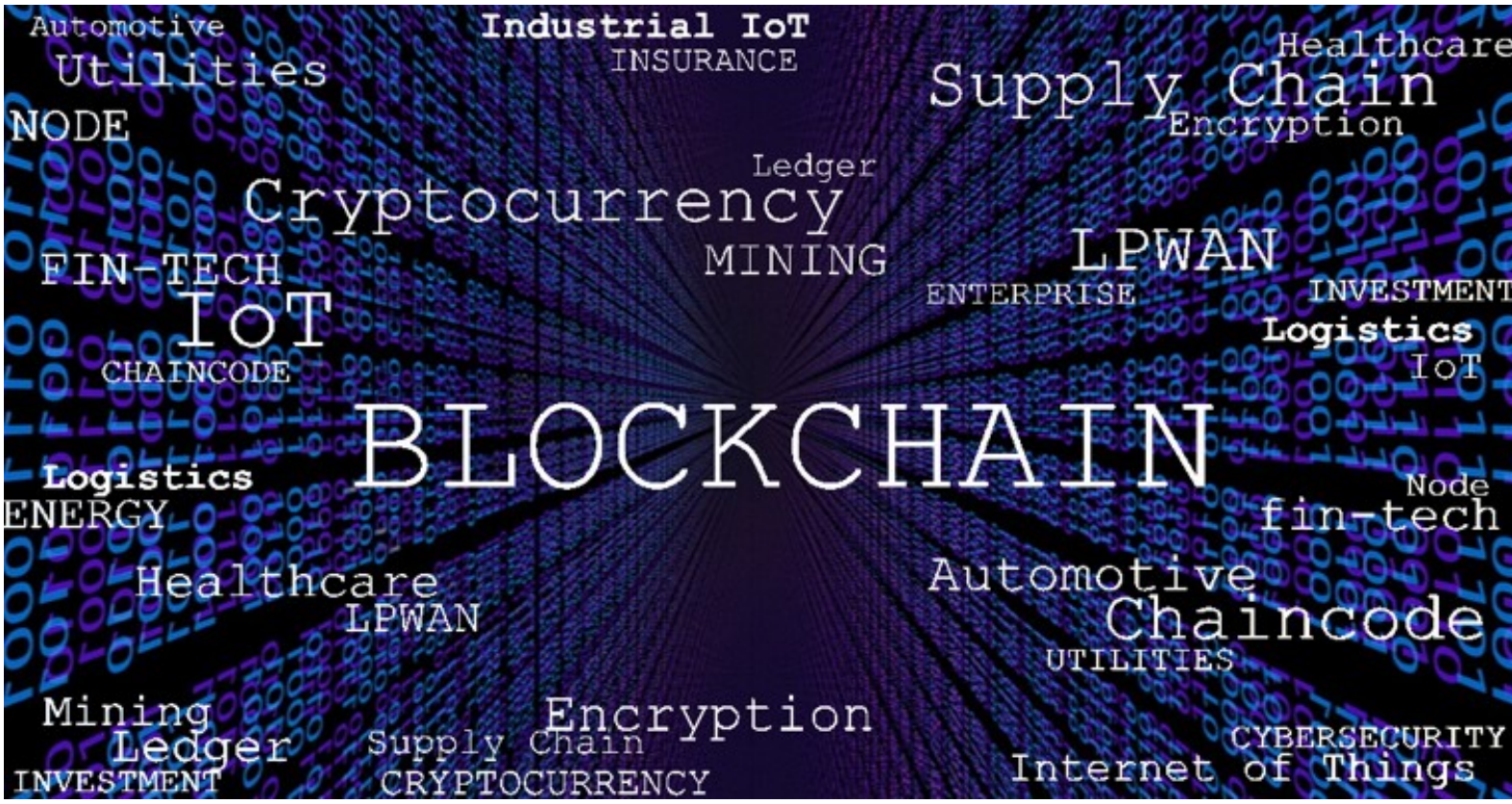
Riot: tracking disruptive technology and its impact in industry

Is Blockchain right for your business? And when will it be ready?



Executive Summary Only

Riot: Enterprise Blockchain **March 2018**

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1). Introduction

There's no escaping it - 'blockchain' is a buzzword that has been seized on by all manner of hypebeasts. Drawing considerable interest because of its close association with bitcoin and other cryptocurrencies, many investors have funded companies that are looking to harness the incredible potential of the technology – which could be deployed in all manner of verticals. For the IoT, itself a distributed system, blockchain technology could have a completely transformative impact on these emerging businesses and markets.

The two sectors that have most clearly established themselves as early adopters are the Logistics and Utility markets. Riot will publish a separate report on the Utility Blockchain market later this year, and this report will help lay the foundation for some of that later discussion. In addition to the Logistics market, there are early signs that the Automotive industry sees the potential for the ledger technology, as a way to manage the vast range of third-party support and services, and for handling distributed machine-learning – to provide better customer clarity and assurance.

The technology itself is simple to explain, at a very basic level. The core of the system is the ledger, a public list of all the transactions that have been made between parties (who are identified by their wallet addresses, akin to bank account numbers). The ledger is essentially comprised of 'blocks' of transactions that are collectively processed by a distributed mesh of computers, that are all working to verify and then upload the next block of transaction – forming a 'chain' of 'blocks' that can all be traced all the way back to the start, after all nodes have reached agreement on what they should contain.'

The mass of computers that are working to verify all those transactions, achieving 'consensus' in the network, are being incentivized by payouts – usually in the form of currency, in those cryptocurrency deployments, after 'mining' the coins by means of crunching some very complex mathematics, to reach a consensus. This is to ensure that there are sufficient processing resources to keep the ledger updated at a reasonable interval, but a private blockchain-based system wouldn't have to incentivize people in that same fashion, as it can pay for the compute resources itself.

Because of this distributed structure, and the complex mathematics and encryption involved, it is near-to-impossible for someone to fraudulently alter the chain – hence the use of the term 'immutable.' Each node would be using a private encryption key to sign its transactions, which should mean that no one could intercept or alter what it is signing to the chain. To date, there has not been a successful demonstration of such an attack on the chain's integrity. In theory, a chain gets more secure as more processing nodes are added to it – although some recent studies have pointed out that bitcoin is far from distributed these days, with the top mining pools accounting for the vast majority of the total mining capability.

Potential Scope

As such, a distributed architecture (in theory) seems like an ideal system for ensuring trust between multiple third-parties, where any one user could examine transactions to see that a delivery had been made on time, or that they were being paid a fair price for their goods or services.

In utility deployments, it could prove the key for driving Distributed Energy Resources (DERs), such as rooftop solar, as the system could provide the platform for commerce between people, neighbors, and their utility.

In addition, the newer 'Smart Contracts' that are based on the Ethereum blockchain technology could enable new levels of automation in certain applications, particularly those involving supply chains and manufacturing – with the contracts paying out once items are delivered or accepted, or even issuing new purchase orders for replenishment tasks.

Logistics companies would be able to track their shipments through depots and warehouses, with airlines and docks checking the items into the chain as they progress. This information could be shared with the logistics company's customers in near real-time too.

Blockchain-based systems could become foundational to all commerce. Of course, they've collectively got a huge hill to climb before they start taking chunks out of the incumbents' market share, but they have features that could become standard-practice in supply chains, financial and insurance markets, or global manufacturing processes.

However, Riot has previously warned that the investment community was far too ready to throw cash at blockchain startups. There are plenty of tools available today that could be used in many of the applications that these startups hope to wade into, and when it comes to high-value business tasks, there's a lot to be said for the clout that an entrenched vendor like IBM or Oracle can throw around in the sales pitch. If you're a conservative buyer, why opt for a bleeding-edge blockchain, when an off-the-shelf database solution would suffice?

Similarly, the strength of a blockchain is really found in the distributed architecture, but if an enterprise is deploying an entirely internal application, then the distributed system (designed to ensure trust) is rather redundant – as the enterprise should be able to trust its inputs. For the third-party environments, complete trust in the ledger is imperative, otherwise the whole thing falls apart.

Other concerns have been raised with the long-term viability of the bitcoin-based blockchain approach, as current estimates put its distributed power consumption above that of many countries. Numerous thefts have also continued bitcoin's PR troubles, and the staggering transaction fees that the bitcoin community was burdened for a time mean that it

Who Should Buy This Report?

The simple answer is anyone working in strategy in the IoT marketplace would benefit from this report, but also anyone working in food retailing, financial services or logistics and supply chain, whether you are in the core lines of business or in the IT side of the business or a technology supplier.

This 30-page report gives real world examples of multiple Blockchain "proof of concept" installations throughout the IoT marketplace, and reports on their level of success.

These concrete examples have led to improvements in stock markets, automobile log-books, supply chain management, financial services, ocean freight and ports, health management, quality tracking in retail, paperless trade, asset ledgers, food waste reduction, clinical trials and storing genome data, to name but a few, as well as one system used to combat food poisoning.

Quietly Blockchain is changing the way the world thinks about ledgers – taking them from private, concealed ledgers which only a handful of people in one company can interrogate, into a public shared record, which puts can afford to put openness first, simply because of its immutable and tamper-proof nature.

In the future blockchain ledgers may well replace credit card accounting, manufacturing control systems, as ell as cyber security and security audits and will go on to form the basis for data marketplaces – in the IoT world, data marts are the cheapest way to give companies access to large databases of sensor data around large projects like Smart Cities, on a usage basis.

This report will bring you examples of how Blockchain can change the economics of your business, and when by, and help ensure you do not miss out on this dramatic revolution in how data is held.

This report costs $1,625 for a five-user license, but since the entire Riot service costs only $1,625 we'd much rather you enjoyed all 12 monthly reports and the weekly service the entire year-round. Go here to see purchase options

For more information, such as individual or corporate subscriptions and consulting enquiries email John Constant john@rethinkresearch.biz or call him on 01794 51411 go to www.rethinkresearch.biz.

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Rethink Technology Research Ltd,
Unit G5, Bristol & Exeter House, Lower Station Approach,
Temple Meads, Bristol, BS1 6QS
Tel: +44 (0) 117 925 7019
Website: www.rethinkresearch.biz

Riot's main contributors

Editor and Senior Analyst: Alex Davies alex@rethinkresearch.biz
Analyst: Philip Hunter

Rethink leadership

CEO: Peter White peter@rethinkresearch.biz
Research Director: Caroline Gabriel caroline@rethinkresearch.biz

About Rethink

Rethink is a thought leader in quadruple play and emerging wireless and IoT technologies. It offers consulting, advisory services, research papers, plus three weekly research services; **Wireless Watch** which has become a major influence among leading wireless operators and equipment makers and **Faultline**, which tracks disruption in the video ecosystem, which has become required reading for anyone operating in and around quad and triple play services and digital media. **Riot** is Rethink's latest research service.

Sales contact details

John Constant +44 (0)1794 521 411
Email: john@rethinkresearch.biz