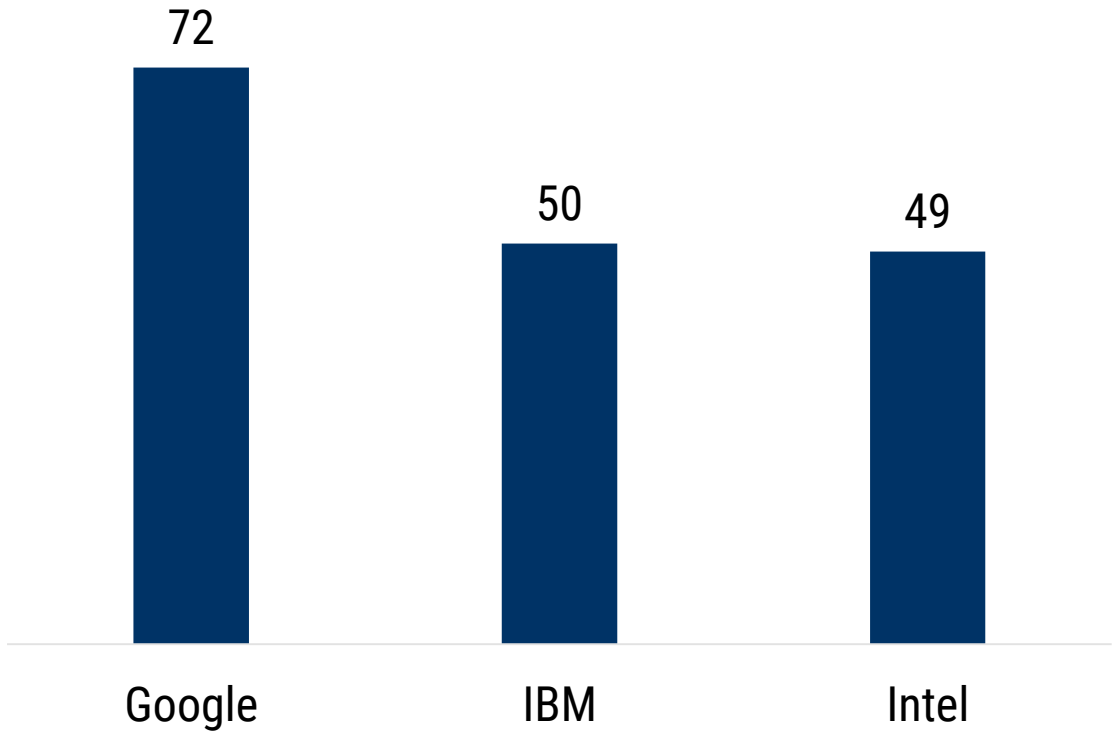
Google's chip contains substantially more quantum bits, or qubits, than chips from peers IBM and Intel.



Google's Bristlecone processor chip

Google's quantum chip has more qubits than chips from peers

Number of qubits on quantum processor chips from Google, IBM, and Intel



HIGH-GROWTH MARKETS

Expand in India & Southeast Asia, rebuild presence in China

HIGH-GROWTH MARKETS

Why they're a priority

"**The user growth there is extraordinary.** And we're seeing it across all our products, which have over a billion users each. We are all doing well in these markets."

- GOOGLE CEO, SUNDAR PICHAI

Access to internet spurring outsized growth

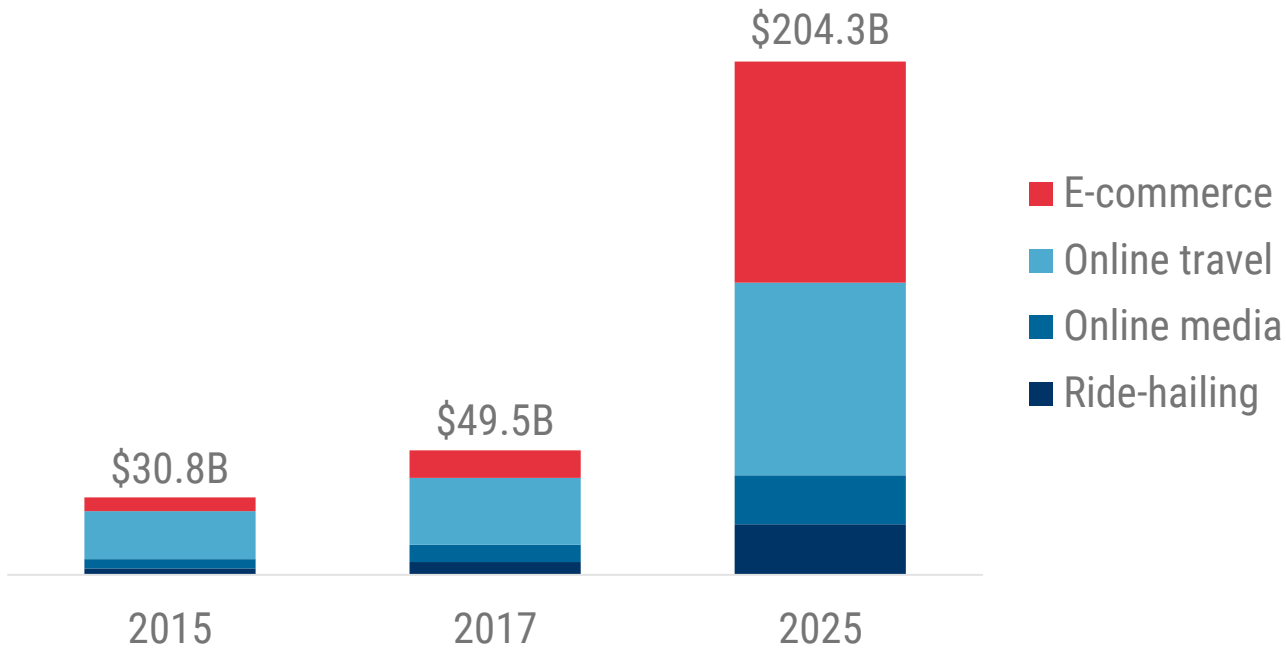
The growth opportunity in India, Southeast Asia, and even China is huge.

With increased internet accessibility in these less developed countries, the consumption of digital services is expected to accelerate, namely through services such as ride-hailing, online travel, and ecommerce.

As smartphone adoption slows in more developed countries such as the US and in Europe, tackling growth opportunities in new countries is a focus across the tech landscape.

Southeast Asia's digital economy expected to boom

Market sizes for Southeast Asia's digital economy ($B)



HIGH-GROWTH MARKETS

What Google is doing now

Google ups funding to India, Indonesia

dunzo

Investor: Google
Funding: $12M Series B
Date: December 2017

Practo Technologies

Investor: capitalG
Funding: $55M Series D
Date: January 2017

CueLearn

Investor: capitalG
Funding: $15M Series B
Date: January 2017

GO-JEK

Investor: Google
Funding: $1.5B Series C – II
Date: January 2018

Aye Finance

Investor: capitalG
Funding: $21.5M Series C
Date: June 2018

Fynd

Investor: GV
Funding: Undisclosed
Date: March 2018

Google capitalizes on digital payments in India

Google launched a mobile payments platform in India in September 2017.

Originally called Tez, the app has since been renamed Google Pay.

In addition to mobile payments, Google has announced that the service will now allow users to pay instant loans.

Google re-ramps initiatives in China

Google invests in content platform ChuShou TV

In December 2017, Google invested $76M in ChuShou TV, an online and mobile live streaming platform specializing in games.

Google invests in China's ecommerce giant JD.com

Google invested $550M in JD.com in June 2018, establishing a partnership that allows JD.com to promote its products via Google search.

capitalG invests in truck-hailing startup Manbang Group

Along with SoftBank, capitalG contributed to Manbang Group's $1.9B financing in April 2018. Manbang runs an app that connects shippers with available truck drivers to help facilitate the transportation of goods.

China isn’t just about search

Waymo opens subsidiary in Shanghai, China

In August, Alphabet’s self-driving arm Waymo announced a subsidiary in China. Called Huimo Business Consulting Co., the subsidiary will be focused on logistics consulting, supply chain, autonomous driving parts, and product design.

JD partnership could provide access to China digital commerce

Google

JD.京东 JD.COM

In June, Google invested $550M in China’s ecommerce giant JD.com, as well as a partnership with the retail giant that will include promoting JD.com’s products on Google’s shopping service. Additionally, Google’s partnership with JD.com will likely give it an opening to re-establish itself in China.

Bringing connectivity to the next billion users

Loon, Google's moonshot project for remote telecommunication projects, recently graduated from X to became its own company under the Alphabet umbrella.

Loon can launch balloons 12+ miles into the stratosphere to provide cellular coverage in remote areas or areas affected by natural disasters. In July, Loon announced that it will launch its first commercial service in Kenya next year, offering 4G coverage via its high-altitude balloons.

HIGH-GROWTH MARKETS

Where Google is going next

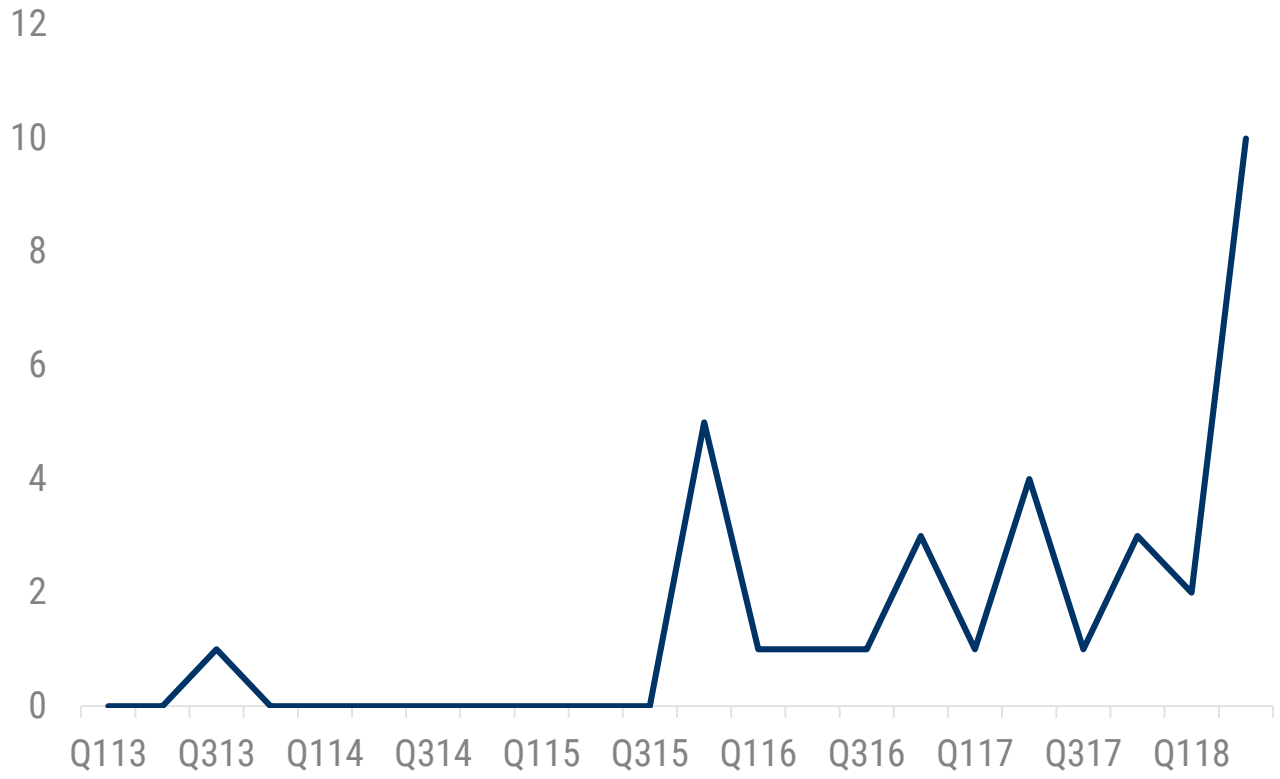
India, Indonesia gain traction on earnings calls

"I want to highlight the work that we're doing to build great specialized products for **the next wave of people coming online for the first time in countries like India, Indonesia, Brazil, and Nigeria**, many of whom experience the web only through their mobile phone. **This is a big area of focus for us**."

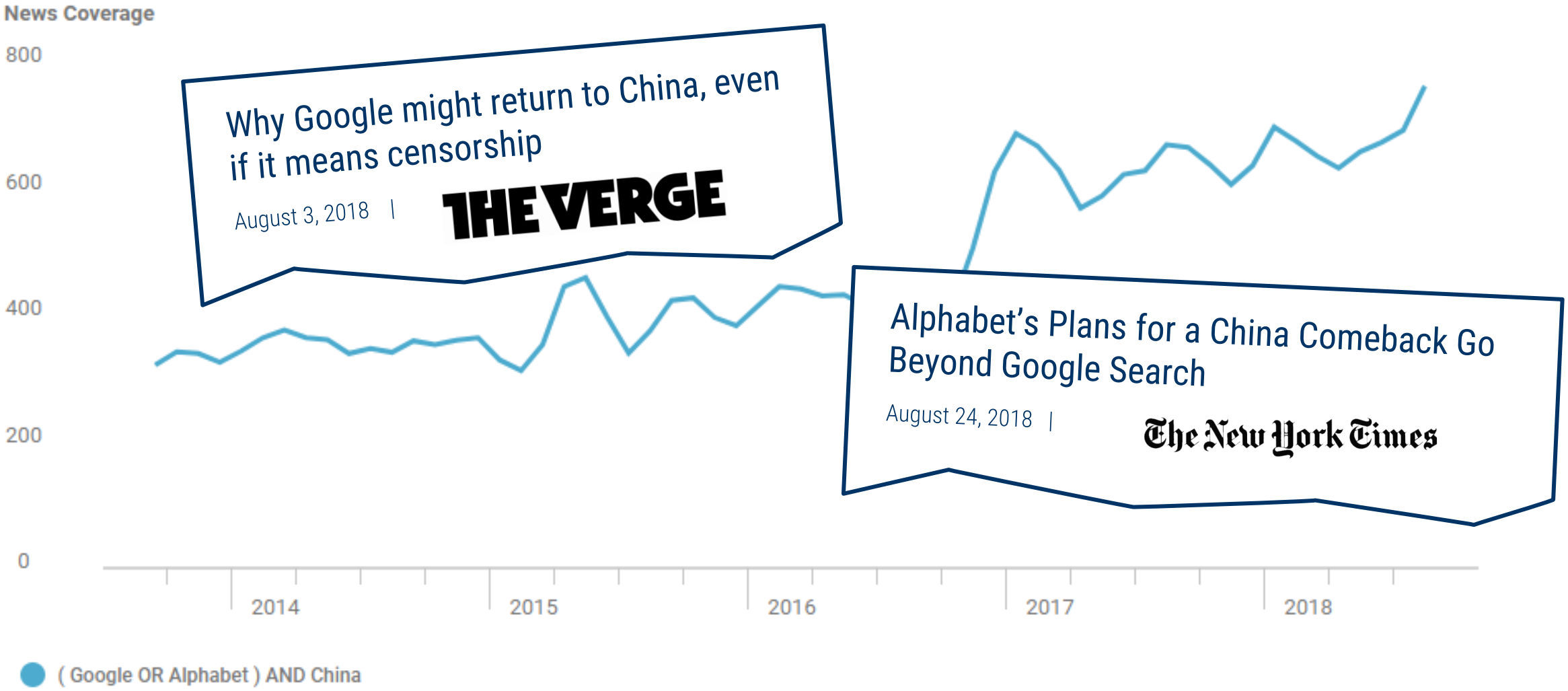
- GOOGLE CEO, SUNDAR PICHAI

India and Indonesia gain traction on Google's earnings calls

Mentions of "India" and "Indonesia" on Google earnings calls



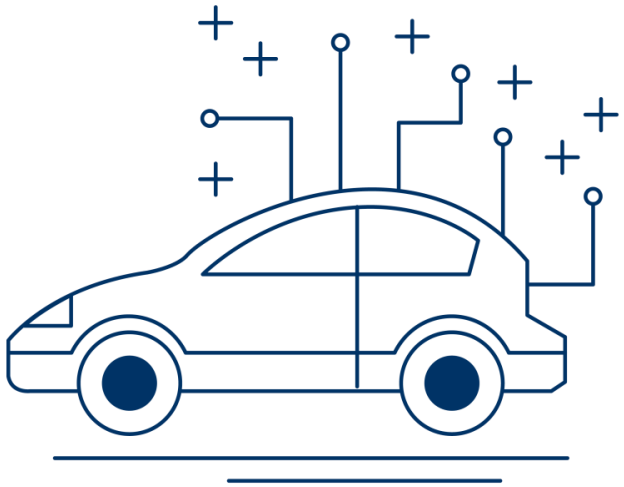
Google re-enters China



 Sources: The Verge, The New York Times

NEW MARKETS

Transportation, logistics, and healthcare



6. Disrupt the transportation and logistics industry

Alphabet has placed a number of strategic bets in the transportation space across its investment arms, and its several ongoing internal projects suggest the company is seeking to capitalize on the future of transportation.

WHAT IT'S DOING NOW

Investments

Google has ramped up its mobility investments in recent months, with both GV and Alphabet investing in scooter company Lime's $335M Series C in July. As mentioned above, Google participated in a $1.5B Series C follow-on tranche for Indonesian ride-hailing company GO-JEK, the largest deal it has participated in to date in 2018 (8/15/18).

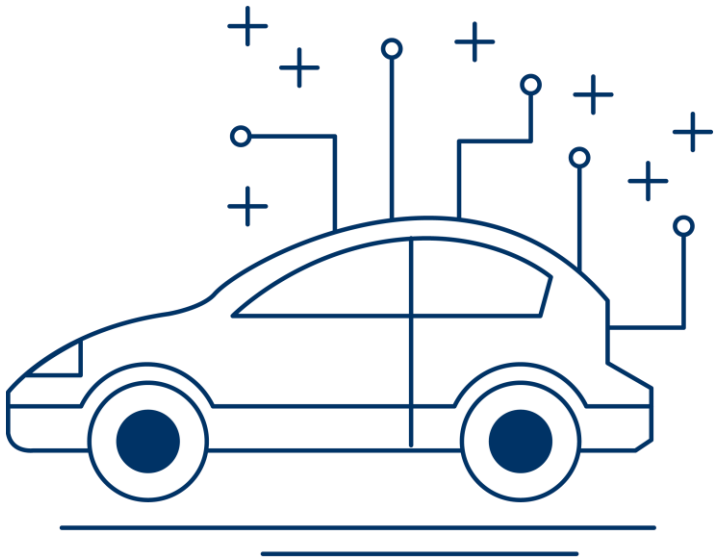
Alphabet's other investment arms, GV and capitalG, have invested in ride-hailing giants Uber and Lyft, respectively.

Product launches

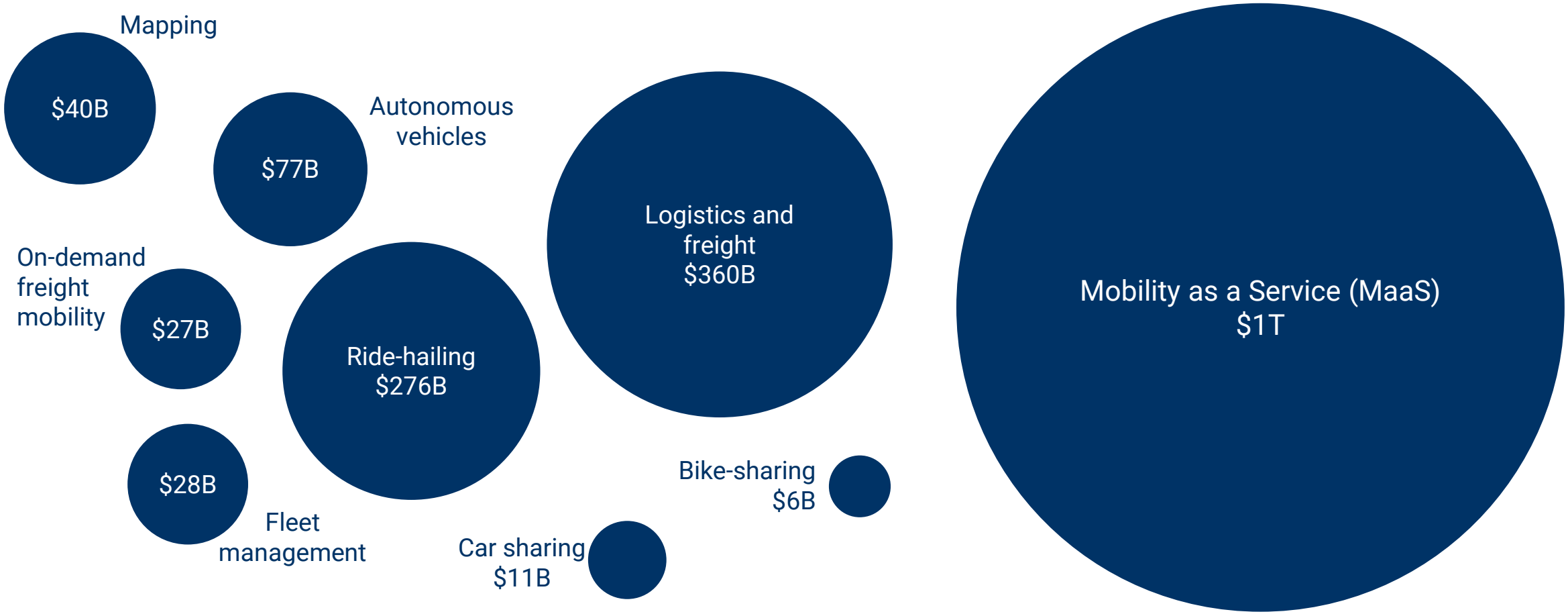
Google has a number of transportation-related projects running in-house. Autonomous driving remains a critical part of Google's Other Bets, as Alphabet's self-driving arm Waymo continues to gain traction.

TRANSPORTATION & LOGISTICS

Why it’s a priority

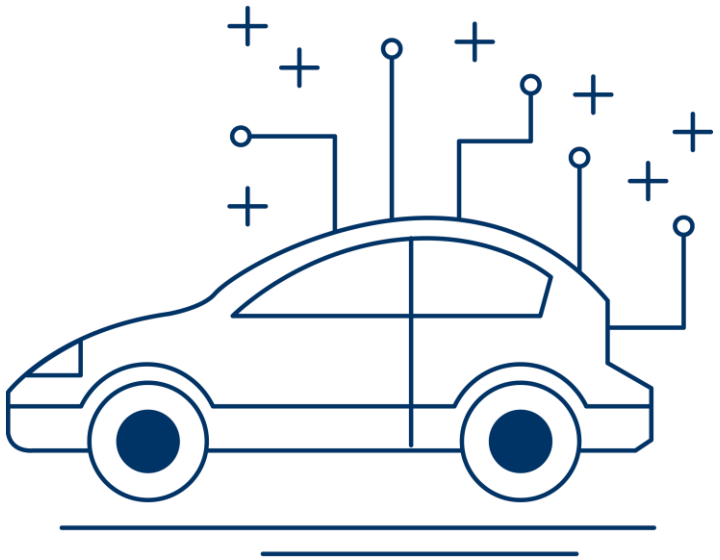


A number of multi-billion dollar markets to enter



TRANSPORTATION & LOGISTICS

What Google is doing now



Recent deals reflect focus on mobility, logistics

Shared mobility

Company: Lime
Investor: GV & Alphabet
Funding: $335M Series C
Date: July 2018

Ride-hailing and delivery

Company: GO-JEK
Investor: Google
Funding: $1.5B Series C follow-on
Date: August 2018

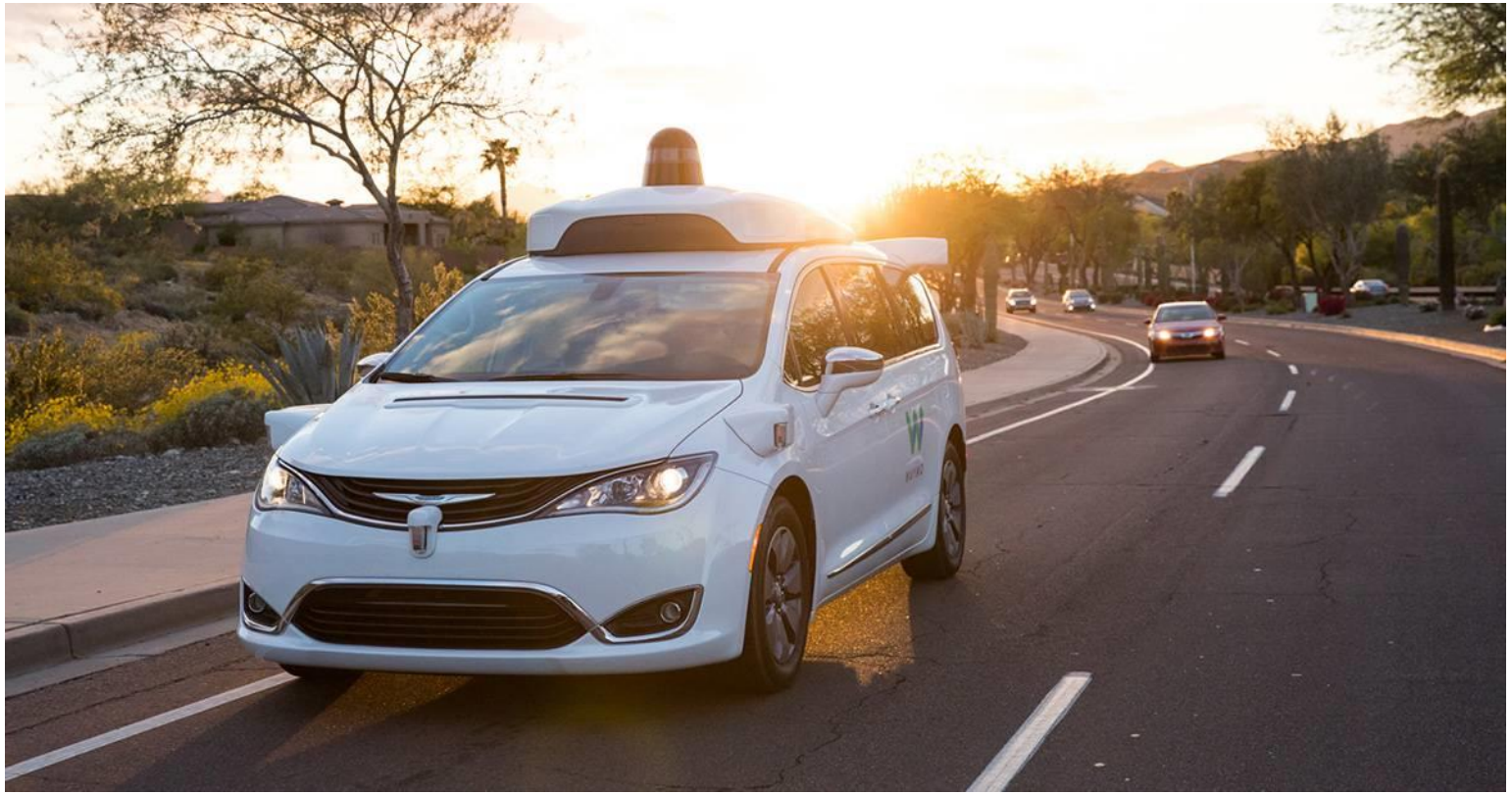
Logistics and supply chain

Company: JD.com
Investor: Google
Funding: $550M
Date: June 2018

Establishing a lead in autonomous driving

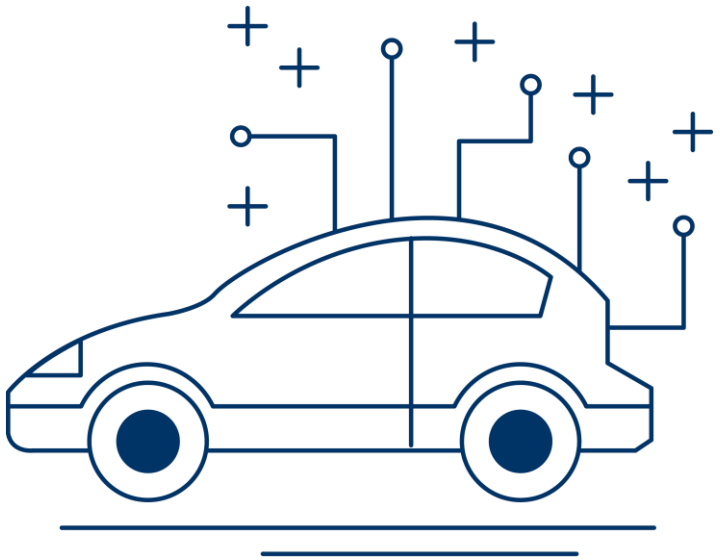
Alphabet self-driving arm, Waymo, is widely recognized as a **leader in autonomous driving**.

The subsidiary recently launched a commercial self-driving fleet service in Phoenix, Arizona.



TRANSPORTATION & LOGISTICS

Where Google is going next



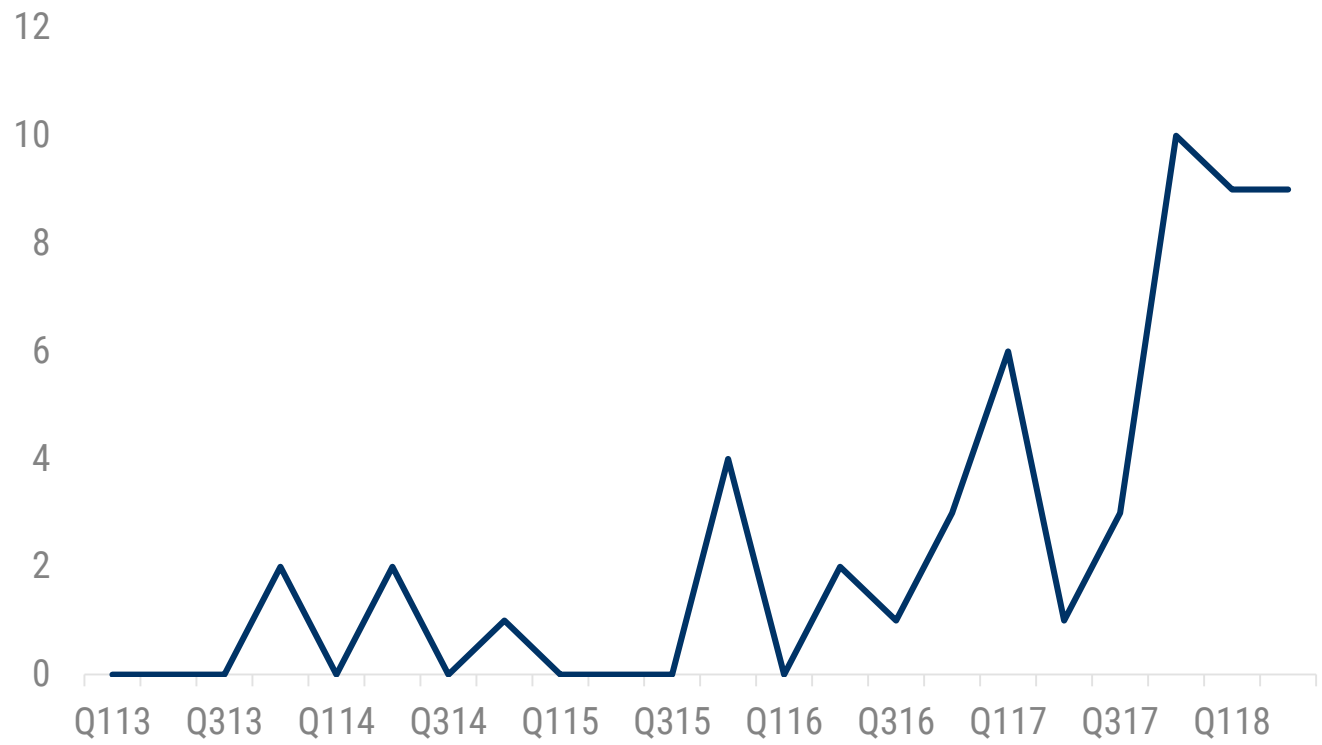
A comprehensive solution for mobility, logistics

Pending the success of Waymo's initial offering in Phoenix, Google will likely **scale its self-driving fleet services** and further integrate its autonomous driving technology in the logistics space.

Google's investments outside of autonomous driving also suggest that it plans to become a **major player in the mobility space at large**, specifically with its investment in Lime as well as its continued build-out of its Google Maps platform.

Google focuses on Waymo as it scales its fleet

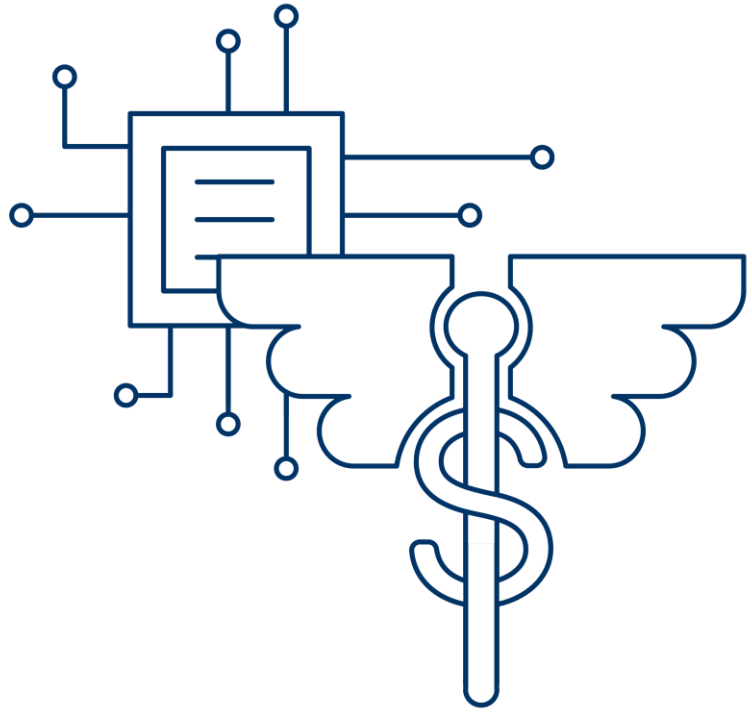
Mentions of "Waymo" and related terms[1] on Google earnings calls



[1]Includes "autonomous driving," "autonomous vehicle," "self-driving"

HEALTHCARE

Push healthcare forward through data and AI



7. Push healthcare forward through data and AI

As we highlighted in our Google in healthcare report, Google has attacked the inefficient healthcare industry from a number of angles.

WHAT IT'S DOING NOW

Disease detection is an crucial part of healthcare. Alphabet's life sciences subsidiary Verily has partnered with a number of other technology and pharmaceutical companies to develop tools to improve disease detection.

In December 2016, Verily partnered with Nikon subsidiary Optos to tackle diabetic retinopathy, a condition where high sugar levels cause damage to blood vessels in the eye.

Investments

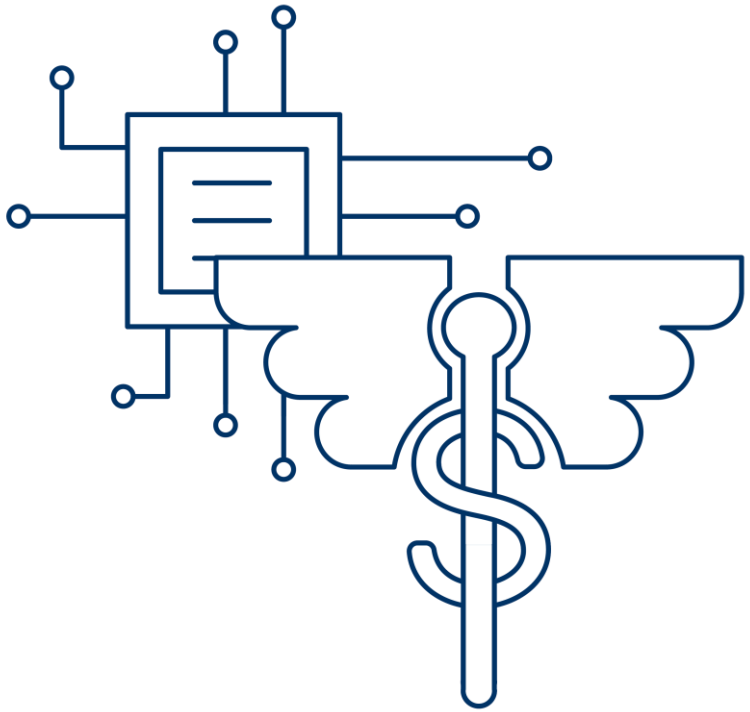
GV has shown a notable interest in the healthcare sector. GV founder Bill Maris inspired the investment arm's focus on healthcare, which now makes up roughly a third of GV's deals (up from just 6% in 2013).

In recent months, the VC arm has taken an interest in AI applications in medicine, participating in Viz.ai's $21M round in July and investing $5M in a Series A follow-on to Owkin in May. Viz.ai uses AI to detect early signs of medical conditions, while Owkin's platform uses deep learning to help clinical researchers develop drugs and predictive models.

GV is also interested in pureplay healthcare, investing in healthcare providers (One Medical), genomics (Editas, Foundation Medicine, 23andMe), and biotechnology (Celsius Therapeutics, IDEAYA Biosciences), and digital health (Oscar Health, Quartet Health). In August 2018, Alphabet made a $375M investment into small health insurer Oscar and announced that longtime Google executive and former YouTube CEO Salar Kamangar would join the board.

HEALTHCARE

Why it’s a priority



Healthcare remains ripe for disruption

1

DISEASE DETECTION AND DATA MANAGEMENT STAND TO BENEFIT FROM AI AND MACHINE LEARNING

The inefficiencies in the healthcare system present an opportunity for Google to implement its expertise in AI to **battle disease**, including everything from monitoring to detection to disease management.

Google is also deploying AI to help increase **healthcare data interoperability**, tackling inefficiencies in data access, organization, and interpretation.

2

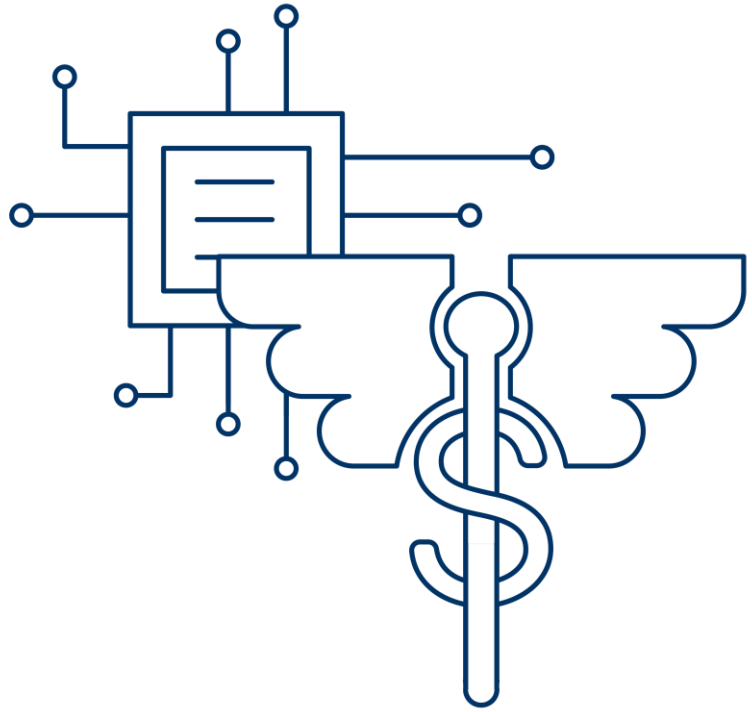
INCREASING INTEROPERABILITY AND EASING DATA TRANSFER THROUGH GOOGLE CLOUD

Google is also catering its cloud product to address issues plaguing the healthcare space, such as data interoperability.

The cloud team has launched a number of **data management and analytics services** that are specifically designed for healthcare businesses.

HEALTHCARE

What Google is doing now



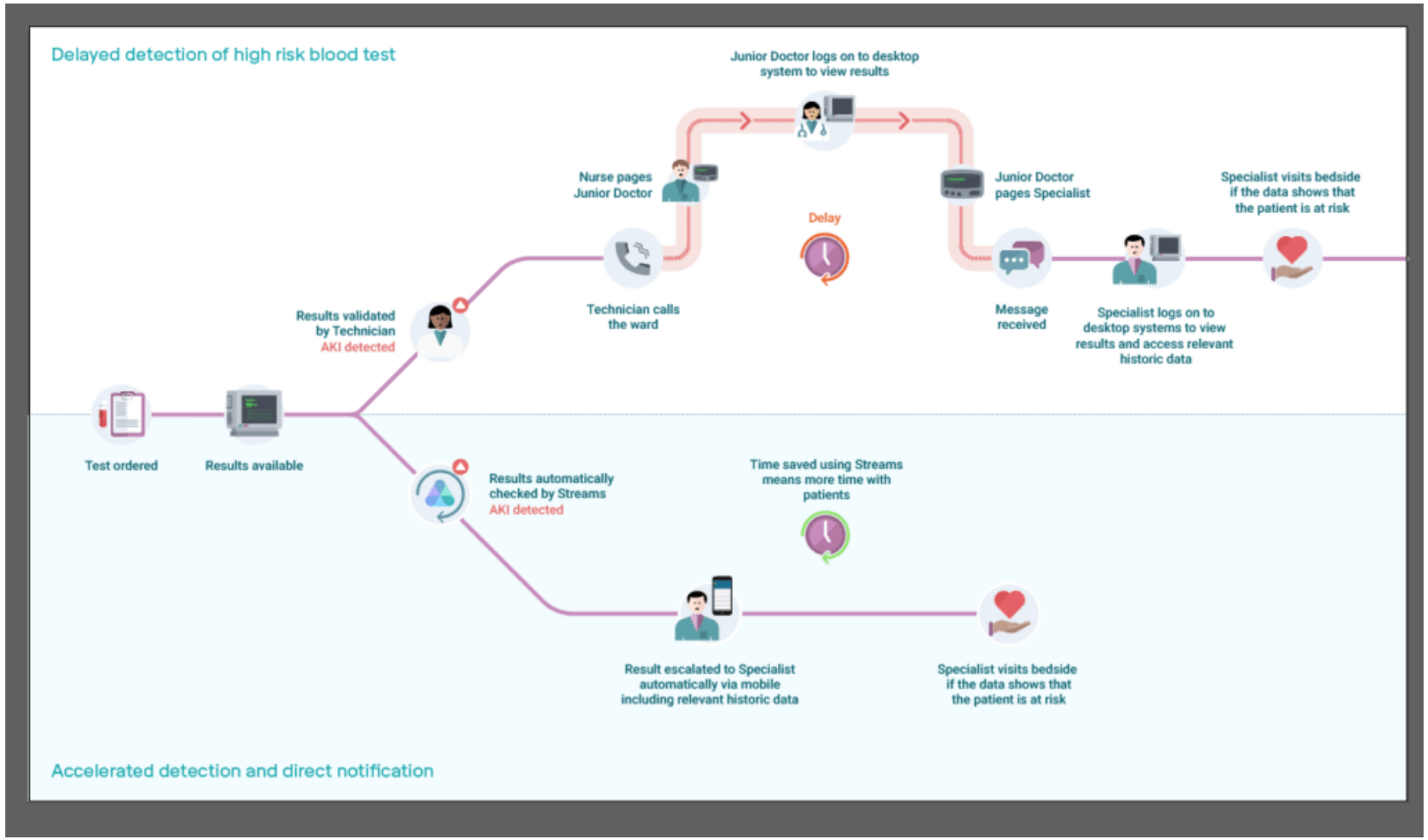
Investing in healthcare a priority at Alphabet

GV has shown a notable interest in the healthcare sector, which **now makes up roughly a third of GV's deals** (up from just 6% in 2013).

Alphabet's subsidiary Verily also makes its own investments, most notably a $500M joint venture focused on diabetes management with pharmaceutical giant Sanofi. The joint venture, called Onduo, is working on an "all-in-one" insulin patch pump that's prefilled and connected to the internet.

In August, Alphabet made a $375M investment into small health insurer Oscar and announced that longtime Google executive and former YouTube CEO Salar Kamangar would join the board.

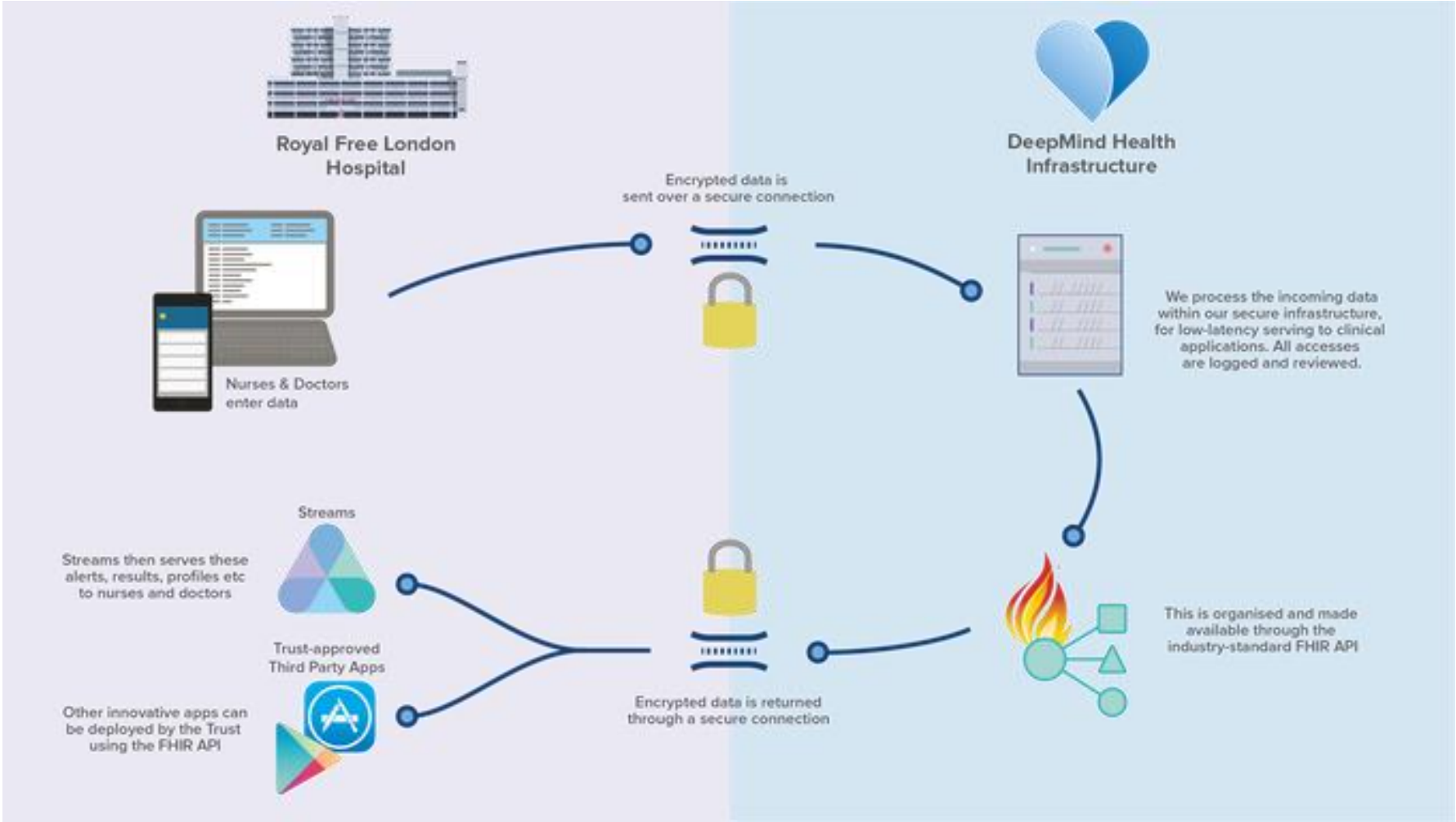
Using AI for disease detection…



Alphabet's AI-focused subsidiary, DeepMind, has developed an app called **"Streams"** that helps detect kidney injuries from lab results so that doctors and nurses can be alerted immediately via a mobile app. The technology helps escalate more urgent cases.

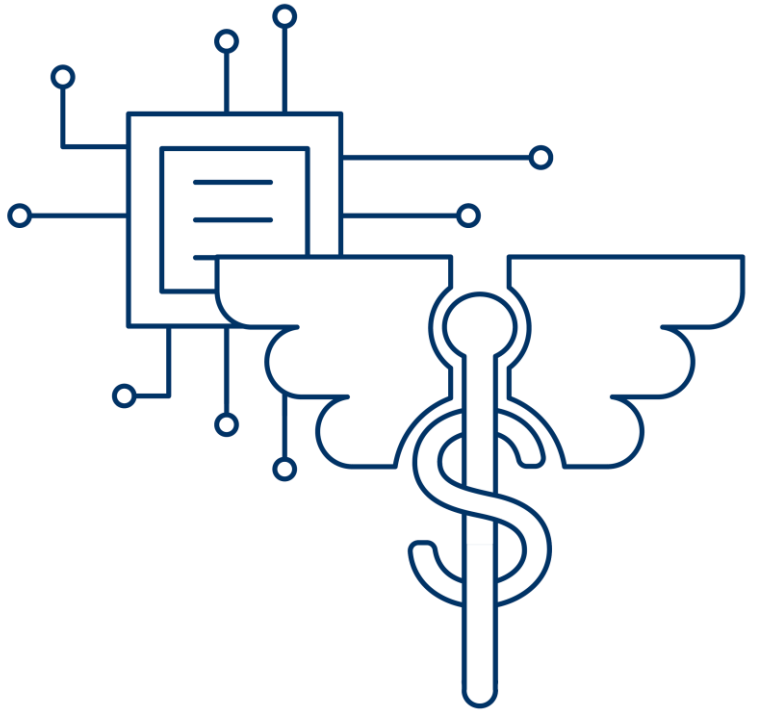
… as well as data management

As part of its collaboration with Royal Free hospitals, DeepMind is developing a **data-sharing access infrastructure** that would allow the Streams app to communicate across hospital systems.



HEALTHCARE

Where Google is going next



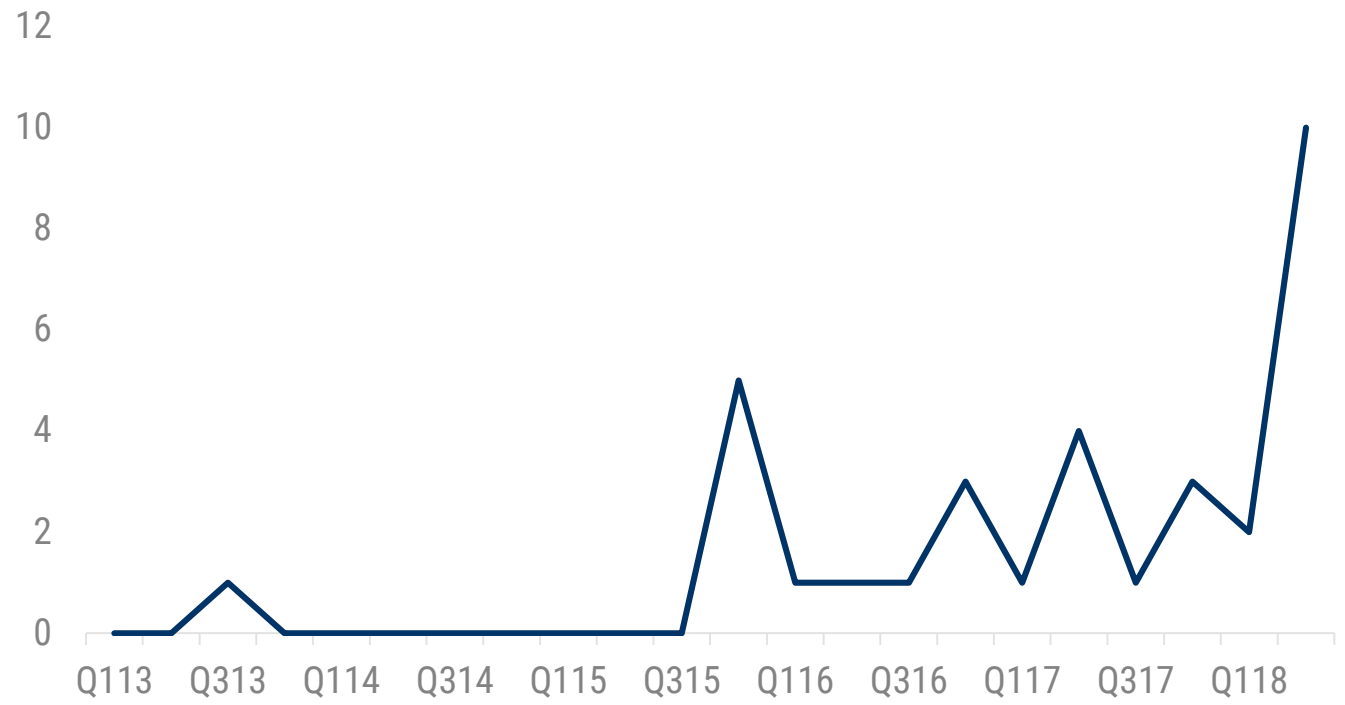
Tackling healthcare through AI and cloud

"**Across healthcare, we see a big opportunity for both Google and Alphabet**. It's a vertical that's very important for Cloud. And we are obviously helping a lot of healthcare partners across their needs."

- GOOGLE CEO, SUNDAR PICHAI

Google sees promise in healthcare moving forward

Mentions of "healthcare," "Calico," and "Verily" on Google earnings calls



IN CONCLUSION

Leading the computing revolution

IN CONCLUSION

"Computing is in the middle of an **exciting transformation**. Today you use a single-purpose computer, your laptop, or your phone. **Over time, computing will be there ambiently for you, when you need it**, in the context of your life."

- GOOGLE CEO, SUNDAR PICHAI

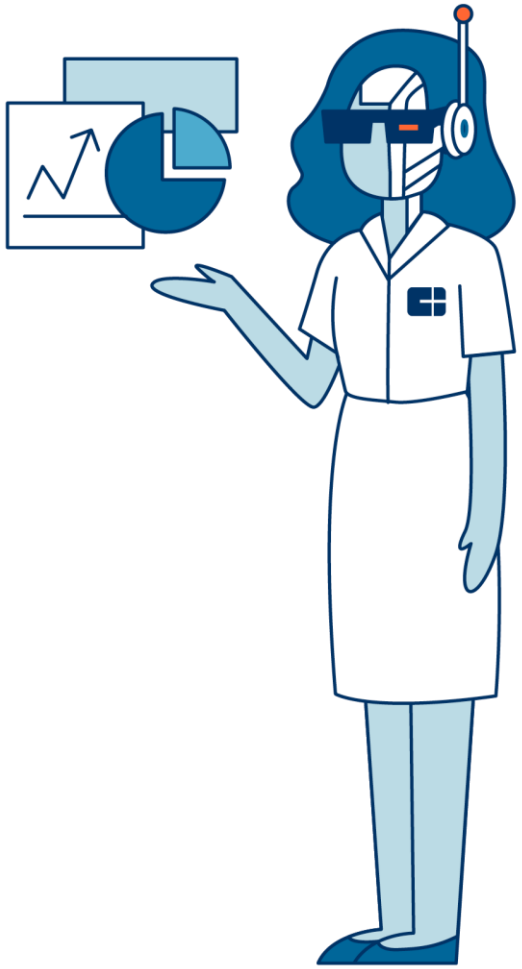
Questions?

Twitter: @rachelsbinder

rbinder@cbinsights.com

WHERE IS ALL THIS DATA FROM?

The CB Insights platform has the underlying data included in this report



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