

# The Blockchain, Boardrooms & Better Business

Guy Shone,  
Independent Analyst, Explain the Market

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## The Blockchain, Boardrooms & Better Business Partnerships

As an economist and analyst I have, in the past, spent more time working with CFO's and CEO's than IT leaders.

Times have changed.

The nature and scale of global economic change today means the concerns of the entire 'C Suite' are converging at pace. IT infrastructure and economic infrastructure have long been interrelated but we are now not far away from them meaning the same thing.

After the World Economic Forum in Davos 2016, Reuters TV invited me to broadcast on the topic of 'the fourth industrial revolution'. Many of the key trends covered then continue to play out today – an explosion in data, on-demand expectations of powerful millennial customers, and China's new relationship with the world.

But since Davos, a bigger bolder economic headline has been surfacing. The emergence of the blockchain is set to change not just the way the world does business but also the fundamental point of doing business at all.

A distributed ledger, conceptually incorruptible; a chance for all citizens of earth to own their own data; a chance to make corporate trust undisputable and a method for naturally rebalancing the value chain without stripping away value. As a business community, we are firmly back in the 'change the world' zone – and crucially practical things are happening now.

To understand what is possible for business over the next 10 years and beyond, it has become more essential than ever to understand new advances in technology infrastructure.

Here are some reflections about how all "C" level leaders can help each other win.

## Blockchain and the thinking it promotes can revolutionize governance

Global trade fraud costs the global economy over \$600 billion. The governments of many countries have spent billions strengthening anti-corruption legislation, but the battle remains an indefatigable and expensive one. A 2013 study by Ernst & Young revealed that nearly half of workers across Europe, the Middle East, Africa and India think bribery and corruption are acceptable ways to survive an economic downturn.<sup>1</sup>

While there remains no international anti-corruption law, the UK's Bribery Act 2010 and the USA's Foreign and Corrupt Practices Act have played an intrinsic part in tackling the issue of bribery and corruption on a global basis, across businesses and sectors. However, in 2015 the anti-corruption group Transparency International surveyed over 40,000 people across 28 countries in Sub-Saharan Africa – finding that one in five Africans claim to be affected by corruption.

The prospect for economic and societal benefit here is huge. The potential is for blockchain, and in particular incontestable smart contracts, to inject transparency and indisputability into a vast swathe of business relationships. In so doing, organisations would be able to increase in rigour and simultaneously secure rights for the smallest parties.

## Customers and businesses expect more responsive and authentic relationships

Smartphone ownership continues to grow the world over. Mobile adoption in Africa has doubled in the last 2 years alone. The world is increasingly connected and demanding to do more with their devices. In 10 years it might seem odd to think about people wandering through shopping malls gazing at smartphones.

Devices as we know them today may become usurped by 'things' already integrated neatly into our lives. By 2020 more than 20 billion other 'things' like cars, clothes and sensors will be connected to the internet. Systems it seems are increasingly synchronising with the infrastructure of people's

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[1] [Growing Beyond a Place for Integrity](#), 12th Global Fraud Survey by Ernst & Young

real lives - rather than forcing customers to fit in with technology.

Video and social media is increasingly dominating how corporate content is created. Almost four times as many consumers claim to prefer video content over text when it comes to social media messaging. Marketers are picking up on the trend as well, with 69% saying their budget on video content is 'increasing' or 'significantly increasing.' Despite this, over 70% of companies are still not collecting data from social media channels. Responding quickly to this demand places huge importance on supporting infrastructure - a shift not just in terms of scale but critically in terms of what assets need to be stored and processed. Compression and storage solutions need to be responsive - but success is as much about 'customer first' thinking and smart planning as the technology itself.

The Direct Marketing Association predicts a massive shift in thinking over the next 5 years towards the wider utilisation of social media. Increased dispersion of usable data and a bigger commitment to social media marketing is predicted to cause an increase in global investment in this area. By 2021 a quarter of all market budgets are forecast to be focussed on social media.

Dealing comfortably and efficiently with unstructured data and delivering seamless analytics that don't always need a data scientist for quick interpretation has become both essential and urgent.

Business partnerships are truly changing the world. We have seen much more collaboration between big corporations and striving entrepreneurs in recent years. But in some cases, the 'partnership' has been a biased one. Partnerships through API's are becoming mainstream but too often the way they are being conceived and deployed serves only the largest party. In the UK the latest attempt by the Competition and Markets Authority to make banking more competitive has been the recently launched API project. The project, due to kick off in earnest next year, allows smaller partners access to data previously protected by the biggest banks and forces the larger players to accept API's from new challengers. The expected

result is a stronger customer offer delivering more contextualising for the user.

The technological solution looks positive but the project is unlikely to drive real market competition because the biggest banks have been awarded a controlling role in the governance of the project.

Great technology + old thinking only ever get us so far. And what's worse is the public now is empowered to watch with a clear view, via social media, when rhetoric is not quite reality. The enforced openness of now ubiquitous social media means customers and companies expect to see real partnerships and can increasingly identify corporate control dressed up at collaboration.

**In this new landscape of accelerated business change, blockchain technology has the power to fundamentally change partnerships for the better.**

The Hyperledger Project is a positive example of how blockchain can bring large corporations together with independent innovators in a spirit of authentic collaboration. The project was created to advance blockchain technology by identifying and addressing important features for a cross-industry open standard for distributed ledgers that can transform the way business transactions are conducted globally. It is a Linux Foundation initiative and implements many open source best practices familiar to other leading projects. If you are an entrepreneur, leader or interested in what is possible in this space, I'd recommend checking it out online at the Hyperledger Project website.

### **Blockchain and security: the need for boardroom reassurance**

In a recent survey by Greenwich Associates, many banking and technology leaders expressed anxiety over the security and confidentiality of blockchain technology, even as several are moving blockchain projects into production.

- **56%** worry about transaction confidentiality.
- **52%** have specific concerns about securing private keys.
- While almost a quarter (23%) fear the strength of cryptographic algorithms used in transactions.<sup>2</sup>

Today security and availability are top of mind for most corporate boards, but research clearly reveals that talk is cheap. Leaders increasingly look for more than rhetoric for reassurance when it comes to security and data privacy.

## Speed & security & more speed

Evidence suggests that advances in IT infrastructure really can start to solve some of our biggest economic challenges.

As the immense demands of a digital world are hitting businesses – old axioms are proving faulty. Even Moore’s law itself is now widely considered moribund. The demands of global change have forced businesses of all shapes and sizes to innovate or die.

More and more of the world’s biggest brands are moving vast swathes of IT infrastructure to cloud environments. The phenomenal pace of change is placing huge demands on companies to be agile and adapt quickly with boardrooms and shareholders remaining understandably obsessed with security.

## CASE STUDY

### Everledger: a secure digital ledger for diamonds to prevent theft & fraud with blockchain

When it comes to high security it would be hard to find a better example than the global diamond market. London-based start-up Everledger, which provides an immutable ledger for diamond identification and transaction verification, is partnering with IBM to bring the highest levels of security and tackle fraud on a truly vast scale. The diamond market presents enormous problems to be solved and Everledger is using the power of blockchain with the support of IBM to create massive sustainable change within the industry. Insurance claims and counterfeit issues together amount to a mind-blowing \$1.7 trillion global problem. Fraud, document tampering and a vast black market have hampered the ability to do business ethically and safely for generations. Everledger is a digital global ledger that tracks and protects items of value, chiefly, diamonds. Diamond fraud is a big issue. Everledger technology makes it possible to check the provenance

of diamonds by cross-referencing them against the ledger, preventing buyers from being ripped off.

The existence of a digital ledger using blockchain allows Everledger to record the ownership and origin of the jewels. The ledger makes it harder for thieves to sell the diamonds without re-cutting them to obscure their identifying features or serial code — and lowering their value in the process.

*“Working with IBM Blockchain as the backbone of our operations we’ve been able to move faster than anticipated to build a platform that can solve immediate problems being faced by the diamond industry, in addition to unlocking the potential to transform the way we protect commodities being traded in marketplaces globally,”*

- Leanne Kemp, CEO & Founder, Everledger<sup>3</sup>

Everledger, using IBM technology (the IBM Blockchain High Security Business Network, on IBM Bluemix, delivered via the cloud and underpinned by IBM LinuxONE™) is now able to tackle these problems head on and provide the highest level of security to millions of diamonds traded across 80 countries.

One of the key success factors has been the quality of the strategic thinking. Rather than simply transposing old approaches to the cloud, this partnership has been able to configure a nuanced and genuinely strategic approach which better fits the ambitious goals of the business.

Everledger uses IBM Blockchain technology to fight against insider threats, protecting data, and securing entry points and the integrity of network through unique and secure features underpinned by IBM LinuxONE, the world’s most secure server, in order to meet strict security requirements of the diamond industry.

*“Because of IBM LinuxONE’s security, I can sleep at night,”<sup>4</sup>* - Leanne Kemp, CEO & Founder, Everledger

[3] “Everledger launches blockchain platform to digitally certify Kimberly Process export diamonds”, ECONOTIMES, Blockchain Revolution Series, Sept 28, 2016.

[4] Leanne Kemp interview with the Cube at IBM Edge on Sept. 20, 2016.

## IBM LinuxONE for a secure blockchain

LinuxONE (IBM's secure open-source Linux server) computation speed is mind boggling and it also has some of most advanced security on the planet. The IBM team argues that some popular cloud environments leave the “back doors” open, which can render sensitive private data vulnerable. The IBM LinuxONE solution comes sensibly loaded with features to sign and encrypt the entire stack, the data – and run any containers inside secure service containers.

Making sure blockchain services can be as secure in reality as they are conceptually is fast becoming an essential part of persuading boardrooms into early adoption of these newer approaches. More and more businesses also appear to be adopting a ‘hybrid approach’ to infrastructure challenges – taking the best of the technology on offer and transitioning with a clear sense of context and caution.

## Here are 3 technical reasons why running blockchains on IBM LinuxONE might be a good idea for Chief Technology Officers to consider:

### 1. Security

The platform is the only one with the highest commercial security classification available. It is able to keep ledgers separate by holding them in isolated partitions in memory. Also, with hardware encryption with built-in accelerators for blockchain hashing, signing and security and tamper-proof crypto keys in the firmware and crypto cards, IBM LinuxONE is the most secure platform for blockchain transaction processing. It provides in effect an unlimited number of active signing sessions.

### 2. Speed

The hardware platform can speed up interactions with existing business data in CICS, IMS, TPF, DB2, VSAM or other processes. This enables the platform's memory networking capabilities to accelerate access to the business data if it's being used to do some part of your transaction in the blockchain. IBM testing has shown up to 7x increase in speed when accessing business data compared to an x86 blockchain infrastructure.

### 3. Availability

LinuxONE offers unparalleled security, availability and performance. With the capability to support 8000 virtual machines with up to 10TB of memory and 141 dedicated processor cores to power through all the toughest workloads, the system's vertical scalability makes sense for all mission critical application servers. With blockchain integrating with your mission-critical apps in the future, it makes sense that you would be running blockchain in the same place to take advantage of all the same benefits.

## Getting specific: attributes of IBM LinuxONE aligning to boardroom ambitions

- Independently certified highest security in the industry
- Isolation at every level — applications, containers, virtual servers, and partitions.
- Security capabilities built in to all elements of the system.
- Unique capabilities such as dedicated cryptographic processors that are tamper proof.
- Fully checked hardware and memory for data integrity guaranteeing secure transaction throughput.
- Designed for business-critical applications, where failure is NOT an option.
- Platform designed to provide 100% uptime for multiple decades.
- Fault-tolerant memory allowing continuous running with no interruption.
- Spare processor cores held in reserve to remedy any emergent issues in the active cores.
- Intelligent analytics that predict and prevent potential future failures, and comprehensive business continuity and disaster recovery.

## Executive Summary

Finally, IBM LinuxONE has been tested to withstand earthquakes, and it has survived fire and flood scenarios where all other infrastructure has failed.

Simply put, LinuxONE sets a new standard for *speed, scale, security, and availability* for the open community.

In sum, this enterprise Linux platform has the speed, scale and security to handle blockchains as they grow in size and complexity.

IBM LinuxONE helps to deliver upon the promise blockchain for secure transactions and payments.



### ABOUT THE AUTHOR: GUY SHONE

Guy Shone is one of the world's leading economic analysts. He appears regularly on BBC News, BBC Breakfast, BBC World, BBC Radio 2 and BBC Radio 5 Live. He also appears on BBC Radio 4, Reuters TV, Sky News and ITV News.

Guy is the former Economics & Business columnist for the Metro newspaper (the UK's most read national newspaper) and now runs the international analyst group Explain the Market.

Guy spent most of his 17 year career in the City of London. His previous jobs were the Head of Research for global investment group Old Mutual plc and Research Director for the UK government backed Money Advice Service. In 2012, he was commissioned by the UK government to produce the largest study ever done into financial behaviour.

Guy has been announced as judge for the 2016 Santander National Media Awards. He works with many of the world's leading brands.

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