

More than a decade has passed since the technology was founded, but as Business Continuity and Resilience professionals are finding out, it could pay off in the long-term to invest

*SPECIAL REPORT*

# BETTING ON BLOCKCHAIN

BY SUE WEEKES



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ata underpins every business function – so a technology that claims to be able to store and distribute data safely and securely, as well as verify and authenticate it, has to be on the radar of every Business Continuity and Resilience (BC/R) professional.

While experts say most current blockchain projects in the field of BC/R are said to be in a “proof of concept” or “experimental” phase, with the primary focus on efficiency, they also say that resiliency is emerging as a “side benefit” of this technology.

“Blockchains, like social media, need the network effect; the more people who use them, the more valuable they become. As they mature, I believe that we will see a greater realisation and use of blockchain as part of organizations’ resiliency strategy,” says Darren Wray, CEO of consultancy FifthStep, with offices in London,

New York and Bermuda, whose specialist areas include cyber security, governance and compliance.

Put simply, blockchain is a database, but its inherent characteristics mark it out from our traditional understanding of databases (See box p23). For a start, blockchain doesn’t reside in one place but is rather a distributed database run by a peer-to-peer network that could, for example, represent everyone involved in a supply chain. Its main unique selling point is that this decentralisation means that anything held on the blockchain cannot be altered without consensus of the network.

Blockchain was originally developed in 2008 by Satoshi Nakamoto as a public ledger for the cryptocurrency Bitcoin. Recent years have seen it build momentum outside of the cryptocurrency and fintech world, and now BC professionals have to consider getting the right blockchain in place for successful implementation in the long-term.

“All [different blockchain programmes] have some specific characteristics that make them more suitable for certain transactions than others,” explains Peter Snoeckx, Senior Project Manager and Consultant at Belgium-based IT, innovation and strategy consulting firm Quovis, warning that he foresees a shakeout in the coming years. “Some technologies will become the leaders. A Business Continuity risk is hence that when you start a blockchain project now, you have to ‘bet’ on the right technology so that this still exists in another five or 10 years.”



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**59%** BELIEVE BLOCKCHAIN WILL DISRUPT THEIR INDUSTRY  
(Deloitte 2018 Global Blockchain Survey)

### HOW DOES BLOCKCHAIN WORK?

Each blockchain is made up of ‘blocks’ of data that are linked together and run by a peer-to-peer network. Its immutability comes from each block having inherent characteristics. These include a cryptographic hash of the previous block, a timestamp and transaction data. Blocks cannot be added or altered retrospectively without the consensus of the network. If anyone tries to change a block without consensus the hash and timestamp will change and expose the tampering.

“It is basically an immutable ledger of transactional data. So, whatever happens to your systems, you can always recover the data stored in the blockchain provided you have the keys. You can also use the blockchain as a proof that certain electronic documents are indeed the authentic ones, thus preventing fraud.”

As Snoeckx points out, with blockchain it is often hard to distinguish between the marketing buzz and reality. He describes most of the

projects in the field of BC/R as being in a ‘proof of concept’ phase and those that are live are at a small scale.

FifthStep’s Wray explains that it is unlikely that blockchain will become the primary way for

an organization to back up its data because it currently isn’t designed to hold large amounts. However, it can be extremely valuable as a back-up for an organization’s transactional data and asset register, storing details of, for example, its property, vehicles, investments and physical assets.

“Such internal blockchains would provide an immutable record of all the movements and changes, providing a far greater level of resiliency than is possible with a traditional database approach,” Wray says. “The volumes of data typically stored in a blockchain are unlikely to contain a company’s full data compliment, but recovery from blockchain should certainly be part of an organization’s Business Continuity and recovery planning.”

Blockchains also offer significant benefits in terms of risk mitigation. “They are less susceptible to hacking than many extant solutions,” explains Dr Windsor Holden, Head of Forecasting and Consultancy at analyst Juniper Research, whose Blockchain Enterprise Survey found that three-fifths (57%) of large corporations were either actively considering, or are in the

process of deploying blockchain. He adds: “The combination of transparency and smart contract capabilities can reduce time spent on contractual disputes. And a decentralised model, with no single point of failure, can also reduce the risk of business disruption.”

In terms of building in more Resilience to business-critical systems, blockchain would seem to promise a great deal – but it is important to understand its strengths and limitations. Like any emerging technology, it shouldn't be seen as a cure-all and its use must be properly assessed for economic and technical feasibility.

Blockchain was originally developed for peer-to-peer transactions, negating the need for a bank and so is typically used to remove an intermediary. “But you have to ask, how important is that intermediary?” says Tayo Dada, CEO and Founder of Uncloak.io, a next-generation cyber security company that uses blockchain. “It is sometimes important to have that middleman to ensure compliance, for example.”

Organizations should also ask how many users need to see or verify the data. “If it is only two or three, using blockchain is probably overkill,” Dada says. “And how important is it for people not to be able to change the information? These are some of the questions that make up the acid test for whether to use blockchain.”

“If a BC professional has created a set of processes for what to do in the event of a failover, the integrity of them is really important. If they are altered, this could cause issues so you could have a blockchain that supports these documents and ensure they cannot be changed.”

Blockchains could have a key part to play in making supply chains

## LAYING DOWN THE LAW

Liechtenstein, a tiny principality located between Austria and Switzerland, has drafted legislation for a Blockchain Act to “strengthen the legal certainty for users and service providers”, according to professional services firm PwC. Published in August 2018, the Act and Liechtenstein's geopolitical position are predicted to make the German-speaking country “a leading light for blockchain regulation”, says website CryptoBriefing. Liechtenstein is not a member of the European Union, but is part of the European Economic Area. Passage of the Act is anticipated in Q1 this year.

more robust and secure in the future, given the number of people involved in them and the importance of data integrity and compliance. Last year, shipping company Maersk and IBM formed a joint venture to provide more efficient and secure methods for conducting global trade using blockchain. It addresses the need for greater transparency and simplicity in the movement of goods across borders and trading zones.

The companies said a new form of “command and consent” could be introduced into the flow of information and it would allow multiple trading partners to collaborate and establish a single shared view of a transaction without compromising details, privacy or confidentiality.

If considering the use of blockchain, a number of issues must be considered, not least how it throws up a major challenge in the area of Europe's General Data Protection Regulation (GDPR), simply because data cannot be deleted. Snoeckx explains that this can be surmounted by storing each data element on the blockchain with its own key, but he adds: “However, you need a place to store those keys and then that

# 33m

## AT THE LATEST COUNT IN FEBRUARY 2019, MORE THAN 33M PEOPLE WERE REGISTERED AS BLOCKCHAIN WALLET USERS

place might become vulnerable for hacking or cryptolocking.”

In addition to complying with an individual's ‘right to be forgotten’ in GDPR, Holden stresses the importance of

data accuracy. “While the data uploaded to the blockchain cannot be tampered with, there will still be the issue of ensuring that the correct data is uploaded in the first instance.”

Then there's the issue of password management. Snoeckx warns that if an individual forgets the key to decrypt the information, it is lost, and gives the chilling example of the Canadian cryptocurrency exchange whose founder and only password holder died unexpectedly. *The Huffington Post* reported Vancouver-based Quadriga was seeking creditor protection in the wake of the sudden death of its Founder and CEO Gerald Cotten in December, which has left cryptocurrency worth roughly \$190m (£145.3m) in limbo.

The latest estimates are that the blockchain market will experience a compound annual growth rate of almost three-quarters between 2018, making it worth around \$28bn (£21.7bn) by 2025, according to analyst Meticalous Research.

Recent years has seen a proliferation in the number of different blockchains available. They fall into two categories: public and private. The former can be viewed by the public while

### BLOCKCHAIN

## THREE EXAMPLES OF BLOCKCHAIN IN ACTION

1

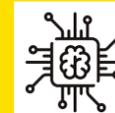


### Dubai: the first block-powered government?

In collaboration with IBM, Smart Dubai is aiming to run all applicable government transactions on

blockchain. A settlement and reconciliation system was one of the first projects to go live on its Dubai Blockchain Platform and has reduced the 45 days previously taken to reconcile and settle payments with other government agencies and banks and financial institutions to real-time. Aligned with its drive to be blockchain-powered, the Dubai government is also aiming to go paperless. The platform will also serve as a stepping stone for organizations in the United Arab Emirates and globally to move their blockchain testing and development into full production.

2



### A city in Nevada built on blockchain

The US state of Nevada will host the first entire city built on blockchain. The technology will provide the underlying

infrastructure for all interactions on Innovation Park, which occupies 67,000 acres in northern Nevada, featuring a high-tech park, developer campus and a residential area. Projects will focus on combining blockchain and artificial intelligence technology as well as explore 3D printing and nano-technology. It is the vision of lawyer and cryptocurrency millionaire Jeffrey Berns, CEO of Blockchains LLC, which is recruiting a number of partners to work on projects. The first of these is energy firm NV Energy. The two sides have a shared vision to use blockchain to place the customer in control of energy creation, consumption, storage and transactions.

3



### Driving sustainability in South Korea

Energy is one of the sectors blockchain has gained traction in. The blockchain-based Swytch

platform, which tracks, verifies and rewards those reducing the global carbon footprint, is being used in Chuncheon, South Korea to accelerate the consumption of renewable energy and drive economic and environmental sustainability. The deal will see participating organizations jointly pursue sustainable alternatives to traditional energy sources through the development and adoption of solar energy and implementation of the Swytch network. Several other cities in South Korea have already developed partnerships with Swytch and it is under discussion regarding agreements with cities and organizations in Asia, Europe and the Caribbean.

# 69%

## OF ORGANIZATIONS ARE PLANNING TO REPLACE TRADITIONAL RECORD SYSTEMS WITH BLOCKCHAIN

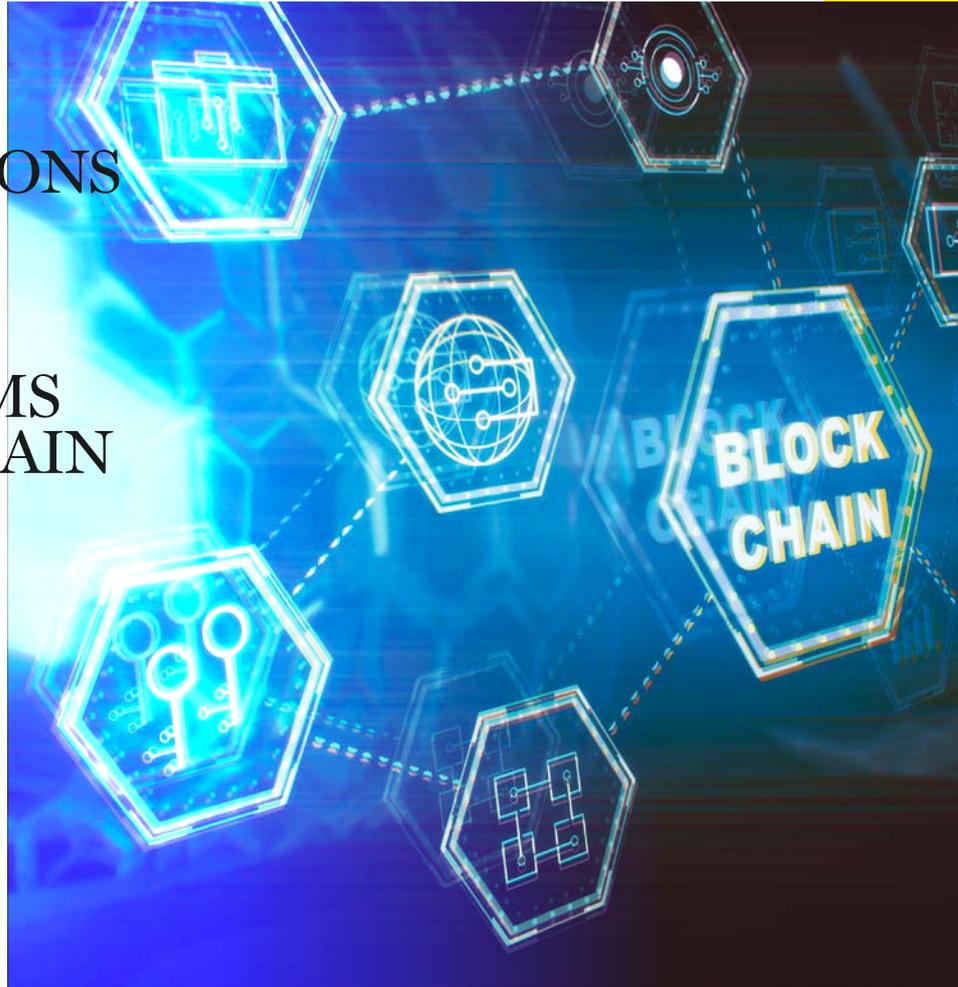
(Deloitte 2018 Global Blockchain Survey)

the latter can only be used by those with permission. “Private, permissioned chains allow different permissions to be given to different parties, making them far more attractive for most businesses,” explains Holden. “These chains are highly secure, highly flexible and scalable; they allow a level of trust across a group that may not trust each other’s members.”

Among the most popular blockchains are: Ethereum, created by a worldwide team of developers; EOS.IO, which claims to be one of the fastest protocols on the market; and Hyperledger, another global collaboration hosted by the Linux Foundation, but there are hundreds competing for dominance.

Given the current hype surrounding blockchain, it might seem absurd to say that in 10 years’ time many people won’t have ever heard of the word. But while there is little doubt that blockchain will become a key enabling technology of the digital age, a time will come when it is not necessary to understand what it is or how it works as it will sit as a trusted underpinning layer of our digital infrastructure.

“Technology is adopted when people don’t talk about it anymore and when it becomes part of life,” says Dada. “Blockchain will become a verification standard. For example, if you have a country or a government that is able to say ‘We use a blockchain system for voting’, people will know the integrity will be there and it can’t be falsified.”



**“While the [GDPR] data uploaded to the blockchain cannot be tampered with, there will still be the issue of ensuring that the correct data is uploaded in the first instance”**

Dr Windsor Holden, Head of Forecasting and Consultancy, Juniper Research