

Blockchain



What is a Blockchain

What is Blockchain?



Intro Video:

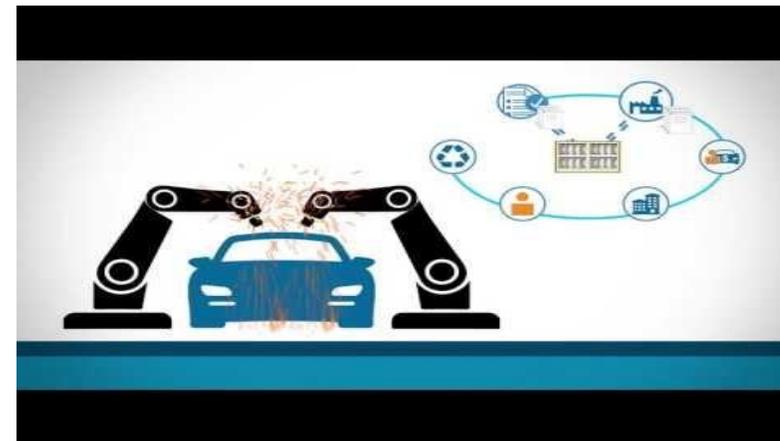
<https://youtu.be/WiRFuHXHBhk>

- A **blockchain** is a distributed database that maintains a continuously growing list of ordered records called *blocks*. Each block contains a timestamp and a link to a previous block.
- By design, blockchains are inherently resistant to modification of the data — once recorded, the data in a block cannot be altered retroactively.
- Blockchain is "an open, immutable distributed ledger that share transactions between two or more parties efficiently and in a verifiable and permanent way. The ledger itself can also be programmed to trigger transactions automatically." — e.g. trigger an automatic payment when a contract has been signed.

Advantage:

- The Blockchain is maintained by a network of computers – i.e. there is no central authority (e.g. a bank) involved – all parties, entities and “products” are verified and acknowledged by the “members” making the system hacker/tamper proof

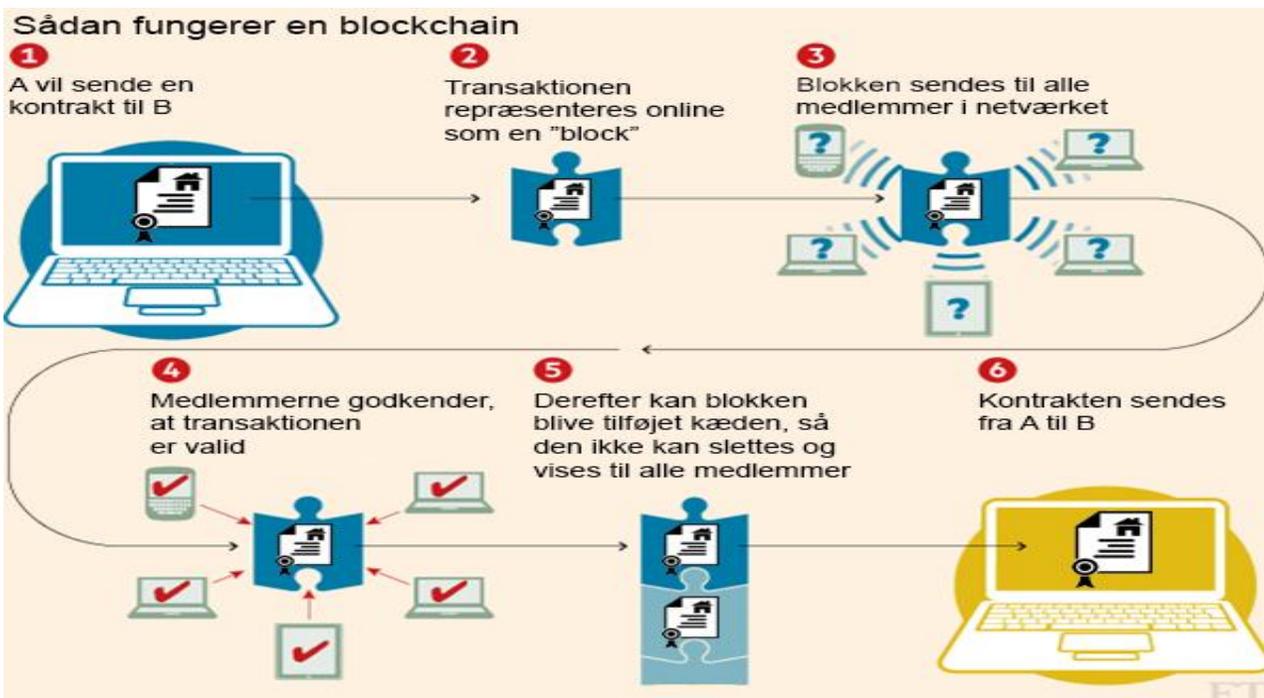
Source: Wikipedia



Video about Smart Contracts & Blockchain:

<https://youtu.be/IgNfoQQ5Reg>

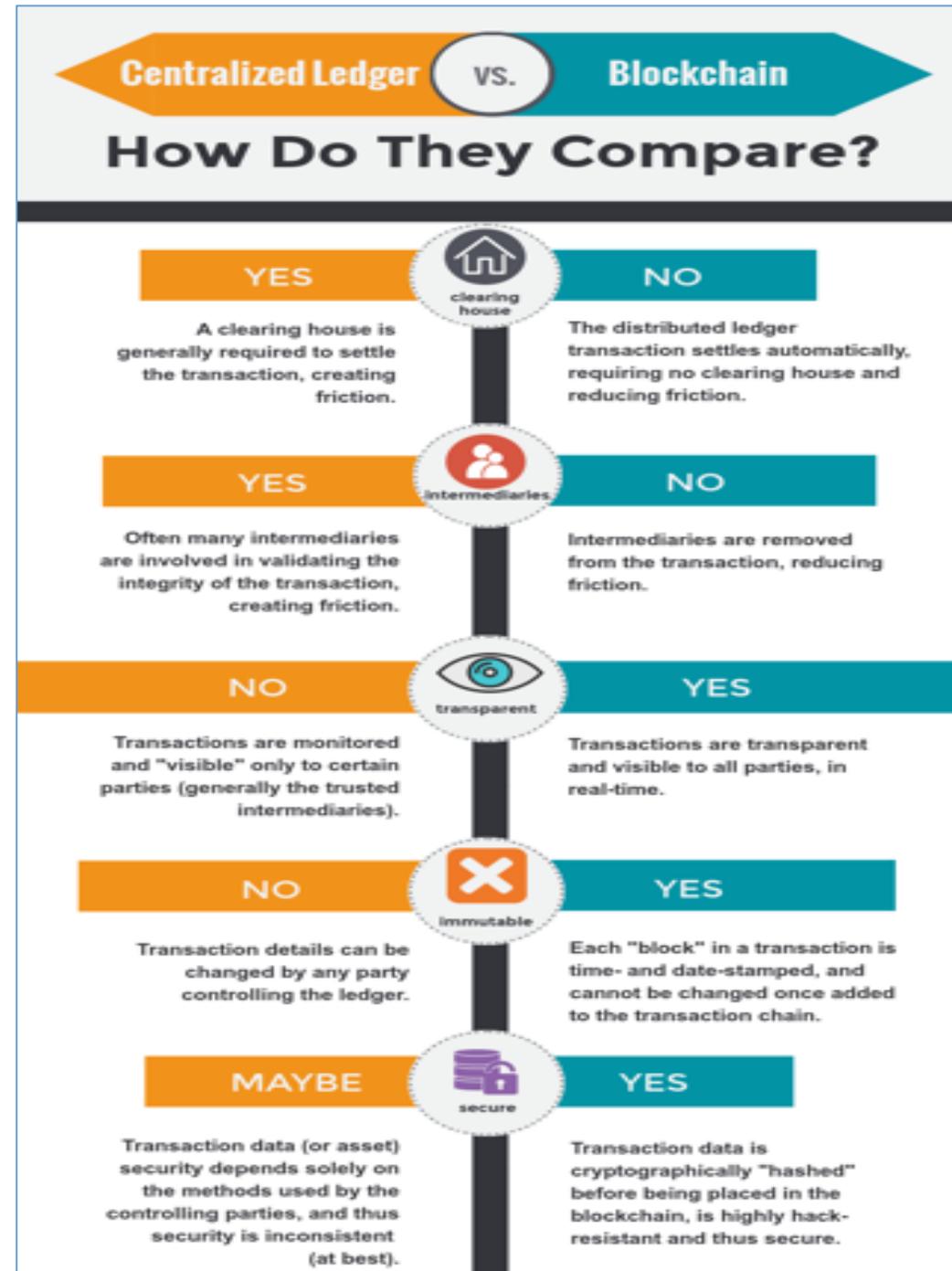
What is a Blockchain



Usage areas:

- "Smart Contracts" – agreements/contracts between persons/entities
- Automating the process around contracts and related actions – e.g. automatic payment when a contract is signed or goods are delivered
- KYC - Verification of ownership, identity, authenticity, etc.
- Full version control and documentation of transactions with audit trail
- Full insight and control over who has access to my data and information

Source: Wikipedia, <http://www.lawtechnologytoday.org/2017/01/blockchain-101-for-lawyers-part-1/>



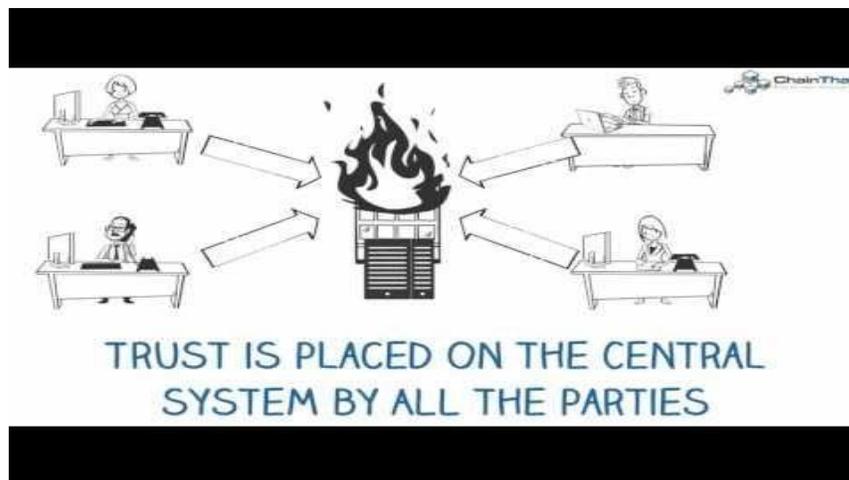
General Observations

- The Blockchain technology is said to get as big an impact on the business world as the internet. It will revolutionize the banking industry and will have a deep impact on how contracts, documents, payments etc. are handled between entities
- The most well-known usage of the Blockchain technology today is the Bitcoin. Everything related to handling (buying, selling, transferring,...) Bitcoins are handled by the Blockchain technology
- KYC (Know Your Customer) is an important element of the Blockchain – Once a person has been registered and verified on the Blockchain by a trusted party there is no need to ever get registered or verified again anywhere in the world. The same goes for assets, contracts, entities, products, etc.

Example:

- The entire lifecycle of a car will exist in the Blockchain and is fully traceable (if permitted) throughout its lifetime – i.e. you can trace the history of your car all the way from the manufacturer (when and where was it manufactured, who worked on it, where did the parts come from, etc.), through to the importer, the dealer(s), the owner(s), the repair shop(s), etc. You can see what, when and where it was repaired, if it was involved in an accident, how many owners it had, the mileage at each repair, etc.

What is a Smart Contract



Intro video to Smart Contracts:

<https://youtu.be/8Dw1nz9t74I>

- A Smart contract is basically a computer program – “encoded logic that receives certain inputs and executes a set of instructions to reach one of many pre-defined outcomes... At its heart, a smart contract simply guarantees execution of a particular code base”

October 2016: The world’s first shipment of goods supported by a letter of credit using blockchain-based smart contracts and the Internet of Things (IoT):

- The shipment of 88 bales of cotton from the US to China involves a letter of credit executed through a digital smart contract stored on blockchain technology. It has a GPS device tracking its geographic location and funds are expected to be released when the ship reaches its destination.

<https://www.artificiallawyer.com/2017/01/01/intelligent-contract-founders-clause-io/>

<http://www.legalfutures.co.uk/latest-news/groundbreaking-digital-contracts-business-layers-security-defeat-hackers>

DocuSign – Smart Contracts



LOCATION: US

URL: <https://www.docusign.com/>

INFO:

- Partnership w. IBM on Blockchain

TECHNOLOGY:

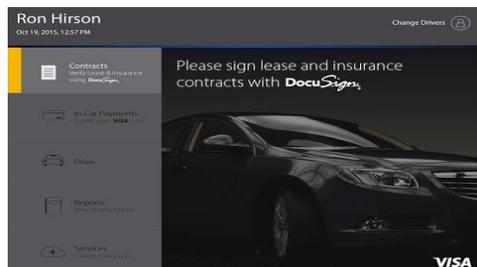
- Blockchain
- eSignature
- Open APIs to other systems

SOLUTION EXAMPLES:

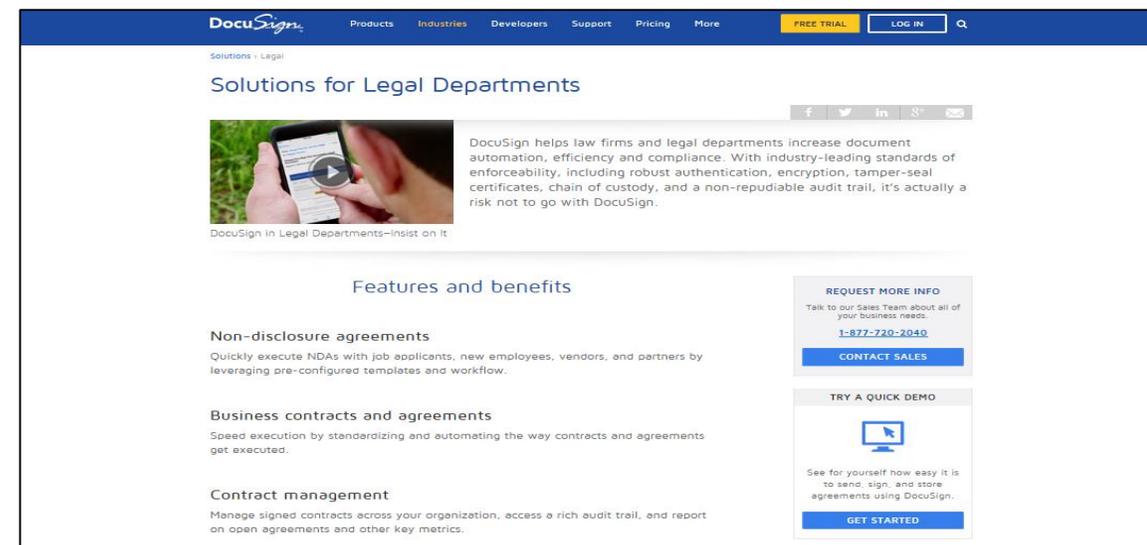
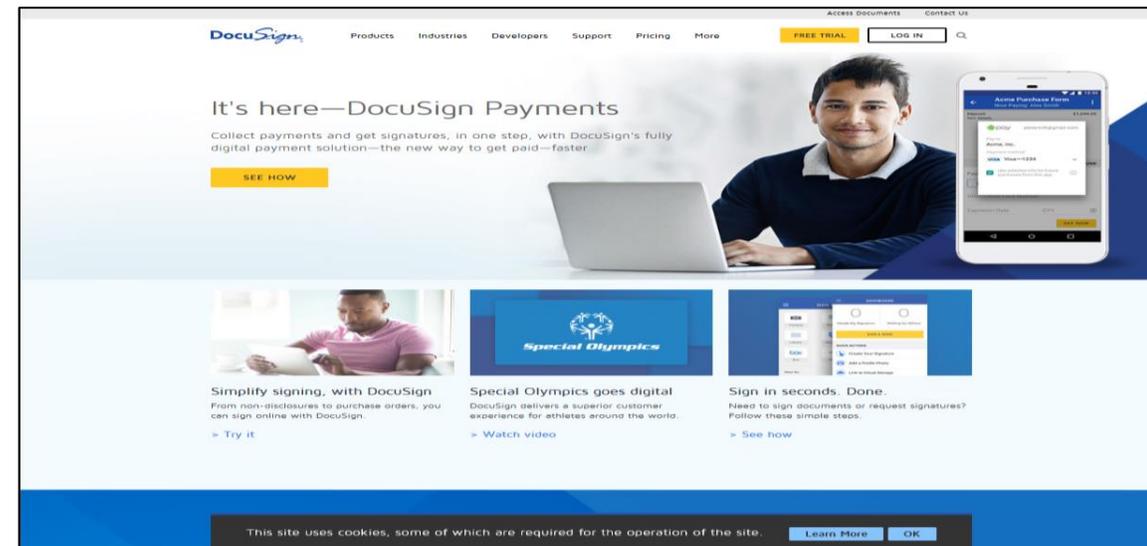
- Advanced workflow mgmt.
- Document & contract Mgmt. -
- Robust authentication, encryption, tamper-seal certificates, chain of custody, non-repudiable audit trail

SOLUTION(S):

- **DocuSign Digital Transaction Mgmt.** - empower your internal clients and improve the speed of contract execution
- Securely protect confidential information with enforceability and multiple levels of authentication
- **DocuSign Payments** - sign and pay for virtually anything in a single step
- **DocuSign Signature**
- **DocuSign Transaction Room** - keep transactions on track with tasks that guide agents through your process



Video: Car leasing using Smart Contracts & Blockchain:
<https://youtu.be/2rLNbd6MQXg>



Clause – Smart Contracts

LOCATION: US

URL: <https://www.clause.io/>

INFO:

- Founded 2015: 2-10 employees
- Funded by Denton's Law firm

TECHNOLOGY:

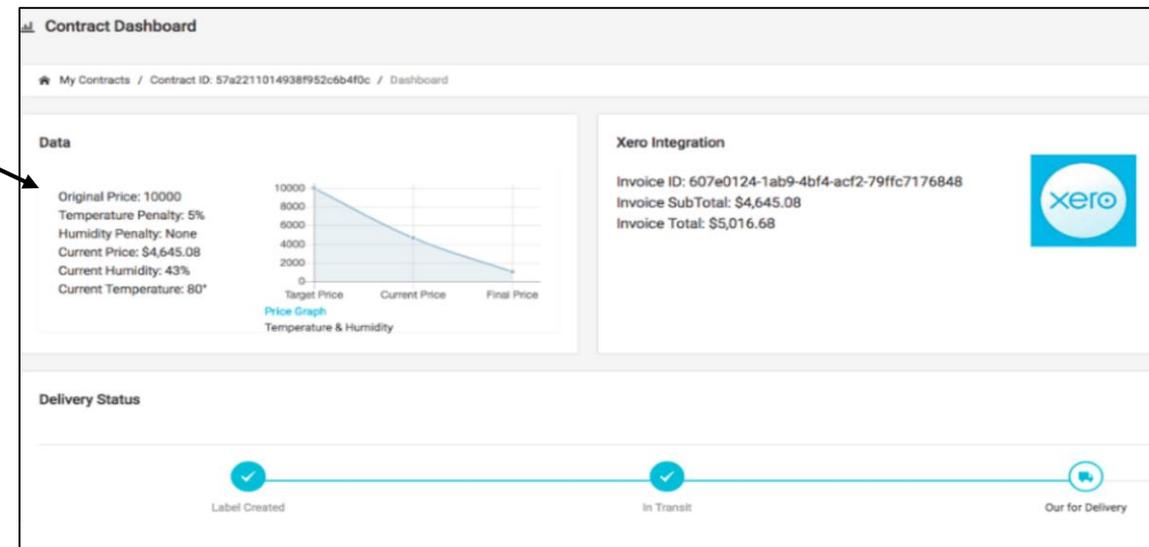
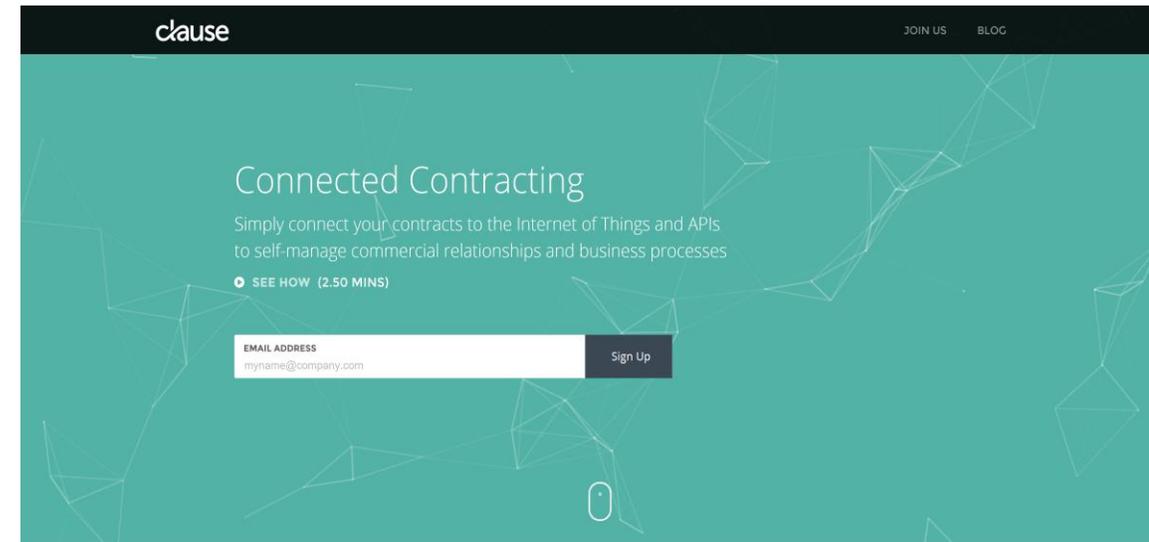
- Blockchain
- Open APIs to other systems

SOLUTION EXAMPLES:

- Create, manage and update contracts in real-time through integrating IoT, analytics services and web-service APIs
- Prices, warranties, delivery requirements, and other terms update in response to data after the parties form their initial agreement

SOLUTION EXAMPLES:

- Designed a supply agreement connected to an IoT platform that fed the contract humidity and temperature data. The data feed was designed to monitor any breach conditions of the contract and provide dynamic pricing of the goods as they travelled. I.e. the contract changed the price of the goods as external conditions had an impact on them (see below).



Intro Video:

<https://youtu.be/cmmq-JBMbbQ>

HirePeter – Smart Contracts



LOCATION: US

URL: <https://hirepeter.com/>

INFO:

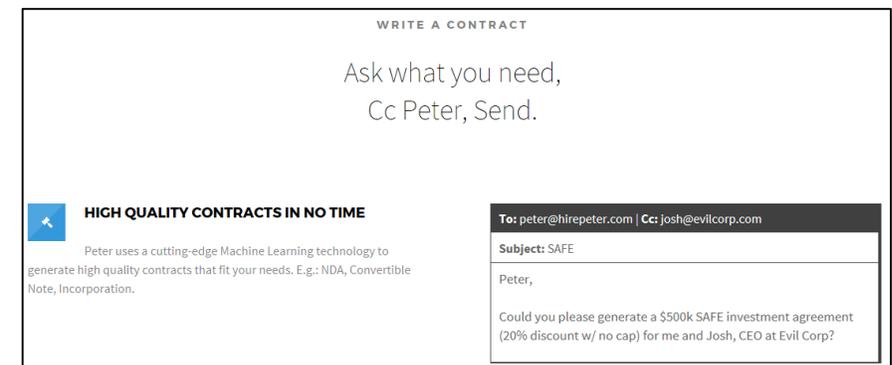
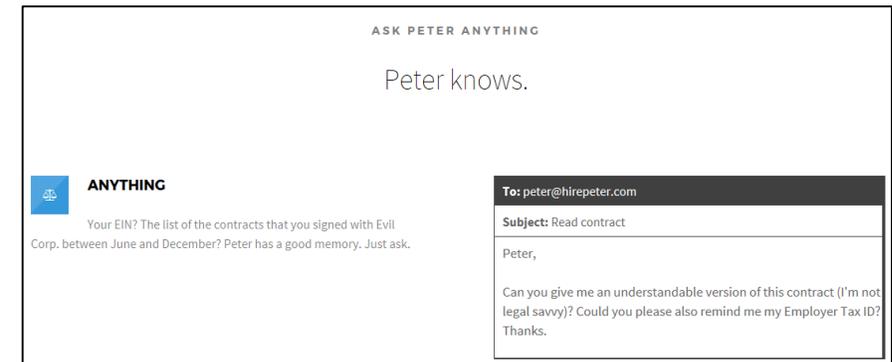
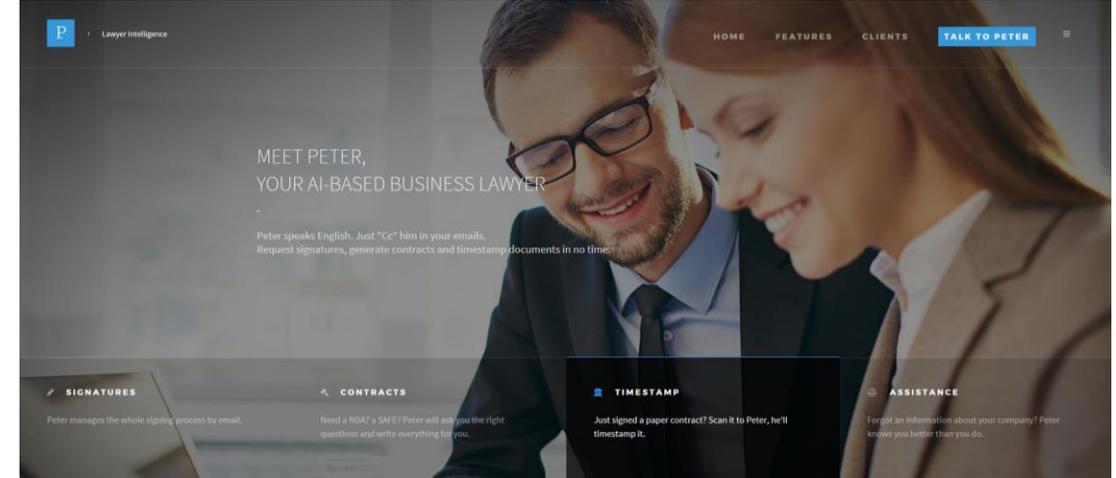
- Founded 2015 – 2-10 employees
- Created by Louison Dumont – 18 years old

TECHNOLOGY:

- AI
- Blockchain
- Chatbot

SOLUTION(S):

- **Timestamping** of documents - using the timestamping feature, scanned documents are notarized and stored via the Bitcoin blockchain to certify integrity and proof of existence.
- **Ask Anything** - ask Peter to explain the wording of a contract or to retrieve past contracts or other information such as Employer or Tax Identification numbers
- **Signatures** - request legally binding signatures
- **Contracts** - generate contracts (e.g. NDAs)



Ethereum – Smart Contract Platform



LOCATION: Switzerland

INFO:

- Founded 2014 – 11 - 50 employees
- Almost 400 projects made using Ethereum Platform

TECHNOLOGY:

- Based on Blockchain as the foundation
- Decentralized platform that runs smart contracts: applications that run exactly as programmed without any possibility of downtime, fraud or third party interference.

URL: <https://www.ethereum.org/>

SOLUTION(S):

- Solidity – programming language to e.g. create a tradeable digital token that can be used as a currency, a representation of an asset, a virtual share, a proof of membership or anything at all.
- The tokens use a standard coin API, so your contract will be automatically compatible with any wallet, other contract or exchange also using this standard.

SOLUTION EXAMPLES:

- Cryptocurrencies
- Energy-, Gold-, Auctions
- Voting-, Lottery-, Escrow-,.... solutions
- Crop insurance solutions
-



Project examples:

Powermatcher Blockchain Raffie Decentralized energy auction for balancing supply and demand Work in Progress	DAO IPCI IPCI Blockchain technology for carbon markets Live	JobDapp JobDapp Team A secure credential platform based on Dapps, ratings and other central agents Work in Progress	FairPay Sam Lane FairPay is a global community based project creating salary tran Work in Progress	TokenNinja TokenNinja ERC20 token management system Work in Progress	ProjectLIVE Mandiant Collaborative Problem-solving tool Work in Progress
Lufyr Lufyr Decentralized insurance/escrow/enclosed with smart contract Work in Progress	Lotto DeviateFish Simple lottery/lotto secure lottery Working Prototype	Gold Auction CodeTrust Daily settled auction for gold, exchange of tokens Working Prototype	TrekMiles David Fitness location app in Currency + Community Live	EthereanMind Conrad Barski A using Dapp to capture the sentiments concerns of ethereum Working Prototype	Explorer Eversax Ethereum token explorer. Tokens for investors, nodes and API Live
Decypher TV Decypher Media Ethereum Sponsored for Developers Live	Pray4Prey Julia Albrecht, Stefan Hötter The first and only blockchain aquarium Working Prototype	StackExchange Bounty DApp Oraclez Bounties for Blockchain.org questions Working Prototype	Proof of Identity Oraclez On-chain identity verification via your Ethereum Dig-ID Working Prototype	Youtube contract Oraclez Automated escrow for publishers and their sponsors Demo	AnonymousVoting Patrick McCarty Decentralized voting (with maximum user privacy) Working Prototype
DNN Smit and Dandrey Decentralized news network Work in Progress	EthPassport Michael Delta Costa Decentralized Travel Concept	Smart Identity Delivite Next generation digital identity for the new digital economy Working Prototype	Consulteum Vincent Muehle Decentralized Consulting Platform Work in Progress	BlockCapsule BlockCapsule Developers The DApp for decentralized services Work in Progress	Pass DAO Frederic A DApp for decentralized services Live
Decibel LIVE Decibel LIVE Voice monitoring and compensation treatment based on Ethereum Working Prototype	Flight Delay Insurance Ethereic GmbH Get instant payout in case your flight is late Working Prototype	Ethereic Social Insurance Ethereic GmbH Social insurance based on group DApp assessment Working Prototype	Crop insurance Ethereic GmbH Get instant payout in case your weather damages your crop harvest Working Prototype	IDEX Decentralized Capital Decentralized Ethereum exchange. Trade of smart contracts Live	BLOCKLOG.xyz monkeycage DECENTRALIZED BLOCKCHAIN SUPPORTER Live
THOT Pyrrag Ergo Games Live	INSTIMATCHBLOCK Hugh macmillan Trade income based on sports (cricket, basketball) Live	AuctionHouse Dung Phanhans, Eric Tang Auction platform for non-fungible tokens sales Live	Etheroll James Britz Ethereum game assets - gamble ether Live	Blockjack Waltreth + WhyNotShiro The first Blockchain Gambling System on the Blockchain Live	Flight Delays Suck Christopher Muesenbrock Get instant payout in case your flight is late Live



Intro video:
<https://youtu.be/j23HnORQXvs>



Demo Video:
<https://youtu.be/IQ4USRtzWko>

Relevant Reading: Blockchain 101 for Lawyers

- <http://www.lawtechnologytoday.org/2017/01/blockchain-101-for-lawyers-part-1/>
- <http://www.lawtechnologytoday.org/2017/01/blockchain-lawyers-101-part-2/>