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## Blockchain Buzz: Emerging Tech Offers Potential, Not Promises



*Businesses and governments worldwide are exploring blockchain technologies as they seek to improve transparency, increase productivity, and reduce costs.*

Blockchain is a data structure used to create a digital ledger shared among a distributed network of computers. It was initially designed for the peer-to-peer exchange of the virtual currency bitcoin. However, businesses are now developing and testing some potentially game-changing blockchain applications.

According to a recent survey of executives across a variety of industries, 29% said their companies already participate in a blockchain consortium to share knowledge and/or cooperate in the research and development of blockchain applications. Another 45% said they are likely to join one in the next year. Even so, 39% of these global business leaders believe blockchain is overhyped.<sup>1</sup>

Here's an introduction to blockchain and a glimpse into how this emerging technology might impact the future of businesses around the world.

### Control by consensus

Blockchain provides all network participants with simultaneous access to a single body of strongly encrypted data. Each individual (or node) can enter new data, but a majority of nodes on the network must verify the addition before it becomes part of the permanent record. Each transaction is time stamped and linked to the prior transaction, forming a series of blocks in a digital chain. This creates an audit trail each time data is changed, helping to ensure the integrity and authenticity of the information. Because no third-party intermediary (or central authority) is needed, transactions can be completed instantaneously and at a lower cost.

### Realm of possibility

A blockchain can be public (open) or private (closed). Any system or business that relies on a database could be a candidate for blockchain-based innovation. A blockchain can also be coded to execute or enforce smart contracts automatically (without an intermediary) when certain conditions are met.

Here are a few examples of applications that are already in the pipeline.

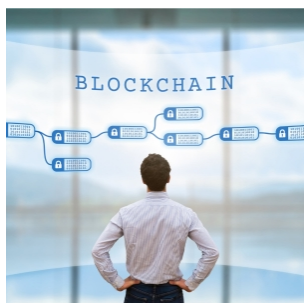
**Financial markets.** The financial industry is identifying ways in which the technology could be used to protect sensitive data, increase speed, and cut costs for electronic payments, securities trading, and lending. Since 2015, more than 100 financial institutions, trade associations, regulators, and technology partners have joined forces to set up and test a blockchain that could one day become an industry-wide platform.<sup>2</sup>

**Supply chains.** Each link in a company's supply chain could be held accountable by tracing products from origin to store, discouraging tampering and fraud. This could enhance food safety, reduce the costs associated with recalls, and help retailers verify authenticity. For example, customers could be assured that their food was raised on an organic farm or that a specific diamond did not come from a conflict zone.<sup>3</sup>

**Medical records.** Blockchain systems are being designed to store health data that can be conveniently shared among patients, doctors, hospitals, and insurers while protecting patient privacy.<sup>4</sup>

**Digital rights.** Musicians, photographers, artists, and media businesses could more easily monetize, track, and control the use of their creations, which could reduce piracy.<sup>5</sup>

Some other possible uses include public real estate registries, identity verification, law-enforcement activities, digital voting platforms, and securing Internet-connected devices, among others.



## Work in progress

Businesses and governments worldwide are exploring blockchain technologies as they seek to improve transparency, increase productivity, and reduce costs. As a result, investment in blockchain initiatives could approach an estimated \$700 million in 2018.<sup>6</sup> Numerous industry consortia are working together on business solutions for their shared interests, while some individual companies are racing to influence what might become common industry standards.<sup>7</sup>

Despite the heightened levels of interest and investment in blockchain, deployments are still fairly rare, and widespread adoption could be years away. In one 2018 survey, only 1% of chief information officers (CIOs) indicated that their organizations have already invested in and deployed blockchain applications. Only 8% of CIOs are in active experimentation or short-term planning, and another 14% are in medium- or long-term planning stages. The bulk of surveyed CIOs (77%) either have no interest in blockchain or no plans to investigate or develop the technology.<sup>8</sup>

Some factors slowing the pace of adoption are governance issues, a lack of regulatory frameworks, and a shortage of professionals with blockchain skills.<sup>9</sup>

In the longer term, however, blockchain could be a transformative and/or disruptive force that creates a new set of winners and losers. Speedy and successful implementation may deliver a competitive advantage to some companies while punishing others that don't keep up with the pace of change. There may also be some societal costs, such as high energy consumption from running millions of powerful computers, and the technology's potential to displace a large number of human workers.

## Word of warning

As an investor, you should keep in mind that new technology ventures are often risky. Some blockchain projects may turn out to be viable and profitable, but many others could fail. Bad actors are also trying to capitalize on the blockchain buzz by luring investors into highly speculative investments and some outright scams.<sup>10</sup>

Thus, you should be wary of a company's claims regarding blockchain — especially if an investment offer is unsolicited and Internet-based — and never wire money to pay for such an offer.

*All investing involves risk, including the possible loss of principal.*

1, 5, 7, 9) Deloitte's 2018 Global Blockchain Survey

2) Reuters, October 3, 2017

3) *The Wall Street Journal*, March 11, 2018

4) *The Wall Street Journal*, May 28, 2018

6) Bloomberg.com, July 31, 2018

8) Gartner, 2018

10) FINRA, 2018

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