



# BLOCKCHAIN

## BEYOND THE HYPE

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Popular culture references to ‘blockchain’ typically refer to public blockchains, such as Bitcoin, but public blockchains are only one type of distributed ledger technology (DLT), one optimized to allow strangers to trade.

The blockchains that are usually discussed in enterprise settings are almost all private DLTs, which use blockchain components and can share many of the beneficial characteristics of public blockchains. However, they also have strict rules on which parties have visibility to which data within the permissioned space and often provide no visibility to the general public. Permissioned DLTs typically have additional databases and offer more extensive enterprise security to manage users and protect sensitive transaction information.

In short, permissioned DLTs such as Quorum, Hyperledger, and R3 Corda differ significantly from public blockchains and have been designed specifically to provide companies who otherwise feel uncomfortable sharing data to interact safely. Permissioned DLTs create secure, encrypted spaces where companies can share specifically selected data with counterparties and can audit those interactions and any changes to that data.

Designed correctly, permissioned DLTs provide enough transparency to allow one party to confirm or verify another party’s behavior without risking that data’s exposure to anyone outside the transaction.

### UNIFIED EMERGING TECHNOLOGIES

Given the hype that has surrounded blockchain since its emergence and how little has actually been delivered, an eye roll is not undeserved.

Blockchain is at risk of joining the Internet of Things (IoT) and Artificial Intelligence (AI) as heralded revolutionary technologies that always seem to be a few years away.

While most people treat the evolution of these technologies as discrete phenomenon, it is beginning to become clear that the truly revolutionary effects will be felt as the technologies are combined.

Legacy systems, a foundation for managing proprietary data and business operations, which often sit in protected silos, are inaccessible to anyone outside the organization and often just as unavailable to other business functions within the same organization.

However, three key technologies: the Internet of Things (IoT), artificial intelligence

(AI), and robotics, can create a new lifecycle of data.

- **Collect:** IoT refers to the proliferation of communication-enabled devices and sensors, which collect data from facilities and supply chains through an assortment of autonomous, connected devices, sensors, and monitors
- **Interpret:** IoT data will quickly overwhelm human bandwidth (and patience) and will have little value unless tools emerge to process it in a format to aid decision-making, but fortunately, the second technology, AI, will interpret and process that data
- **Action:** Robotics does not necessarily refer to metal-clad physical robots but to a more general idea of a fully automated program or device that can execute something in the physical world.

Of the three technologies listed, robotics has had the most substantial existing effect on older processes, but robots still typically focus on a single specialized process with limited variability. The uses for robotics will expand exponentially once the other two technologies provide the intelligence for robots to choose different executions depending on circumstances.

Smack in the middle between ERP (Establishing the Foundation) systems and these technologies will be the DLT, the distributed data layer that will support all the technologies above it.

The DLT will feed enterprise data into the shared process, import generated data back into the enterprise, and capture an unalterable record of all the interactions that take place.

Above all else, the blockchain will allow different enterprises to collaborate at the data level in a trusted manner.

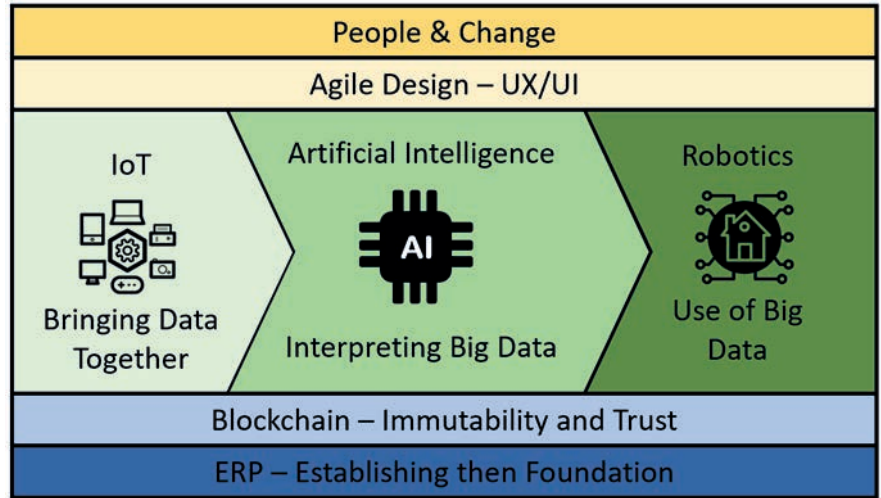
Attempts at collaboration will no longer be handicapped by each counterparty's inability to monitor the behavior of other counterparties within a shared process.

**SUPPLY CHAIN COLLABORATION**

The supply chain is a natural place to improve collaboration. Virtually every significant part of the process involves sharing data with another party involved in the supply chain or that provides services to it.

There are countless potential use cases here, but a few big ones are emerging in the energy and transportation industry:

- **Reconciliation:** Enterprises spend enormous amounts of energy reconciling their data with that of commercial counterparties, partners, regulators, and government authorities. A physical transaction lifecycle DLT, such as that being developed by my company, VAKT, can provide a shared view of all the data attached to the transaction, creating a single source of truth, so no post-facto reconciliation is ever required. By being able to rely on a single source of truth, our customers expect to be able to shrink their back office footprint considerably, with some customers estimating savings of up to 40%.
- **Trade Finance:** Once a single source of truth is established and digital data is shared between trade counterparties, it should open the door to new sources of trade finance. Once given access to the data, finance providers will be able to verify the facts of the transactions from both counterparties simultaneously, reducing many of the current reconciliation and verification risks for trade finance providers.
- **Security and Fraud Prevention:** Virtually every one of our customers has suffered significant losses at one time or another from cases of fraud. From phishing to false invoices to outright theft, checking and rechecking that incoming data is legitimate is a constant effort. Shared ledgers can ensure that you are interacting directly with your counterparty and that all data is secure and encrypted, and that actions by your counterparty are recorded and visible.



- **Provenance:** Customers and other parties are increasingly requiring demonstrations of product origin and provenance. A shared DLT for all actors along a supply chain can provide an irrefutable history of the transactions and movements of a product.

**PREPARING FOR DISRUPTION**

There is no foolproof strategy for how to effectively wrestle with a new technology that, in the long-run, could prove to be transformational or could turn out to be a dud.

There is a risk in overinvesting in a new technology, just as there is risk in ignoring it. However, the risks are not symmetric. If distributed ledgers turn out to be an overhyped fad, as some have accused them of being, an investment is effectively an R&D write-down. However, if the technology lives up to its promise, ignoring it could lead one to wake one morning to find their business model is no longer viable.

An added complication (or in this case, feature) of distributed ledgers is that there is not much value to building your own as distributed ledgers only really work if many members of the ecosystem are engaged with the same platform.

An individual is unable to share data with themselves, and if you can only recruit a handful of industry participants to join the platform, whatever improvements are created are largely offset by the parallel process you have to maintain for those who remain off-platform.

One of the keys to VAKT's success in preparing to become one of the world's first production DLT platforms is that a consortium was successfully formed beforehand that consisted of significant market players who could bring volume to the platform.

Importantly, VAKT is an independent, private company with capital contributed by shareholders, which is important as it differs from previous volunteer consortiums or platform efforts headed by third party software vendors and defrays the R&D

costs of building a platform across all the shareholders.

Instead of spending money on a standalone POC to evaluate distributed ledgers, you and fellow market participants can form a company, pool resources, license an existing industry DLT, and build an application together to attack shared industry problems. Your consortium will reap first-order benefits by solving shared problems and be well-positioned to address any industry disruptions as the technology matures.

**ABOUT THE AUTHOR**

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 Lyon Hardgrave is Vice President for Business and Product Development at VAKT in London. Previous to joining VAKT, Lyon spent five years as a Director in the oil trading group at Glencore Ltd in Stamford, CT. He previously assisted the Federal Bank of New York in its drafting of commodities regulations after spending nearly a decade trading oil and natural gas options for UBS, Hartree, and Societe Generale. He has an engineering degree from Rice University and an MBA in Finance from Wharton.

**ABOUT THE ORGANIZATION**

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 VAKT was launched through an initial investment from nine of the largest global energy traders and providers of trade finance: BP, Gunvor, ABN AMRO, Equinor, Koch Industries, ING Group, Royal Dutch Shell, Mercuria Energy Group, Société Générale. Our initial platform will focus on the North Sea crude oil trading market and transform the current business process. VAKT will be rolling out similar platform functionality for the US Crude Pipelines market and the ARA Barges market in early 2019 with several additional markets to be launched later that year.

**ENQUIRIES**

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 Web: <http://www.vakt.io>