



Blockchain and technology

Wednesday 11 April 2018

KPMG Board Leadership Centre



FTSE350 breakfast with Nicolas Cary

Nicolas Cary, serial entrepreneur, lifelong technologist and founder of Blockchain.info, one of the world's leading digital assets platforms, joined our FTSE350 breakfast to demystify blockchain and talk more widely about advancements in technology. Here we look at some of the key themes arising:

Perceived as complicated - put simply, what is blockchain technology?

Picture a spreadsheet (or ledger) in the cloud that is duplicated thousands of times across a network of computers. Then imagine that this network is designed to regularly update this spreadsheet and you have a basic understanding of the blockchain. Blockchain is an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way.

Information held on a blockchain exists as a shared - and continually reconciled - database. The blockchain database isn't stored in any single location, meaning the records it keeps are truly public and easily verifiable. No central version of this information exists for a hacker to alter, corrupt or counterfeit. Hosted by millions of computers simultaneously, its data is accessible to anyone on the internet.

Blockchain and progress in financial services

Legacy financial services operations are somewhat behind the curve. We can download videos, stream music and access books instantly but by and large, banking transactions still take time. However, using blockchain technology, anyone with a smartphone can now use openly available software to carry out digital currency transactions globally, without going via a bank, irrespective of their location, credit score or nationality.

"A global teleportation system for value", blockchain allows the operation of a peer-to-peer network without banks, an intermediary or foreign exchange.

Although originally adopted as an accounting method for cryptocurrencies, and Bitcoin in particular, blockchain technology also has huge value beyond financial services too.

The opportunities for application of blockchain are endless...

Blockchains (or distributed ledger technologies) are now being developed for a huge variety of other applications. Just a few examples are:

- the irreversible quality of blockchain technology and the ability to fully track provenance can be applied to birth certificates, passports and other forms of digital identity;
- goods and commodities can be tracked through entire supply chains which would allow customers to know precisely who produced a product, when and where;
- recording asset ownership and transactions whether that be physical assets like property, or intangible assets like intellectual property;
- capturing biometric healthcare data records to expedite and personalise patient care;
- carrying out smart contract energy supply transactions.

What are the risks?

At a macro-level, anything new and influential in the wrong hands with the wrong intent can be used to negative effect, and this applies as much to blockchain as to any other technology. So keeping abreast of change, the risks and opportunities is key to businesses competing, surviving and thriving in the digital age – as well as reacting proactively to emerging risks in a measured way.

Specific concerns may arise in relation to cyber-security. However, at a protocol level, as open source code, both Bitcoin and Ethereum (the world's second largest crypto currency) are well audited, the protocol is very secure and has never been compromised.

Issues can arise where additional software layered on top of the distributed ledger technology creates a concentration of value which increases the chance of cyber breaches.

New thinking versus experienced wisdom

A widely held view is that the digital world and technology such as blockchain are for the young millennial and an area where older generations may feel left behind. While established, traditional businesses seek to address any skills gaps around innovation and technology, technology-based organisations may also find themselves deficient - in terms of the long-term broad business experience afforded by seasoned executives and non-executives, and are progressively attracting experienced talent from banks and other large corporates.

A changing workplace

The way we do business and organise our lives is very different to ten years ago, and future prospects are equally incredible. Blockchain and other digital technologies move faster and with more agility than can possibly be imagined.

Donald Rumsfeld referred to there being "unknown unknowns - the ones we don't know we don't know". Businesses need to adapt to take full advantage of the opportunities afforded by technology advancements such as blockchain. Lip-service being paid may result in "active inertia" and the company falling behind competitors.

Inevitably, significant progress and automation of any task brings with it the concern of workforce impact and potential displacement of jobs. However, as referenced by the Kauffman Foundation (The Future of Work, www.Kauffman.org), historical trends suggest that while progress means some roles are displaced, others - different but often complementary roles - are in turn also created (David Autor, 2015, "Why Are There Still So Many Jobs? The History and Future of Workplace Automation."). The organisation's recruitment, talent and development strategy then also needs to adapt with this change.

Contact us

Anton Ruddenklau

Head of Digital & Innovation, Financial Services & Partner
T: +44 (0) 207 694 2224
E: anton.ruddenklau@kpmg.co.uk

Timothy Copnell

KPMG Board Leadership Centre
T: +44 (0)20 7694 8082
E: tim.copnell@kpmg.co.uk

Insights from KPMG Digital & Innovation

Questions to ask in the boardroom:

1. What areas of our business can use blockchain technology: e.g. IP, contracts, or transactions?
2. Are our competitors, suppliers or customers using blockchain? What has been the impact to their business and ours?
3. Will our customers and suppliers benefit from our using blockchain and can we support them in the transition, ultimately leading to greater margins?
4. Could blockchain be a disruptor to our business?
5. What are the risks of implementing blockchain to our current and future business?
6. Do we have a strategy in place to assess, review and implement blockchain and if so, who is responsible?
7. What skills gaps do we have? How are they being addressed in our recruitment and development strategy, our approach to talent and training?
8. What are the costs in time, resource, legal and finance to implement?

Five actions for boards to consider:

1. Encourage open and honest discussions around new technologies; understand where the board needs further collaboration and insights to explore and embrace this space further.
2. Address skills/knowledge gaps to ensure the board is up to speed on blockchain and innovative technologies, the possibilities and risks. Along with formal training, there's a wealth of information available on-line such as a video of Nic Cary speaking at [TEDx Manchester in 2017](#), or access our [KPMG website](#) for further content.
3. Make your innovation conversations more dynamic and rich; consider using someone objective to shape, challenge and consider scenarios (eg third party facilitator or agitator), to help you remain flexible and agile in your outlook.
4. Appoint a senior management person to be responsible for reviewing the implications of blockchain/other technologies to your business, customers and competitors, report back to the board and agree actions.
5. Reconsider regularly; consider the impact on the overall operating model and any steps needed to further futureproof the business.

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2018 KPMG LLP, a UK limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in the United Kingdom. The KPMG name and logo are registered trademarks or trademarks of KPMG International.