



HYPERLEDGER

BLOCKCHAIN TECHNOLOGIES FOR BUSINESS

A guide to developing applications with Hyperledger and Blockchain

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The Basics

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Introduction to Blockchain

October 2008, it all started with Satoshi Nakamoto and his historic paper **Bitcoin, a Peer-to-Peer Electronic Cash System** <https://bitcoin.org/bitcoin.pdf> Which addressed a key problem:

*A purely peer-to-peer version of electronic cash would allow online payments to be sent directly from one party to another without going through a financial institution. **Digital signatures provide part of the solution**, but the main benefits are lost if a trusted third party is still required to prevent double-spending. **We propose a solution to the double-spending problem using a peer-to-peer network.***

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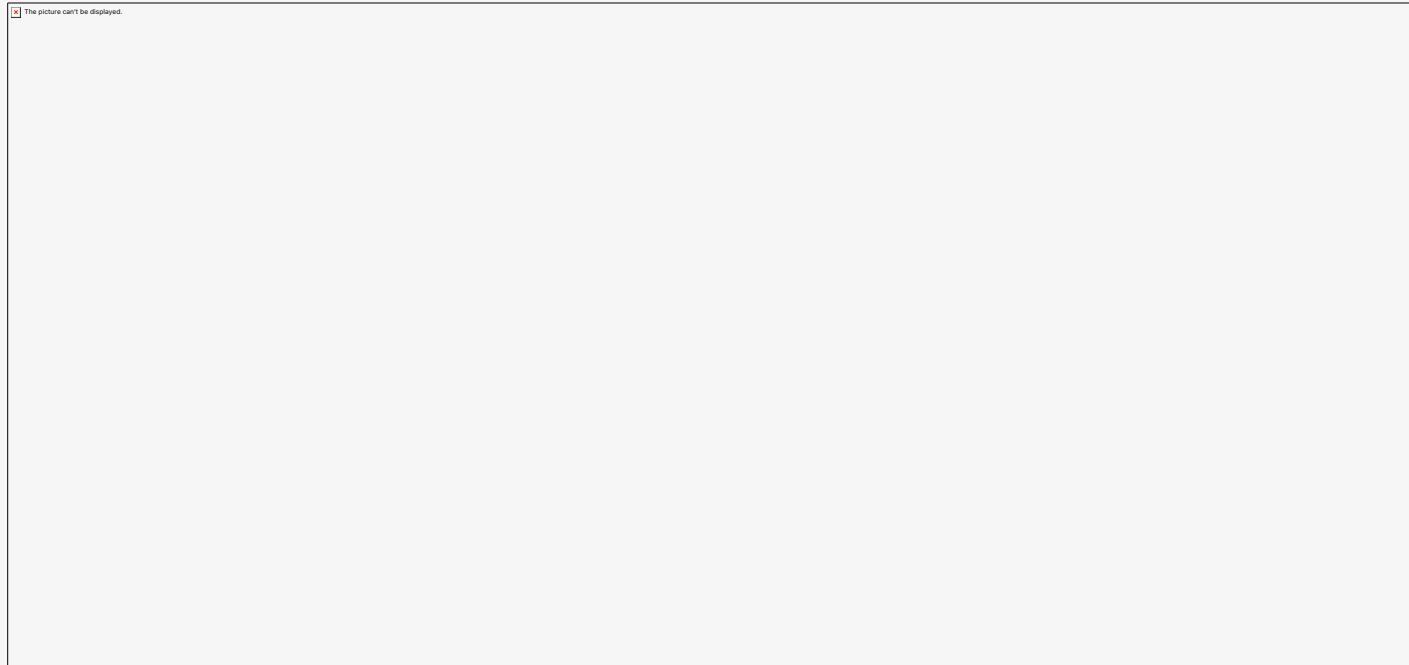
<https://arxiv.org/pdf/1801.10228v1.pdf>

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A shared, replicated, permissioned ledger

No central,
third-party
mediator,
such as a
financial
institution
or
clearinghouse,
is involved

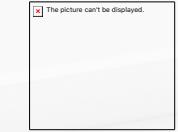
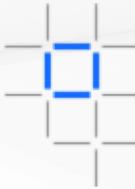
No
reconciliation
needed



Blockchain

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Blockchain global impact



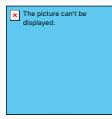
10% of Global GDP
will be stored on
blockchains or
blockchain related
technology by 2025.¹



17% of Banks
Released a Blockchain
application in 2017.³



\$176 Billion
The business value
added by blockchain by
2025, then surge to
exceed \$3.1 trillion by
2030.²



\$2.3 Billion
Estimated size of the
Blockchain technology
market by 2021.⁴



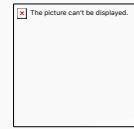
¹ Source: World Economic Forum
³ Source: IBM

² Source: Gartner
⁴ Source: MarketandMarkets

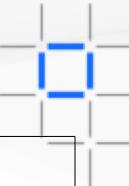
Re-imagining digital business processes



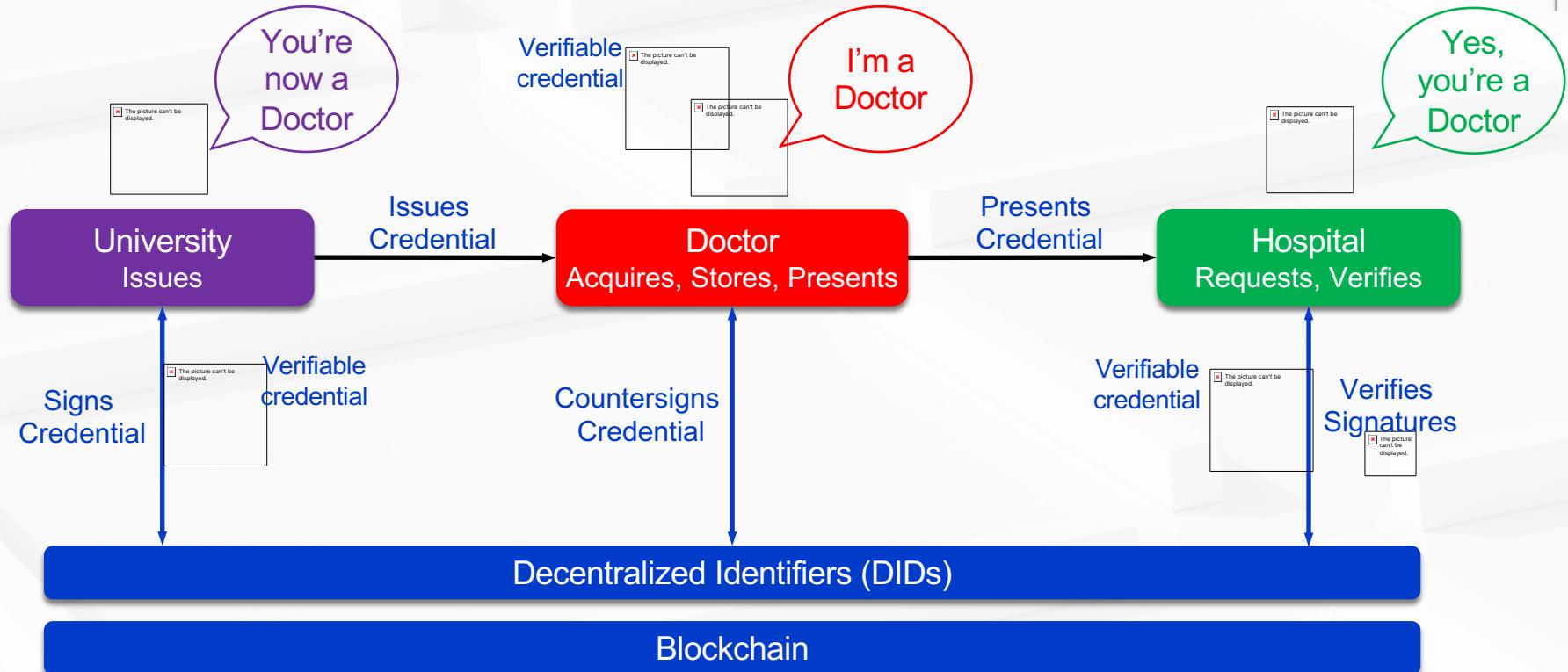
World Wire



- **Connects the ecosystem:** brings together ports, terminals, ocean carriers, government authorities, etc
- **Manages quality risk:** enable rapid, low cost, food recalls
- **End to End transparency:** data sharing extends beyond 'one up, one down'!
- **Trust and Audit:** ensure provenance with easily trusted, auditable records.
- **Consumer confidence:** comprehensively communicate with end consumer
- **24x7 payments:** payment support regardless of size, origination, destination or asset type
- **Higher visibility:** for streamlined transactions with reduced disputes and reconciliation needs
- **Regulatory compliance:** enhanced through improved transparency
- **Secure network:** with interaction and eligibility criteria & robust access control
- **Trade finance platform:** backed by a consortium of major international banks
- **Full function:** enables accurate trading posture information, order to settlement control, risk coverage, track and trace options
- **Near-real time:** exchange of information
- **Discovery:** Allows buyers to discover trusted sellers and vice-versa



Self-sovereign Identity example



Towards a Network of Networks

