

Google Is Working on Its Own Blockchain-Related Technology

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- Alphabet division developing a distributed digital ledger
 - Company insiders say cloud is natural home for the technology
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Google is working on blockchain-related technology to support its cloud business and head off competition from emerging startups that use the heavily-hyped technology to operate online in new ways, according to people familiar with the situation.

Companies use blockchain and other so-called digital ledgers to securely record transactions and process other data over the internet -- a service Google could use, for example, to reassure customers that their information is protected when stored on the giant network of computer servers that power its cloud services.

The [Alphabet Inc.](#) unit is developing its own distributed digital ledger that third parties can use to post and verify transactions, one of the people said. Although the timing of any product release is unclear, the company plans to offer this to differentiate its cloud service from rivals. It will also provide a white-label version that other companies can run on their own servers, the person added.

The internet giant has also been acquiring and investing in startups with digital ledger expertise. Many of the deals haven't been announced, the person said. Still, Alphabet was a leading corporate investor in the field last year, ahead of Citigroup Inc. and Goldman Sachs Group Inc., [according](#) [to research firm CB Insights](https://www.cbinsights.com/research/report/blockchain-trends-opportunities/).

Several people in Google's infrastructure group, which reports to cloud chief Diane Greene, have been tinkering with blockchain protocols in recent months, according to another person familiar with the company. Other Google insiders said recently that the

cloud business is a natural place for blockchain-related services. The people asked not to be identified talking about the subject because the company isn't ready to make an announcement yet.

"Like many new technologies, we have individuals in various teams exploring potential uses of blockchain but it's way too early for us to speculate about any possible uses or plans," a Google spokesman said.

In 2016, Google started a trial <<https://www.bloomberg.com/news/articles/2016-09-23/google-cloud-joins-amazon-ibm-in-serving-blockchain-clients>> for developers testing blockchain services on its cloud. The company is now exploring much more expansive ways to deploy the technology, the people said.

Digital ledgers like blockchain power Bitcoin and other cryptocurrencies. They are databases that are updated regularly across thousands of computers over the internet. Each entry is confirmed by these machines, which can be part of public networks or run privately by companies. There are different kinds of digital ledgers -- blockchain is only one. Data crunched by this technology range from transactions to supply-chain updates to digital cats <<https://www.bloomberg.com/news/articles/2017-12-04/cryptokitties-quickly-becomes-most-widely-used-ethereum-app>> .

The technology presents challenges and opportunities for Google. Distributed networks of computers that run digital ledgers can eliminate risks that come with information held centrally by a single company. While Google's security is strong, it's one of the largest holders of information in the world. The decentralized approach is also beginning to support new online services that compete with Google.

Still, the company is an internet pioneer and has long experience embracing new and open web standards. To build its ledger, Google has looked at technology from the Hyperledger consortium, but it could opt for another type that may be easier to scale to run millions of transactions, one of the people familiar with the situation said.

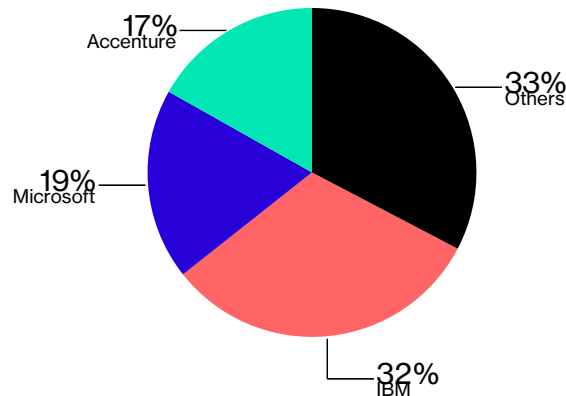
"Any time there's a paradigm shift like this, there's an opportunity for new giants to emerge -- but also for incumbents to adopt the new approach," said Elad Gil, a startup investor who worked on early mobile projects at Google more than a decade ago.

Sridhar Ramaswamy, Google's advertising chief, said at a recent conference that his division has a "small team" looking at blockchain, but noted the existing core technology can't handle a lot of transactions quickly. Some marketing firms have started to explore blockchain's potential to facilitate digital ad buying without using Google and Facebook Inc., the two dominant industry players.

When Alphabet wants to keep up with emerging technology, it often backs startups in the field and makes small acquisitions to recruit talent. GV, Alphabet's venture capital arm, has invested in wallet service Blockchain Luxembourg, financial transactions network Ripple, cryptocurrency asset management platform LedgerX, international payments provider Veem and the now-defunct Bitcoin, according to CB Insights.

Global Blockchain Spending

IBM, Microsoft benefit the most from distributed ledger technology



Source: WinterGreen Research Inc.

Note: Figures shown are percent of total dollar sales

Among tech giants, [IBM](#) and [Microsoft Corp.](#) have so far led the charge in offering blockchain-related tools and letting companies tinker with digital ledgers using their cloud services. The market for blockchain products and services may grow from \$706 million last year to more than \$60 billion in 2024, [according to](#) <http://www.wintergreenresearch.com/blockchain> WinterGreen Research. Cloud's 800-pound gorilla, [Amazon.com Inc.](#), helps companies build blockchain applications, and Facebook chief Mark Zuckerberg is [looking](#) <https://www.facebook.com/zuck/posts/10104380170714571> at cryptocurrencies, encryption and other decentralized computing approaches.

A slew of startups are trying to challenge Google's online dominance by using digital ledgers. Brave is a web browser that competes with Google's Chrome. Instead of running targeted ads, Brave uses blockchain technology to pay websites when people spend time there. BitClave lets people perform searches online, and get rewarded for seeing ads. Another project, Presearch, is also using blockchain to try to compete with Google's search engine, according to a [white paper](#) <https://www.presearch.io/uploads/WhitePaper.pdf> by the startup.

"You're going to see an unbelievable amount of R&D expenditures go into this," said Jeff Richards, a managing partner at venture firm GGV Capital. "Everybody learned from the internet and mobile that you can't afford to wait."

— *With assistance by Joe Mayes*

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