

# An Introduction to Blockchain and Smart Contract Technology

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OF WOMEN IN COMPUTING

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Computing Machinery

# About Me

- Graduated with computer science degree from University of North Texas in 2014
- 2 Years @ USAA (awesome place to work)
- 4 Months @ Ethereum Foundation/Independent Consultant
- Working with blockchain technology for 5 years
- 1 wife (Laura) and 3 cats (Vivian, Fry, and Leeloo)





What is this stuff  
and how did we get  
here?



# Blockchain

Decentralized, distributed database that keeps a permanent tamper-resistant record of all previous transactions.

**A truth machine that enables disintermediation.**

## 3 Components:

- Data Layer
- Networking/Gossip Layer
- Consensus Layer

## HOW IT WORKS:



Someone requests a transaction.

The requested transaction is broadcast to a P2P network consisting of computers, known as nodes.



The network of nodes validates the transaction and the user's status using known algorithms

### Benefits

- Increased transparency
- Accurate tracking
- Permanent ledger
- Cost reduction

The transaction is complete.



The new block is then added to the existing blockchain, in a way that is permanent and unalterable.



Once verified, the transaction is combined with other transactions to create a new block of data for the ledger.

1.0

2.0

3.0

### Blockchain Evolution

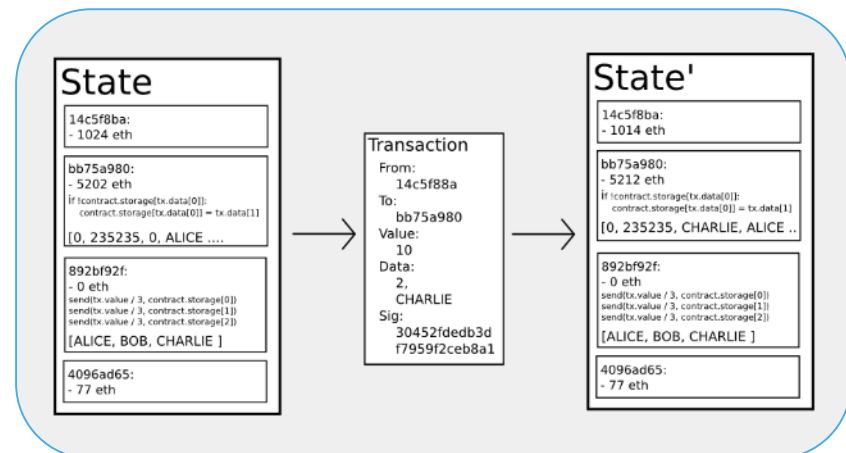
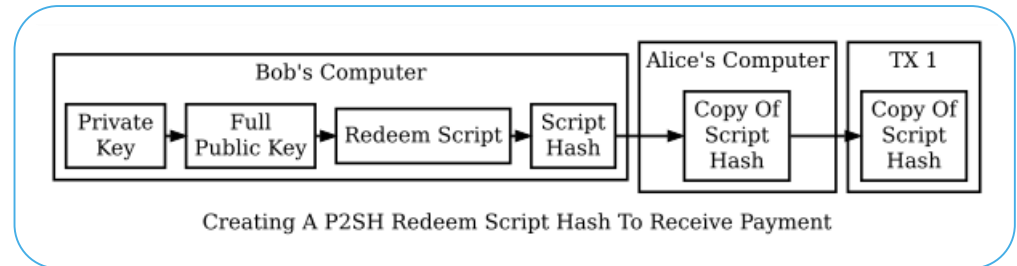
Application in cash: cryptocurrencies, currency transfer, remittance & digital payment systems

Application in economy, market & finance: stocks, bonds, futures, loans, mortgages, titles, smart property & smart contracts

Application beyond currency, finance & markets: government, health, science, literacy, culture & art

Courtesy blockcon.co

# Progress



# Smart Contracts

Self-enforceable, trustless pieces of code.

*“Instead of just moving money, let’s put programs on the blockchain!”*

Shares the blockchain benefits:

- Permanency
- Transparency
- Security
- Redundancy
- Decentralization

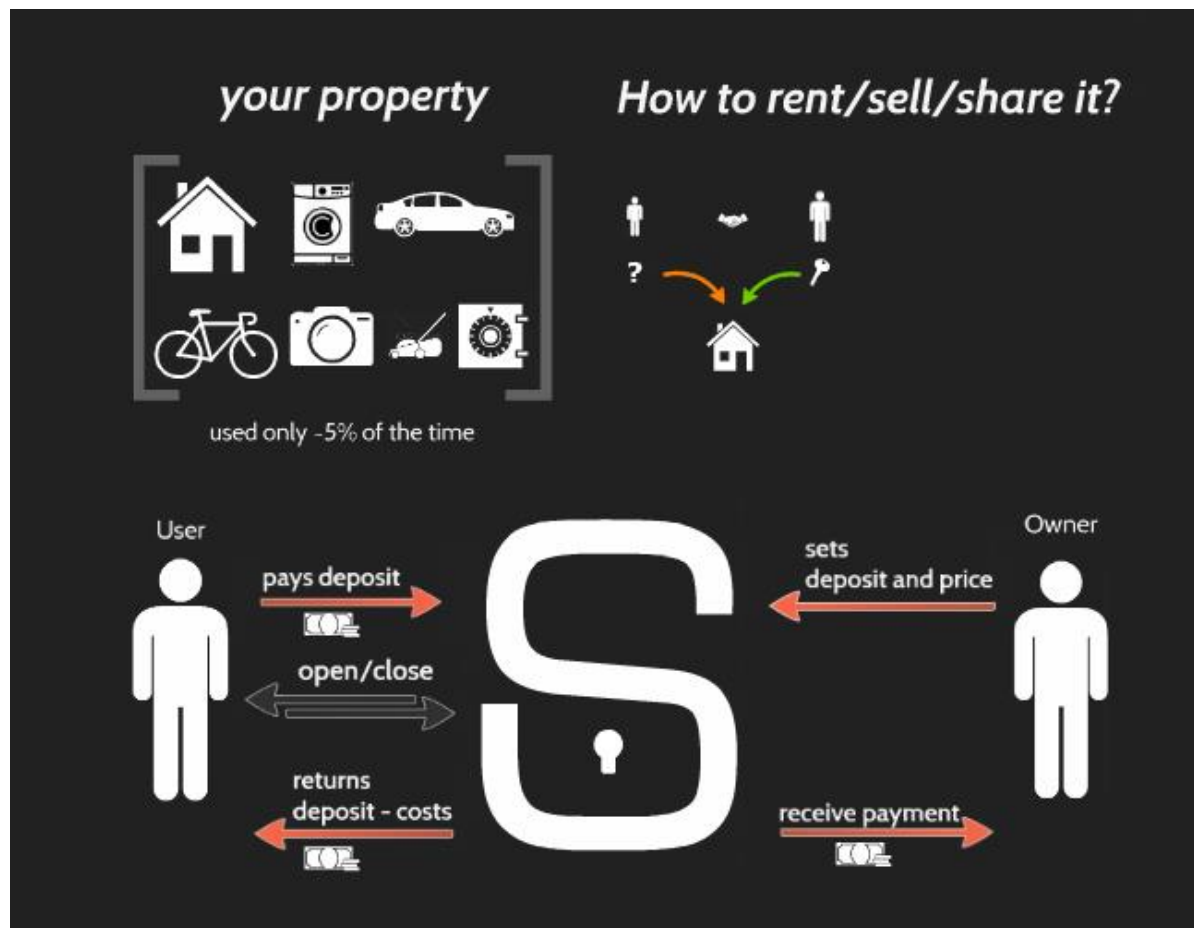


# How is blockchain being used?





# Example 1: IoT and Rentable Assets

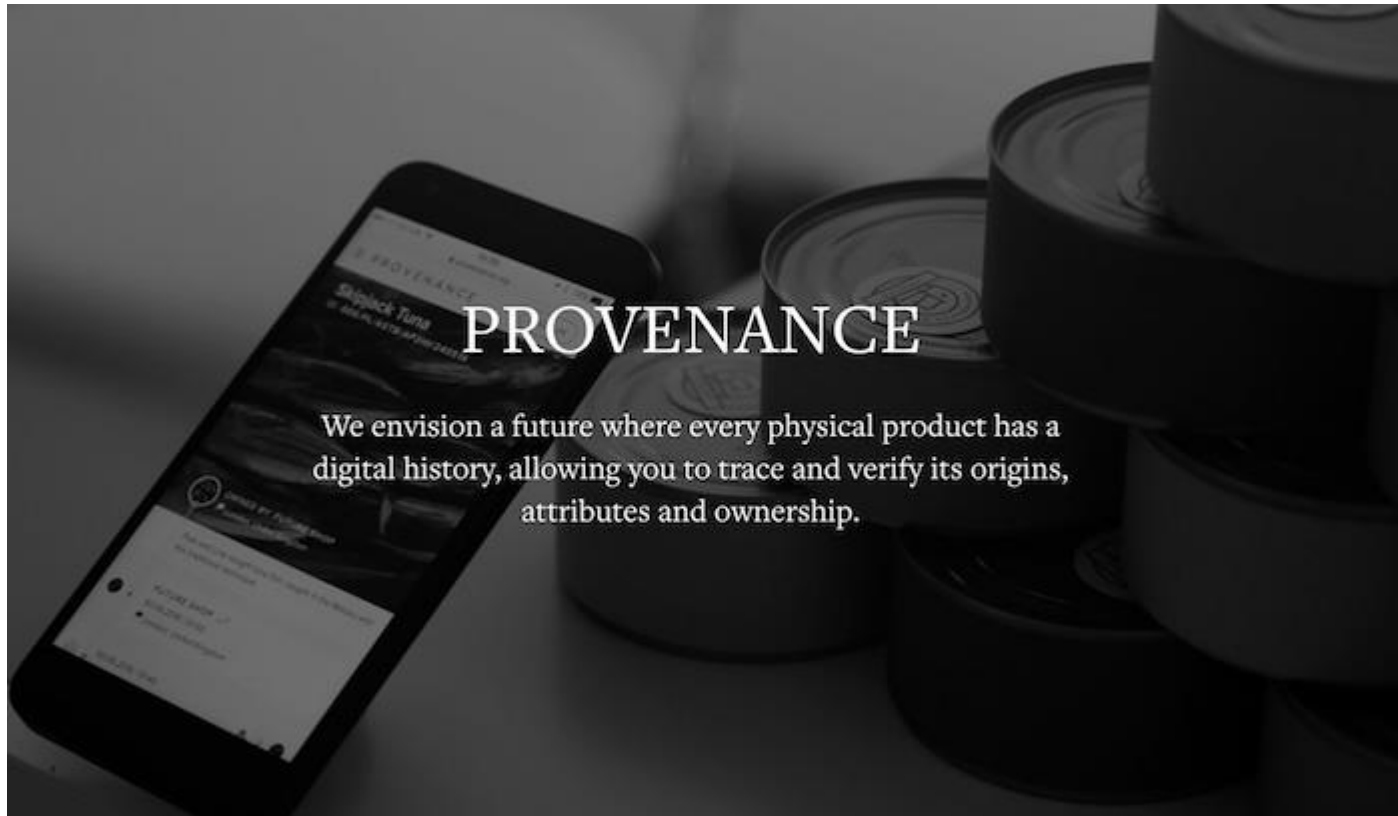


Slock.it | @SlockItProject

# Example 2: Transparent Voting



## Example 3: Transparent Asset Tracking



Provenance.org | @ProvenanceHQ



# Opportunities



# How Do I Get Started?

## Opportunities in...

- Hardware: drones, IoT, identity
- Software: every programming language
- Networking/Backend: gossip protocols, architecture
- Research: theoretical models, consensus protocol research
- Legal: legality of blockchain based assets

## Getting Started

- Research blockchains and join some open source projects
- Feel free to talk to me for any questions or resources 😊

# Women in Blockchain

“The Women in Blockchain Organization seeks to provide safe spaces for women-identifying technologists, academics, professionals, coders, designers, and anyone interested to share their experiences and knowledge of blockchain technology. Our goal is to provide the space and resources for our community members to connect, learn, and grow. ”

**Web:** [womeninblockchain.io](http://womeninblockchain.io)

**Twitter:** @WBlockchain

**Facebook:** [facebook.com/womeninblockchain](https://facebook.com/womeninblockchain)



# From a Woman Blockchainer

“Basically every major industry in the world right now is trying their hand at blockchaining. Women and people of color have an incredible amount to bring to conversations about building technology and have great skills to lend in building cool, and hopefully better, tech. In my view, blockchain isn’t just about building cool shit (though that’s a big part and not to be discounted cause it’s also fun), but has the potential to help us demand a more equitable and transparent world.”

**Web:** [womeninblockchain.io](http://womeninblockchain.io)

**Twitter:** @WBlockchain

**Facebook:** [facebook.com/womeninblockchain](https://facebook.com/womeninblockchain)

# Thank you

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