

# A ledger in the making

James Cotton explains blockchain, the factors driving its increasing use and its potential benefits for financial accountants.

## TEN SECOND SUMMARY

- 1 Blockchain provides trust for digital transactions between different parties enabling it to be "the internet of money".
- 2 Blockchain provides a cryptographically-secured, tamper-proof ledger that is stored across a peer-to-peer network of computers.
- 3 Accountants who understand blockchain's applications and benefits are more likely to be able to help clients to understand its implications and use the technology.

Assessing the potential impact of blockchain on the financial services sector, technology industry analyst Gartner wrote: "Bitcoin is a form of digital currency and blockchain is the colloquial name for the distributed ledger technology that underpins it, providing a trusted, immutable record of transactions."

The blockchain ledger is described as being "distributed" because a shared, uniquely identified and immutable data record is maintained by a network of computers on the internet. A blockchain allows a historical sequence of transactions to be recorded, block by block, and stored on numerous computers.

Each "block" is chained to the previous one in a sequence that is recorded across the network. The unique identifier is applied to each transaction, using cryptography to prevent data from being modified. Because the record is

archived in this way, the ledger is viewed as being tamper proof.

### Trust is the magic word

Blockchain offers an important layer of trust for digital transactions. This trust element allows value to be transferred between different parties and blockchain is often referred to as "the internet of money". Because of the way that transactions are immutably recorded across a peer-to-peer network, blockchain offers the potential to replace traditional intermediaries, such as banks and legal service providers.

Gartner believes that "blockchain offers a potential new era in financial services. With its global-scale, technology-driven business transformation."

### Who is driving blockchain development?

In the hope of simplifying costly record-keeping processes and increasing trust in transactions, banks and enterprises have already invested millions in developing blockchain technology. To accelerate its development, large organisations have joined forces and a number of consortia have formed, including R3, the Enterprise Ethereum Alliance and the Hyperledger Consortium.

Last year Information Builders joined the Hyperledger Consortium because we see huge potential in blockchain for ensuring data trust and information transparency.

### Set in stone

When information is stored on a blockchain, it is there for eternity. Therefore, there is an incentive to ensure that information is correct at the outset.



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For example, if an initial blockchain entry recorded that Company A transferred goods worth £600 to Company B and it was later noted that the payment was only £500 because Company B had forgotten to add VAT, the subsequent blockchain entry would need to note that Company A's assets were -£100. However, the initial mistake would remain on record for ever. We can see that it is, therefore, important to ensure quality and reliability of data before it is added to the blockchain.

### Linking to the chain

While blockchain is in its infancy, it needs to be able to integrate with existing systems, such as Sage and NetSuite to allow accountants to compare blockchain transaction data with other sources of information.

For example, in future, when reporting on the depreciation of a company asset such as a BMW 1 Series car, accountants might use blockchain data to confirm that it was purchased by a company on 31 August 2015, that it has a full service history, and that it has been driven 23,000 miles. However, they might also need to check other data, such as telemetry systems, to find out the condition and true value of that company asset.

Rather like the evolution of VHS and Betamax video tapes, different consortia are developing different standards, so efficient technology needs to support all standards. It is essential that the focus here is on data quality and ensuring that a broad range of databases, applications, and computing platforms can be integrated into blockchain applications.

It must be possible to introduce application protocol interfaces (APIs) and transactions into the blockchain ledger and thus enable information from the ledger to be retrieved and queried. A data quality and data mastering suite must eliminate duplications and redundancy in any data set, to avoid missing or incomplete data being incorporated into blockchain applications.

Once blockchain data has been integrated into existing enterprise applications, this can then be analysed, trends visualised, and reports distributed to users, which will include all internal and external participants of the blockchain ledger.

### Blockchain applications in accountancy

Trust, transparency, security and accountability are the foundations of blockchain technology. As blockchain provides a cryptographically-secured, tamper-proof ledger that is stored across a peer-to-peer network of computers, information stored in the blockchain is non-repudiable. These features lend themselves to a number of applications within accountancy including the creation of audit trails for governance and compliance; combatting fraud; and prevention of money laundering.

Blockchain makes it crystal clear where value originated and when, how, and to whom it was transferred.

Efficient payment processes can be set up using blockchain technology, including loan origination, clearing and settlement. Trading transactions can be securely and permanently recorded and audited, creating trust between multiple participants.

For accountants representing manufacturing and logistics organisations, the blockchain enables shipment tracking, creation of bills of lading, and exchange of shipping instructions with different partners within the supply chain and transfers of ownership of goods.

For accountants working with real estate and property management clients, the blockchain's public ledger provides irrefutable evidence of exchange of contracts and transfer of property. The blockchain could also include digital records of clauses detailing when ownership would revert to the lender in the event of default on payments. This could spell the end of traditional tasks carried out by notaries, whose role is to prevent fraud by witnessing the signing of documents.

### Reality check

While banks, insurance companies and telecoms providers have been the first to experiment with blockchain, it will take time before industry standards are established and the technology has sufficiently matured to be applied within financial accountancy practices.

Last year, Gartner surveyed 3,160 chief information officers (CIOs) from 98 countries working in enterprises across a range of sectors. Only 8% reported that their organisations were experimenting with blockchain and just 1% were actually implementing the technology. Of the remainder, 14% reported that blockchain was included in their medium or long-term planning and 43% stated that it was "on the radar", but there were no firm plans to experiment with, or apply blockchain. Just over a third (34%) reported that they had no interest in the technology.

That said, blockchain mirrors many familiar accountancy processes. It is concerned with the transfer of ownership of assets and value and offers similar benefits of creating a trusted audit trail that verifies value that has been created and transferred between companies and individuals. Regulatory compliance is likely to increase in line with data creation and consumption and blockchain has clear applications in the creation of indelible audit trails.

Blockchain offers the potential to speed up and simplify traditionally expensive, painstaking processes, such as the transfer of property ownership, goodwill or digital assets, which add cost and complexity for financial accountants' clients.

Accountants who take a professional interest in understanding blockchain's applications and benefits are more likely to be able to help clients to understand its implications and to avail themselves of the technology once it becomes more broadly applicable to their clients' businesses.

### FURTHER INFORMATION

Information Builders is a privately-owned company that provides a software platform for business intelligence, analytics, data integration, and data quality. Its software helps enterprises to manage and analyse operational data to derive insights that drive actions that save costs and generate revenue.

Information Builders is part of the Hyperledger Consortium, a consortium of about 180 companies formed to collaborate on developing blockchain technology for businesses. It released its first enterprise-grade blockchain ledger this year. Visit: [www.informationbuilders.com](http://www.informationbuilders.com) Twitter: @infobldrs Facebook: [tinyurl.com/InfoBuild](https://www.facebook.com/InfoBuild) LinkedIn: [tinyurl.com/LnkdInfoBuild](https://www.linkedin.com/company/InfoBuild)