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## Blockchain and the lure of the next big thing

Curt\_Hopkins (/t5/user/viewprofilepage/user-id/1652521) on 07-14-2016 11:31 AM



By Curt Hopkins, Managing Editor, Hewlett Packard Labs

Blockchain, the distributed ledger best known as the main building block of the cryptocurrency [Bitcoin \(https://www.bitcoin.com/you-need-to-know\)](https://www.bitcoin.com/you-need-to-know), is the next big thing. According to analysts at Deloitte, \$1 billion dollars of venture capital has flowed into more than 120 blockchain-related startups, half of that in the last 12 months.

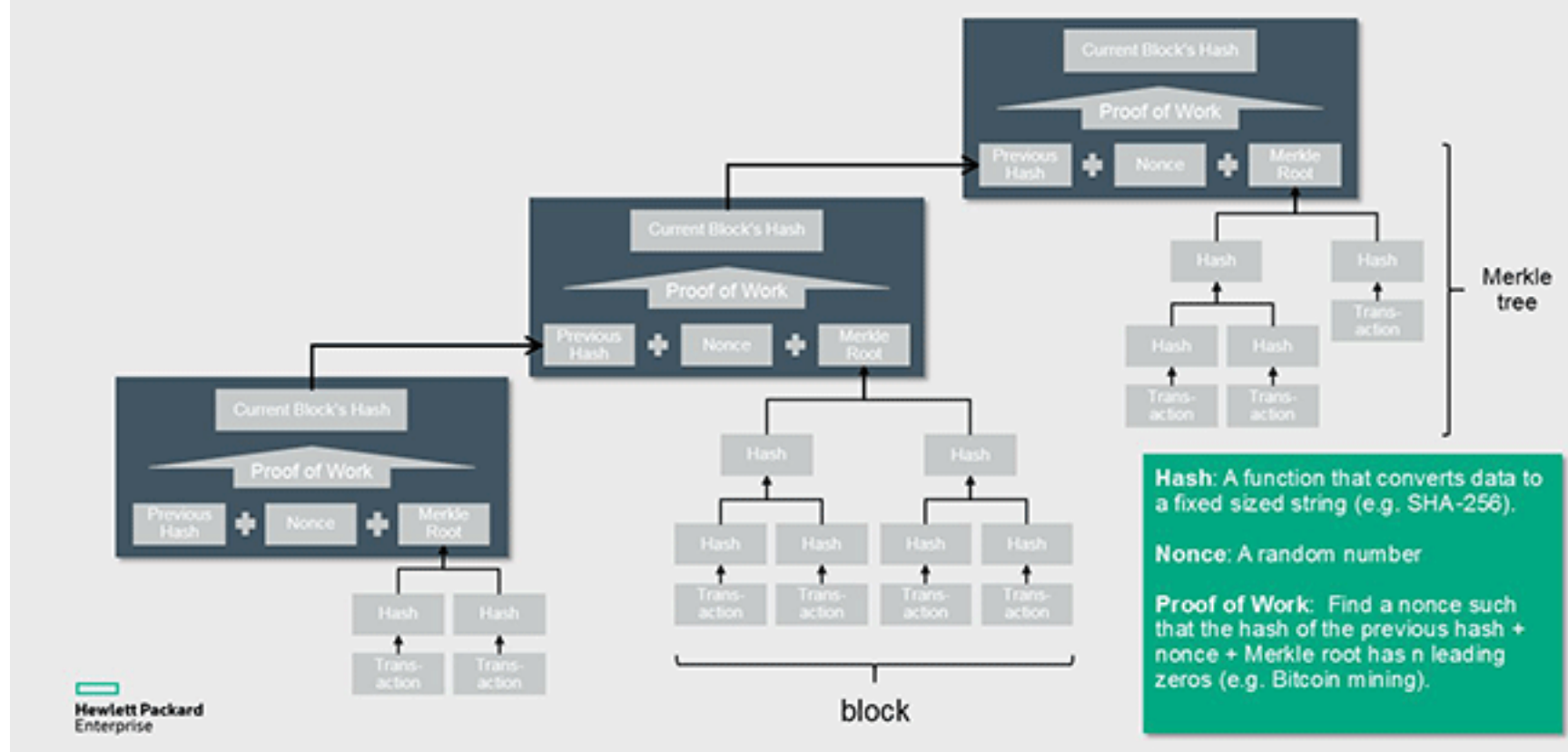
Blockchain is a software technology that allows the production of an open and decentralized ledger, or list of transactions. This shared ledger can be viewed and updated by any entity with appropriate access. Transactions are handled in groups, called "blocks," each new block connected to the previous one in a tamperproof chain using [cryptographic hashing \(https://en.wikipedia.org/wiki/Cryptographic\\_hash\\_function\)](https://en.wikipedia.org/wiki/Cryptographic_hash_function).

For most people, blockchain is under the hood, but for those who have popped that hood – executives of the companies that are most likely to be affected by it – their relationship to the technology is all too often one of fear: The fear of getting passed by, the fear of being the CEO who let the blockchain opportunity go by, fear of a hack that could have been avoided, the fear of missing the money to be made from it.

Thankfully, HPE and Labs have a number of skilled counselors on hand.



## How do they work?



### Going deep on blockchain

Hewlett Packard Labs' connection to the distributed ledger software blockchain is deeper than most people realize. We've been there from the beginning.

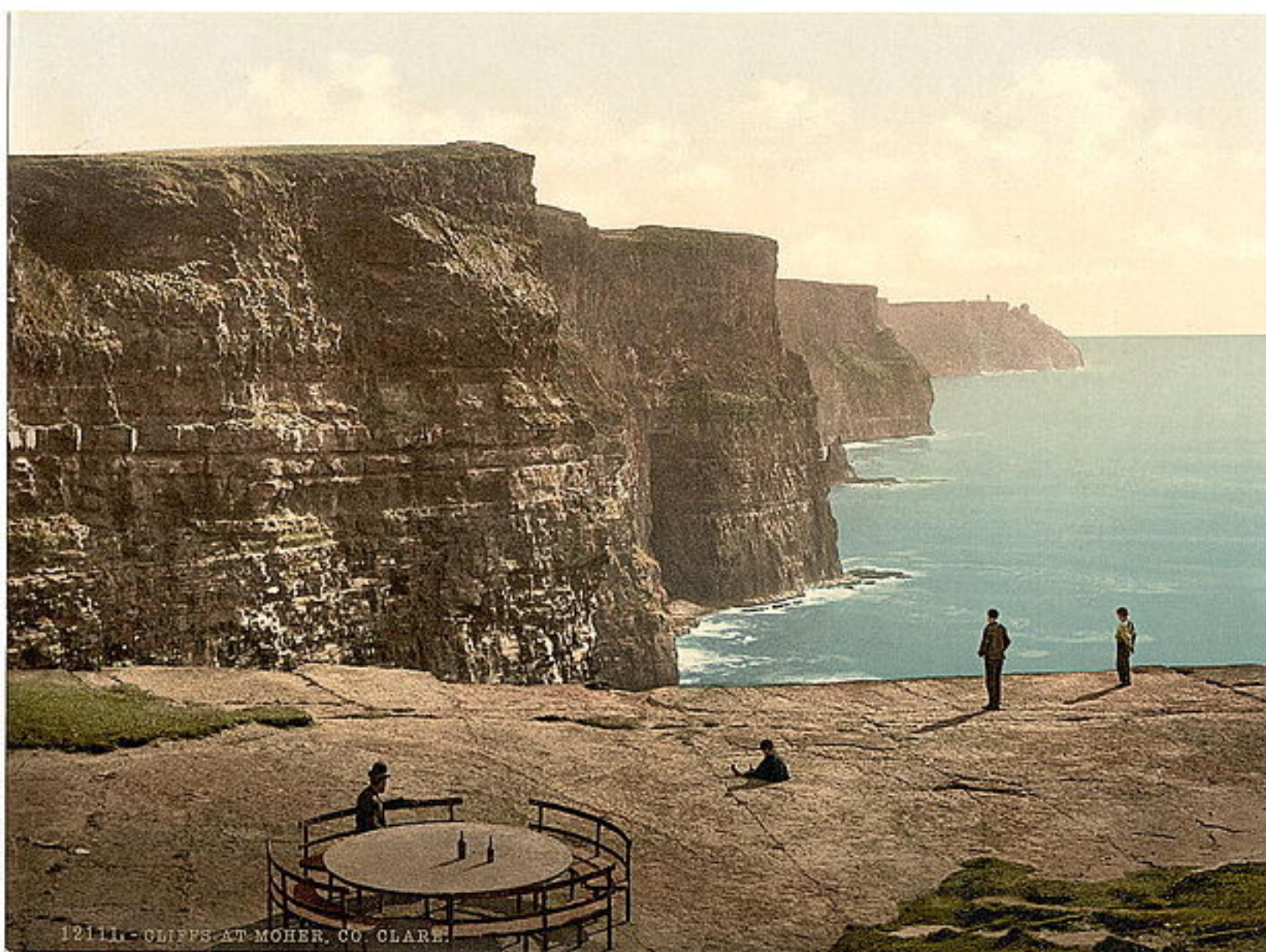
In the [original Bitcoin paper](https://bitcoin.org/bitcoin.pdf) (<https://bitcoin.org/bitcoin.pdf>), by "Satoshi Nakamoto," the author discusses blockchain as the main element of the digital currency. (The name blockchain derives from the fact that it is built on a literal chain of cryptographic hash values.) The first use of a publicly posted chain of hash values to certify the integrity of digital data was in the time-stamping work of Labs researcher [Stuart Haber](http://www.labs.hpe.com/people/stuart_haber/) ([http://www.labs.hpe.com/people/stuart\\_haber/](http://www.labs.hpe.com/people/stuart_haber/)). (Haber even has a [conference room in Estonia](/t5/Behind-the-scenes-Labs/Labs-Haber-honored-with-memorial-meeting-room-in-Estonia/ba-p/6849981#.V36CF_krKM8) ([/t5/Behind-the-scenes-Labs/Labs-Haber-honored-with-memorial-meeting-room-in-Estonia/ba-p/6849981#.V36CF\\_krKM8](/t5/Behind-the-scenes-Labs/Labs-Haber-honored-with-memorial-meeting-room-in-Estonia/ba-p/6849981#.V36CF_krKM8)) named after him for his contribution to the field.)

Haber is not the only Labs and HPE contributor to the blockchain discussion. Director of Security Research [Bill Horne](http://www.labs.hpe.com/people/william_horne/) ([http://www.labs.hpe.com/people/william\\_horne/](http://www.labs.hpe.com/people/william_horne/)) has investigated ways of using blockchain as an infrastructure component "which is ideally suited to establish the integrity of data and transactions through a distributed, consensus-based system."

[Terrence Spies](https://www.voltage.com/staff/terence-spies/) (<https://www.voltage.com/staff/terence-spies/>), of HPE's Data Security division, and Ian Brooks, HPE's European Head of Innovation, have spent months fielding inquiries from parties across industry and government. "The U.K. government, NATO, the DoD, and most financial services companies are asking for opinions and early stage discussions in this space," said Brooks.

The U.K.'s Chief Scientist, Sir Mark Walport, has released an 85-page report discussing the implications of blockchain's scalability and security. Additionally, NATO has issued a tech challenge aimed at the technology's military applications

Other HPE personnel with blockchain experience include HPE Services' Daniel Biondi and Ralph Beckmann.



### The view from here

"Where the public cloud was 10 years ago, that's where we are with blockchain," Brooks told us. "It has the potential to transform different industries, but for blockchain to be truly successful it has to have new forms of structure, ecosystems, and consortia that underpin it."

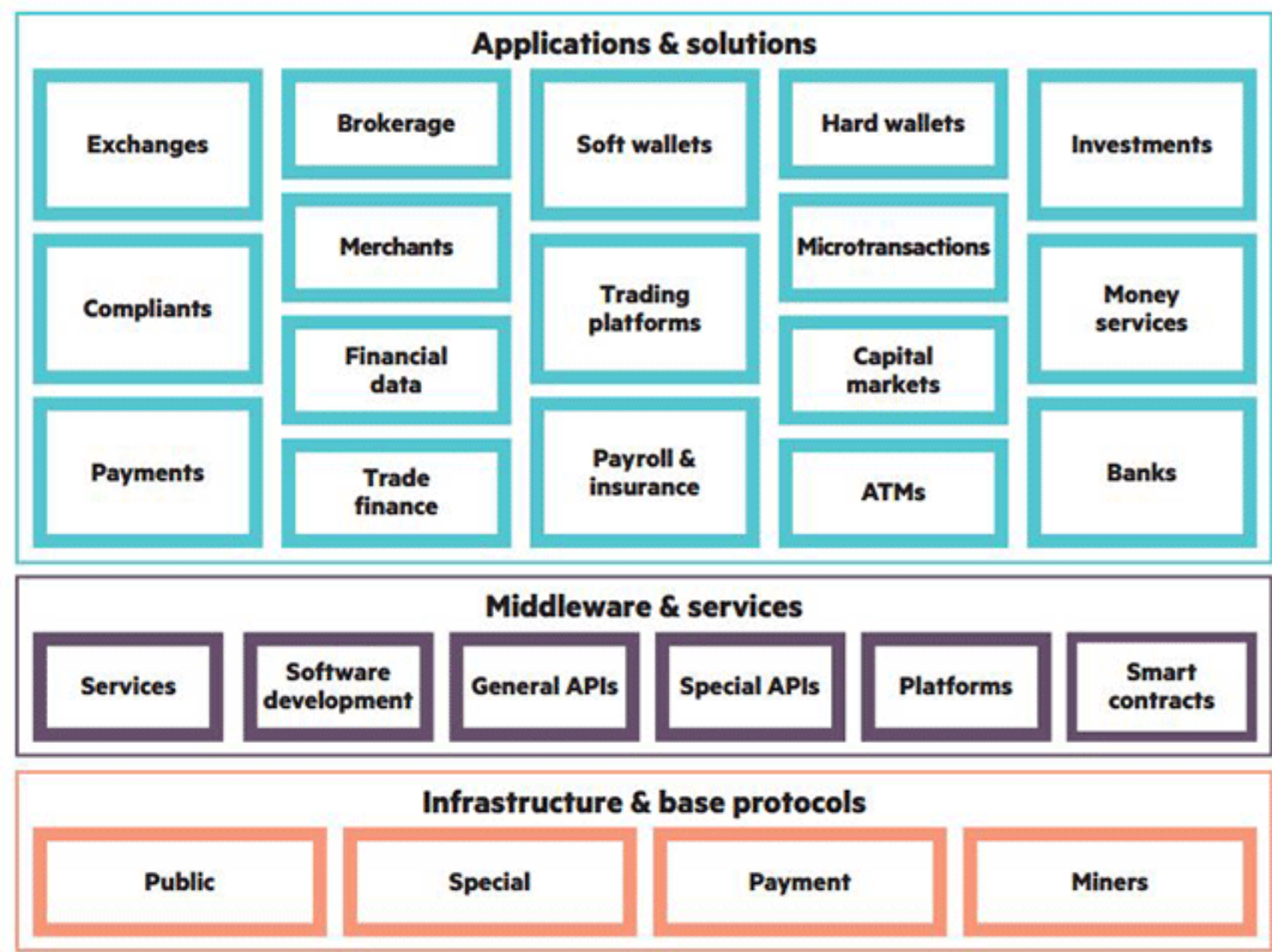
Brooks believes that banks, clearing houses, and regulators are going to have to agree to a set of rules by which they use blockchain, so the benefits can be realized. Microsoft is already offering blockchain as a service in some versions of Azure and Intel has set up a distributed ledger research group. To avoid a snarl of mutually exclusive blockchain initiatives, someone is going to have to do some math and agree to new rules.

There's an opportunity here for HPE, Brooks believes. Haber and Horne agree, though they are less sanguine about its widespread utility as a technology.



“What’s happened is this little piece of tech has come along that is potentially hugely creatively disruptive to the financial industry,” said Horne. “There is so much money involved – trillions – that it has created huge excitement and hype.”

According to Horne and Haber, blockchain is not a technology problem, it’s a business problem. The question thus becomes, “How can HPE help our customers navigate this potentially enormous technical disruptor?”



Five years

To help customers understand the implications, HPE has just released a financial services [Point of View \(POV\) paper on blockchain](https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA6-5864ENW.pdf) (<https://www.hpe.com/h20195/v2/GetPDF.aspx/4AA6-5864ENW.pdf>). It discusses why blockchain is important, who will it affect, and how will it disrupt the financial services industry. A second POV will address how other industries are likely to be affected and how HPE resources can help.

In the meantime, Haber is working on adapting to the blockchain context his earlier work for HPE on integrity of transaction histories, including “[A Content Integrity Service For Long-Term Digital Archives](http://library.hpecorp.net/techpubs/2006/HPL-2006-54.html) (<http://library.hpecorp.net/techpubs/2006/HPL-2006-54.html>).” Brooks, in concert with HPE Enterprise Services Chief Technologist Simon Arnell, is writing a white paper on enterprise digitization, blockchains, and risk.

This technology will affect many customers in many industry sectors. “We need a broad strategy,” said Brooks. “In the short term, we need consulting skills, but also partnerships, new solutions, and technologies.

Roll it forward five years and we could be in quite a different space. Imagine looking at the internet in 1985 and trying to predict what might happen. We are in that position again. It is a tricky thing to do, but a thrilling one as well.

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