

Blockchain: Open Source Business Models

IEEE UK & IRELAND WEBINAR

Dr Trevor Clohessy

Department of Enterprise and Technology

September 4th 2020



My Bio

Dr Trevor Clohessy

- Lecturer
- Researcher
- LGFA Coach
- Blockchain Advocate



<https://trevorclohessy.wordpress.com/>

BLOCKCHAIN THE BUSINESS PERSPECTIVE

Blockchain, the technology which underpins the Bitcoin cryptocurrency, is a versatile beast. The technology's potential business use applications go beyond electronic payment system functionality.

Blockchain: The Business Perspective provides a hand-on introduction to blockchain technologies. By the end of chapter 1, you will understand the abstract nature of blockchain, outline the positives and negatives of blockchain technologies, be able to discuss the characteristics of blockchain technologies and differentiate the nuances between permissionless (public) and permissioned (private) blockchains.

The chapters include real-world case studies with content that is suitable for higher education students and lecturers, chief information officers wanting insights on blockchain solutions, business people interested in migrating to blockchain technologies and information technology professionals seeking information and knowledge about blockchain fundamentals. You will learn specifics about blockchain characteristics, smart contracts, tokenization, GDPR, decentralized applications, business models and much more.

Novo Ray
Publishers

BLOCKCHAIN The Business Perspective

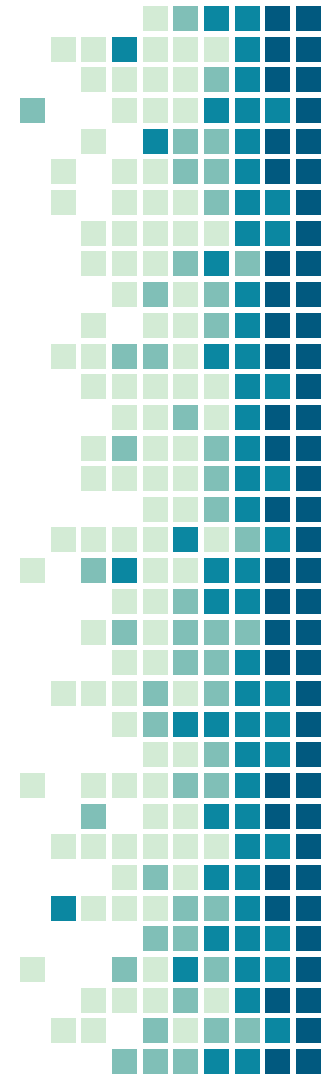
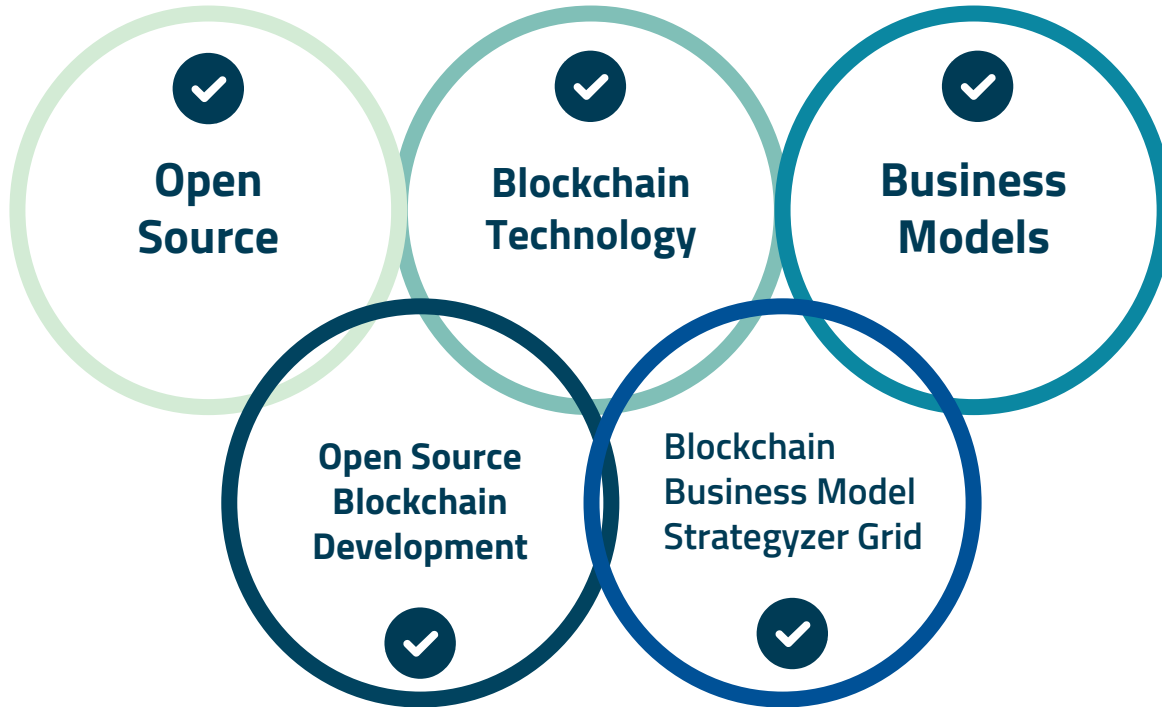
BLOCKCHAIN THE BUSINESS PERSPECTIVE

TREVOR CLOHESSY PHD
FIRST EDITION

Trevor Clohessy PhD, First Edition



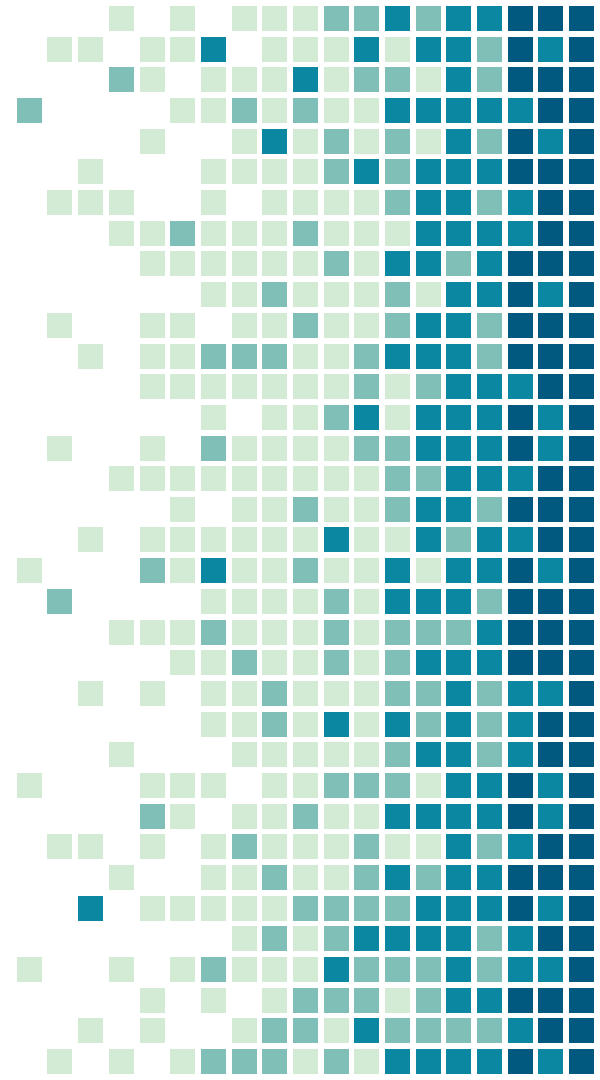
Webinar Structure



1.

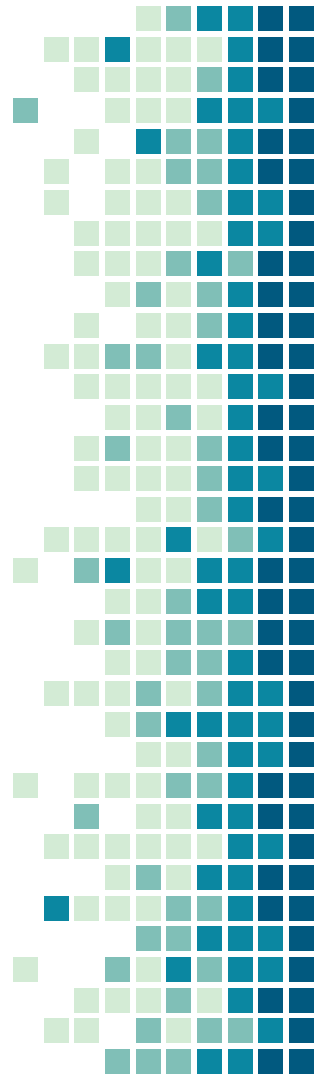
Open Source

Leaving the Cathedral and Embrace the Bazaar



Open Source

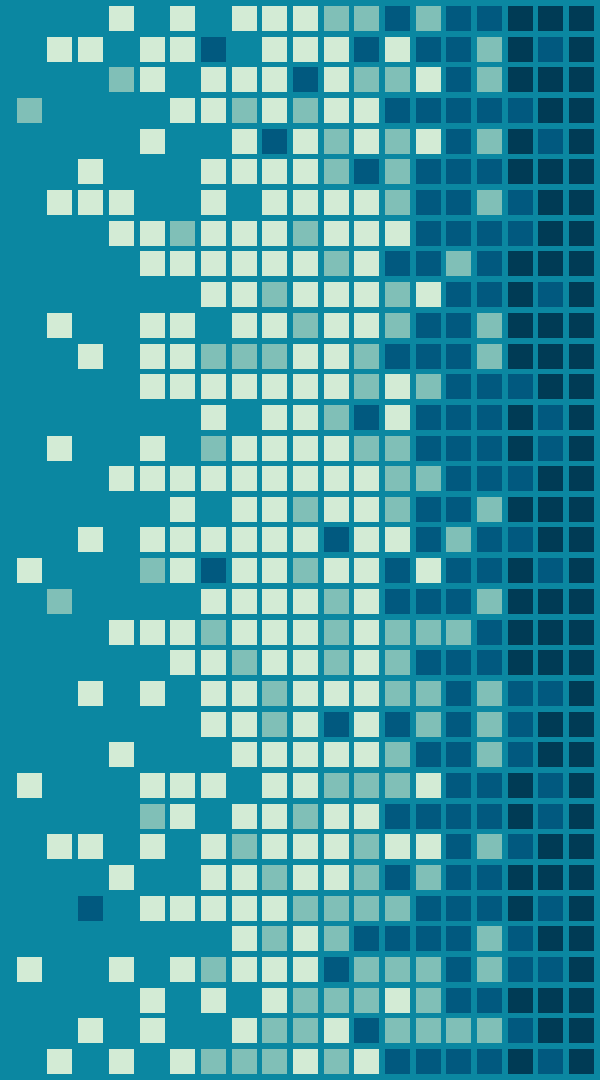
- **Open source** describes software that comes with permission to use, copy and distribute, either as is or with modifications, and that may be offered either free or with a charge. The source code must be made available.
- Open-source software is used within mission-critical IT workloads by over **90%** of the IT organizations worldwide, whether they are aware of it or not.



“ *Treating your users as co-developers is your least-hassle route to rapid code improvement and effective debugging.* ”

Eric S. Raymond

Author: *The Cathedral and the Bazaar*



Linus's Law

Cathedral View



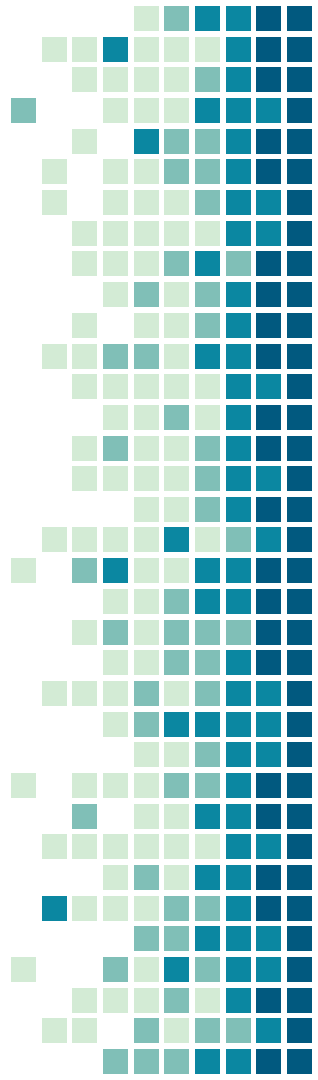
Bazaar View



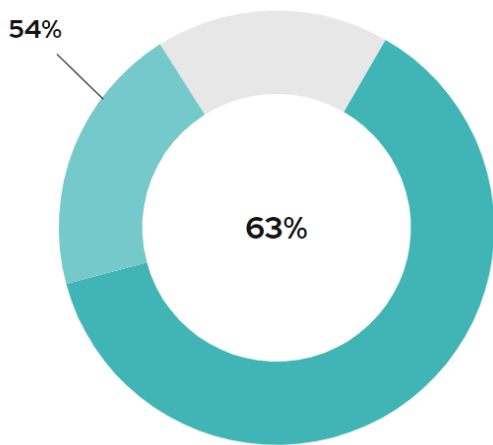
Open Source Business Model Advantages

- Roadmap Alignment
- Innovation
- Flexibility
- Cost savings
- Interoperability/Integration

“ Open source is the dominant software model for open innovation efforts in the new digital economy.

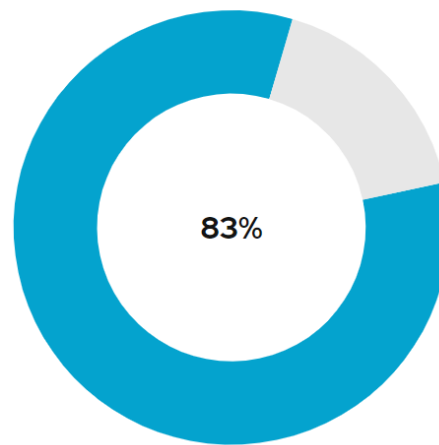


Hybrid cloud architectures + enterprise open source enable digital transformation

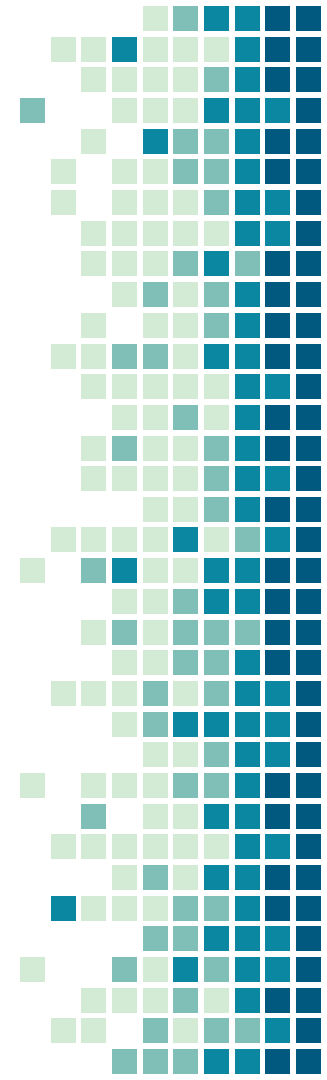


● 63% of IT leaders have a hybrid cloud infrastructure today.

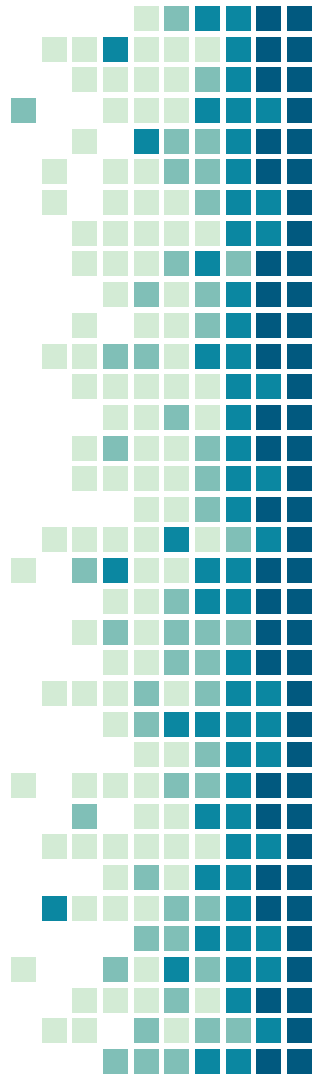
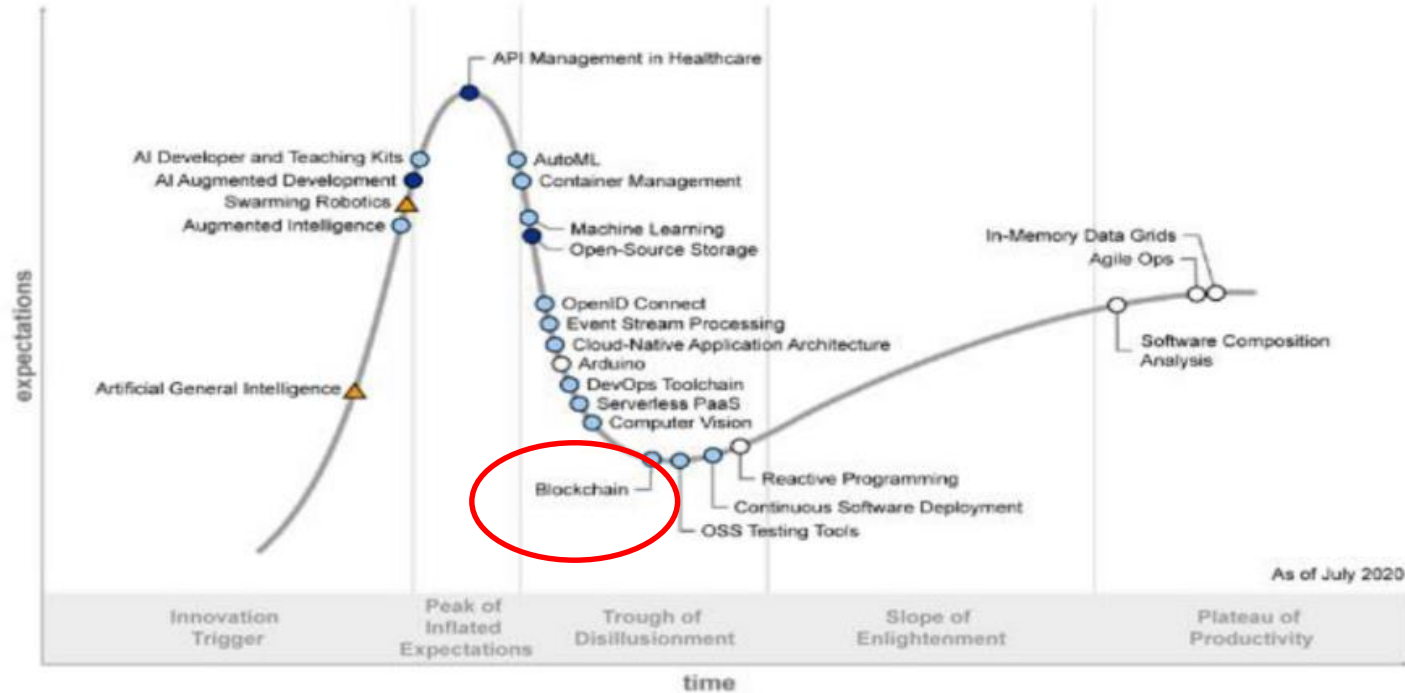
● Among those who don't, 54% plan to have one within the next 24 months.



83% of IT leaders say enterprise open source has been instrumental in their organization's ability to take advantage of cloud architectures.

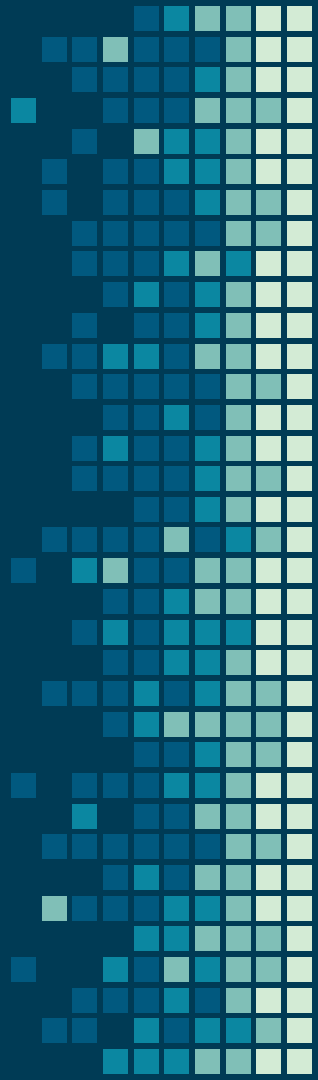


Hype Cycle for Open-Source Software, 2020



2. Blockchain Technology

More than blocks and chains



Blockchain Defined

Blockchain

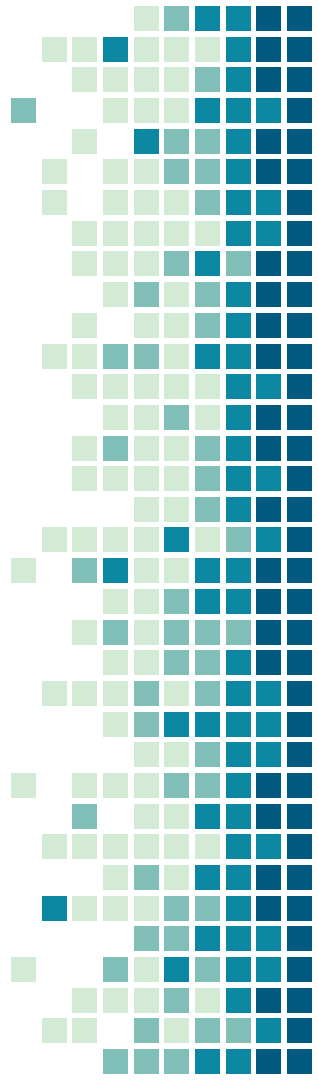
A shared ledger technology allowing any participant in the business network to see the system of record (Digital ledger)

Digital ledgers

Ledgers are important. Ledgers are the system of record for businesses and record assets transfer between parties

Benefits

- Decentralization
- Immutability
- Audibility
- Cryptography
- Consensus Protocol
- Resiliency /Antifragility
- Private or Public
- Smart Contract

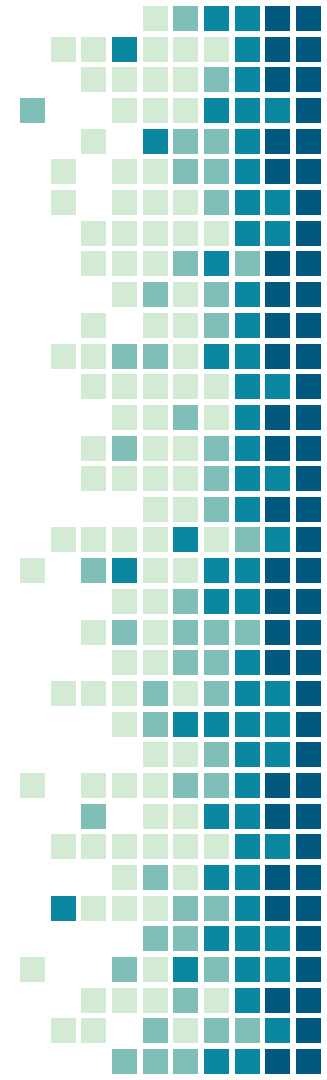
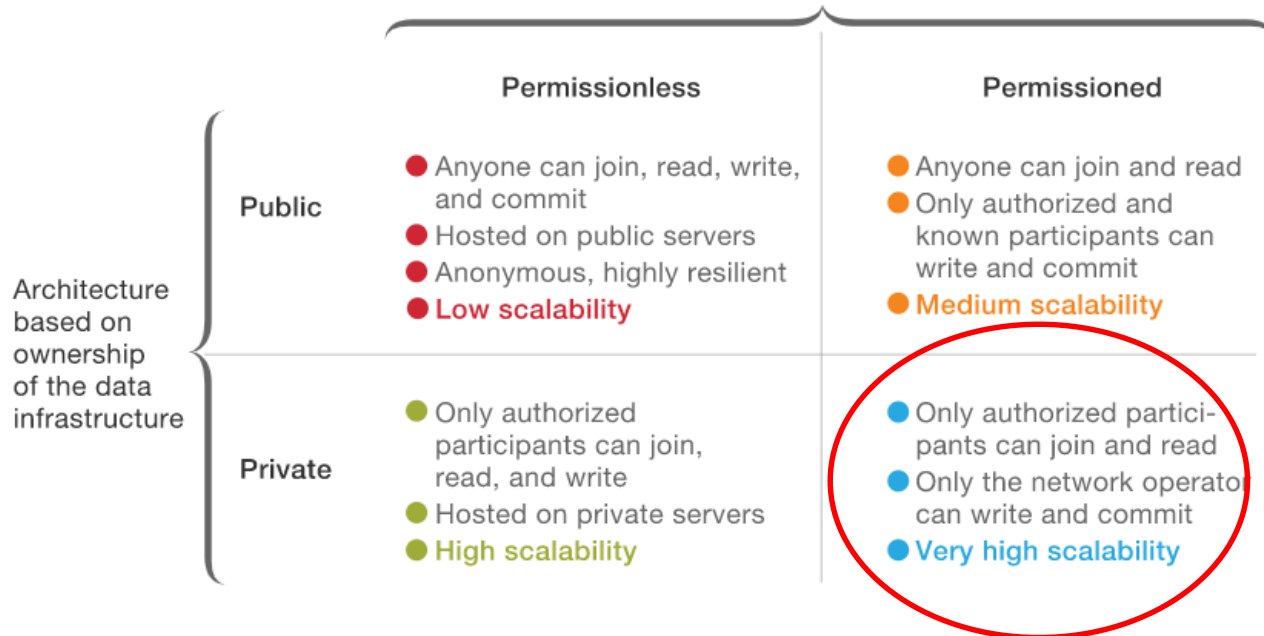


Private or Public

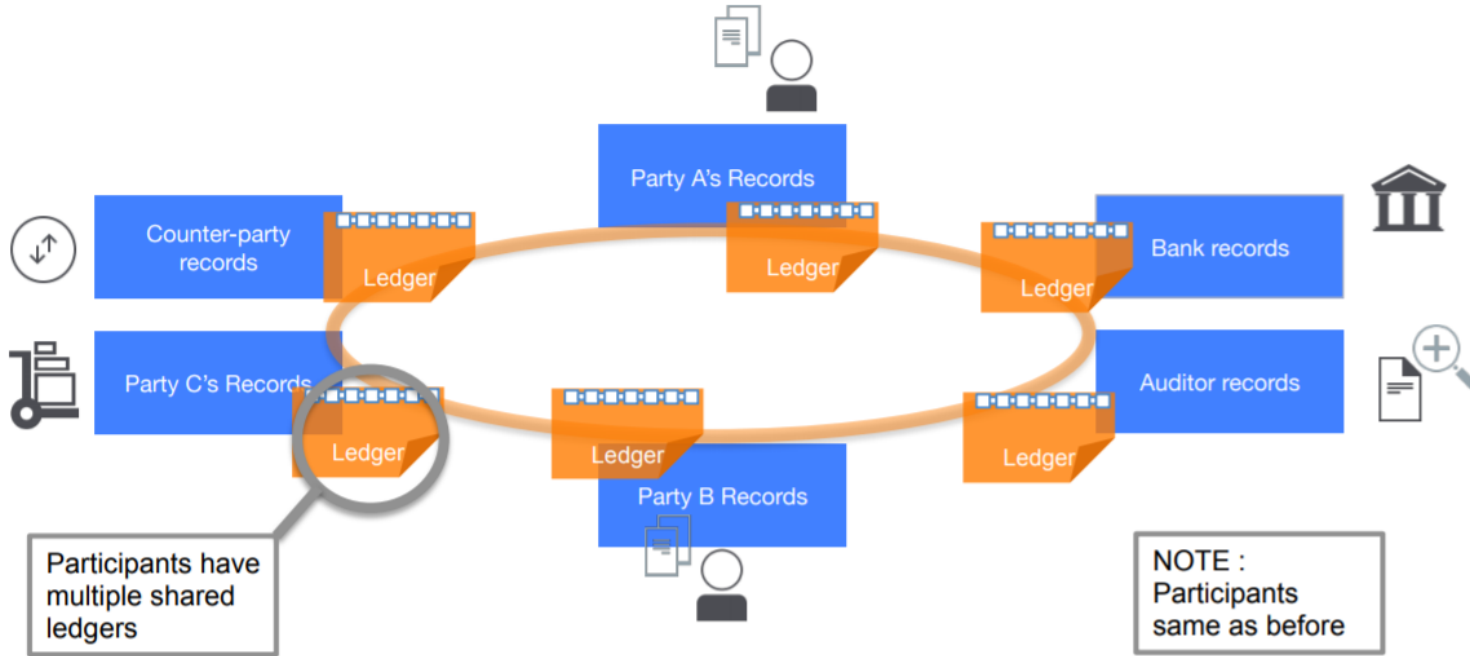
Most commercial blockchain will use private, permissioned architecture to optimize network openness and scalability.

Blockchain-architecture options

Architecture based on read, write, or commit permissions granted to the participants



Solution – a permissioned, replicated, shared ledger



Consensus, provenance, immutability, finality

Smart Contracts

Smart contracts are accounts that are not controlled by humans, but are controlled by computer software code/protocols, enforcing the terms & conditions of a contract without the need for a third-party.



Smart Contract Account Properties

ACCOUNT

The
Economist

OCTOBER 21-27 NOVEMBER 4TH 2015

economist.com

007 and the spectre of Britain's past

Turkey votes to the sound of bombs

Those ever-creative accountants

America takes the fight to IS

Coywolves: the new superpredator

The trust machine

How the technology behind bitcoin
could change the world



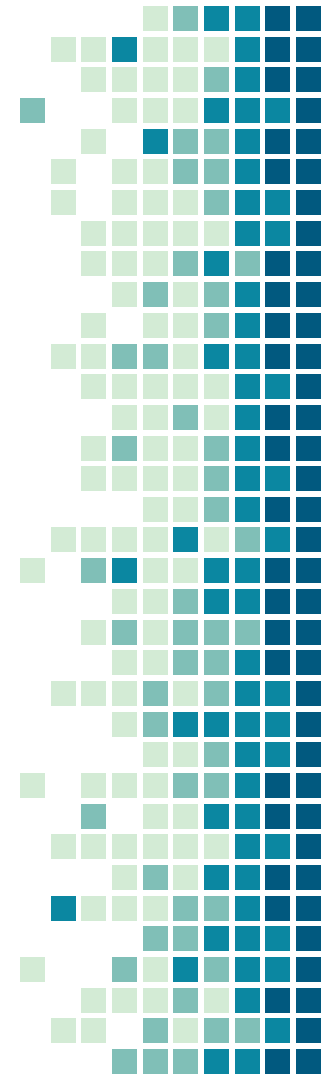
Reimagining Trust

“ What the internet did for communications, blockchain will do for trusted transactions

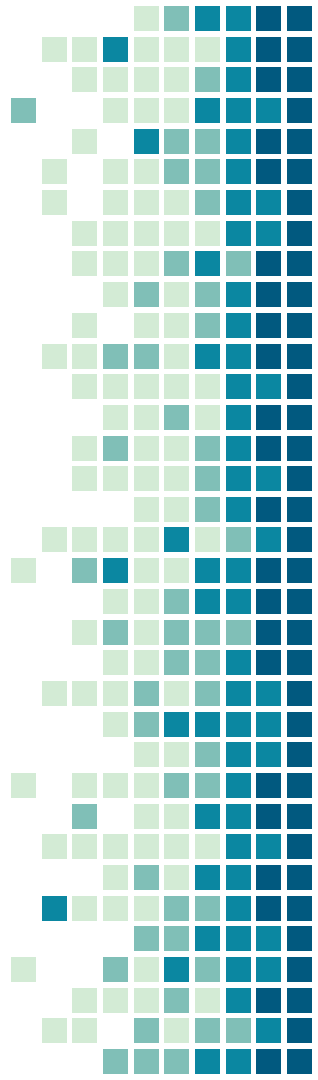
Ginni Rometty, IBM CEO



Blockchain Evolution



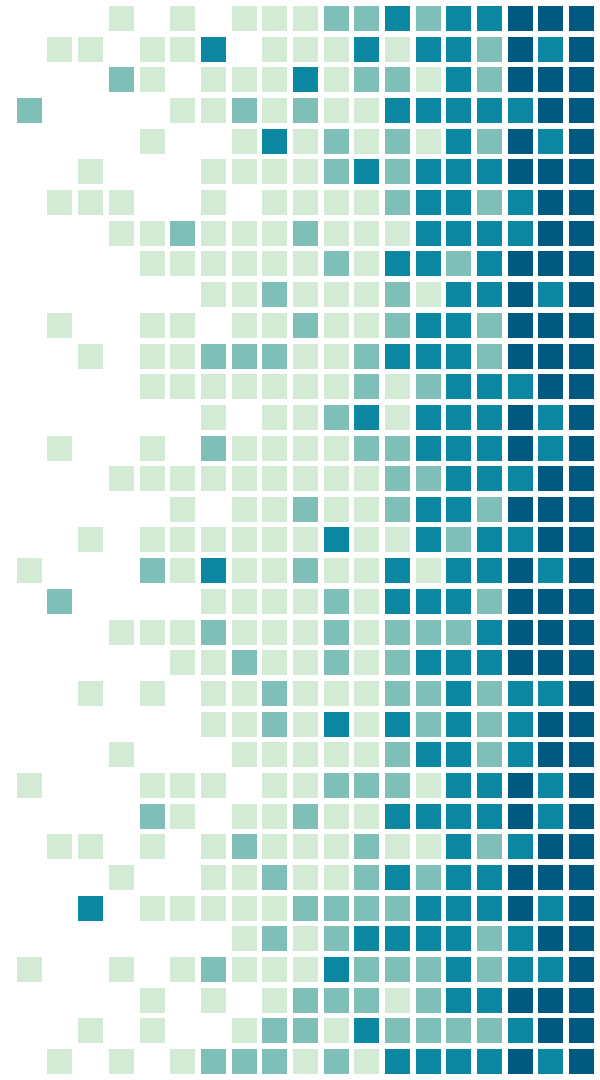
Hype Cycle for Blockchain Business, 2019



3.

Business Models

More than just a value proposition



Business Model Defined

Harvard
Business
Review

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BUSINESS MODELS

What Is a Business Model?

by Andrea Ovans

January 23, 2015

Summary Save Share ²⁷ Comment Print \$8.95 Buy Copies

WHAT TO READ NEXT



Are You Using Your Data, or Just Collecting It?

//

A business model is a **Plan** which details how you will make **Money**.

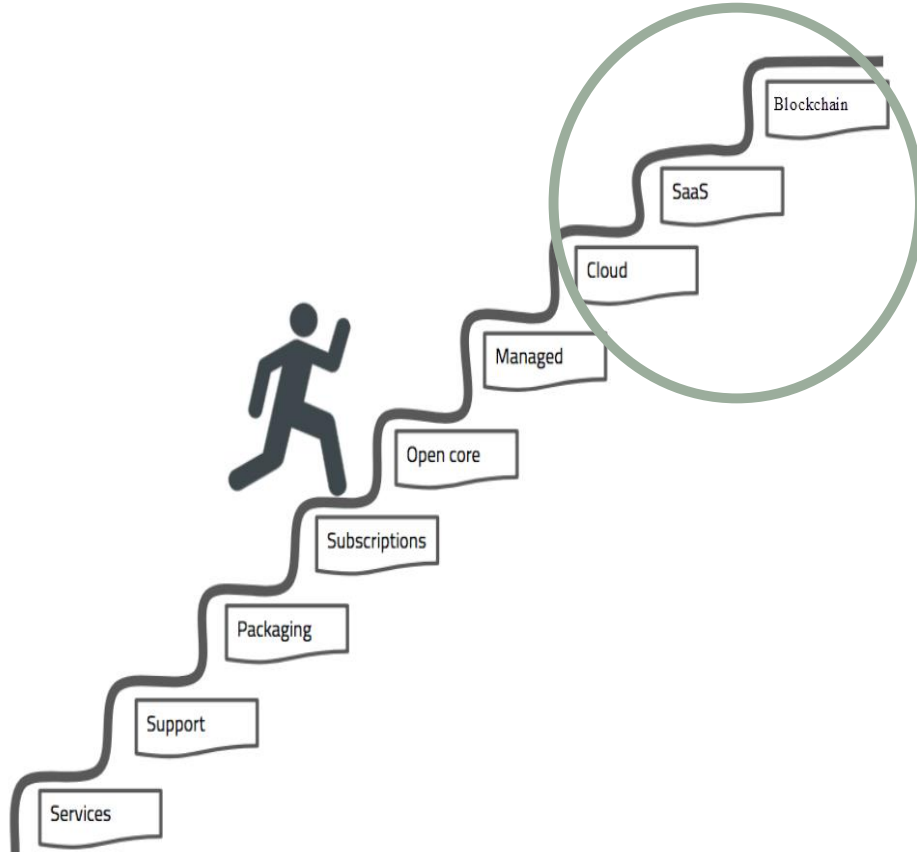
Business Model Plans

<p>Problem</p> <p>What problem are you trying to solve for your users?</p> <p><u>Open source considerations</u> Why is the solution open source?</p> <ul style="list-style-type: none"> • To provide free offering? • To build up community? • Other reasons? 	<p>Solution</p> <p>What is the solution?</p> <p><u>Open source considerations</u> Independent versus Foundation? Which License?</p> <hr/> <p>Activities</p> <p>What are the inbound and outbound activities you will carry out to encourage engagement with the project (e.g. conferences, blog posts, social media etc.)?</p>	<p>Unique Value Proposition</p> <p>What is the promise of your project?</p> <p>Open source considerations Does the fact that it is open source contribute to the uniqueness of your offering? How?</p>	<p>Community Relationships</p> <p>What are strategic relationships that are critical to building up your community?</p> <ul style="list-style-type: none"> • Contributors • Project evangelists • Thought leaders • Integrations with other projects <hr/> <p>Channels</p> <p>Through which channels will you reach your users?</p> <ul style="list-style-type: none"> • Collaboration partners who will distribute/expose project • Web, Social media etc. • Face to face (meetups, conferences etc.) 	<p>Users</p> <p>Describe a typical user of your project</p> <p><u>Contributors</u> Who are users that are most likely to contribute to your project – Super Users?</p>
<p>Cost and Resources</p> <p>What human resources are required? Examples:</p> <ul style="list-style-type: none"> • Project Maintainers (responsible for code governance etc.) • Paid engineers (core team to initiate the project or continue contributing) • Community Manager • Evangelist • Contributors to Community (not paid) <p>Other costs? Examples:</p> <ul style="list-style-type: none"> • Infrastructure/services • marketing 		<p>Adoption Criteria</p> <p>How do you measure success of the project? Examples:</p> <ul style="list-style-type: none"> • Size of community (number of issues/pull requests/stars etc.) • Number of contributors • Contributions (scale, variety, etc.) • Usage • Conversion rate (if your business model includes upgrade to enterprise version) 		

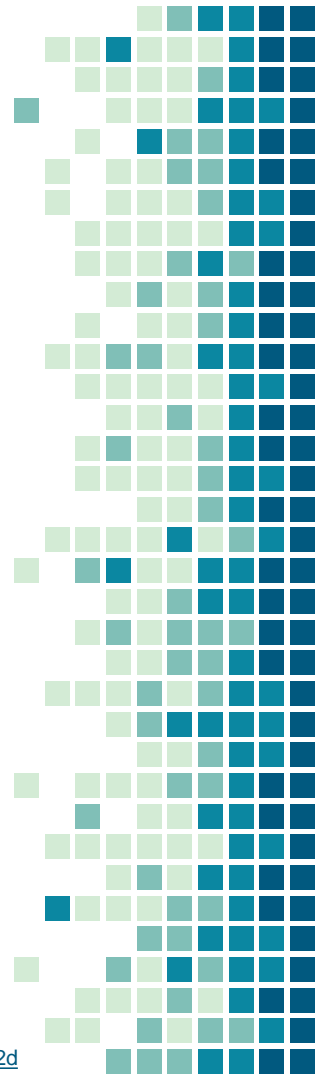
Open Source Canvas is adapted from the [Business Model Canvas](#) and the [Lean Canvas](#) and is licensed under [Attribution-ShareAlike 4.0 International](#)



Business Models in the Digital Era



Source: Medium: <https://medium.com/open-consensus/3-oss-business-model-progressions-dafd5837f2d>



Blockchain Business Models Challenges

What's **accelerating** blockchain adoption?

#1 Decentralized Control

#2 Trust

#3 New Business Models

#4 Transparency

#5 Data Resiliency

What's **hindering** blockchain adoption?

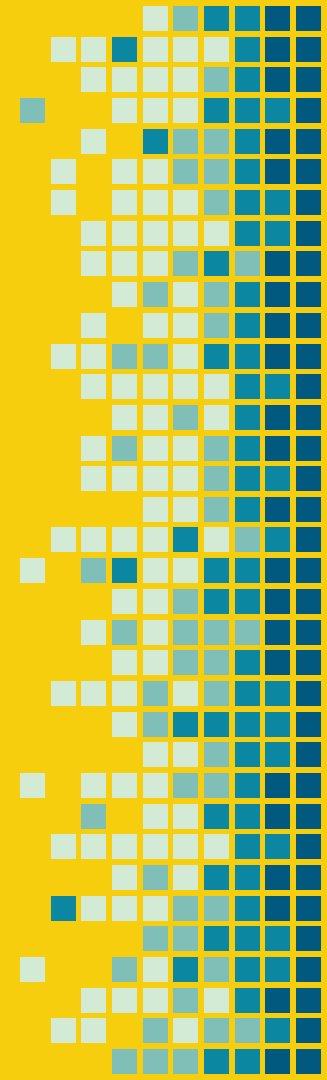
Scalability #1

Regulation #2

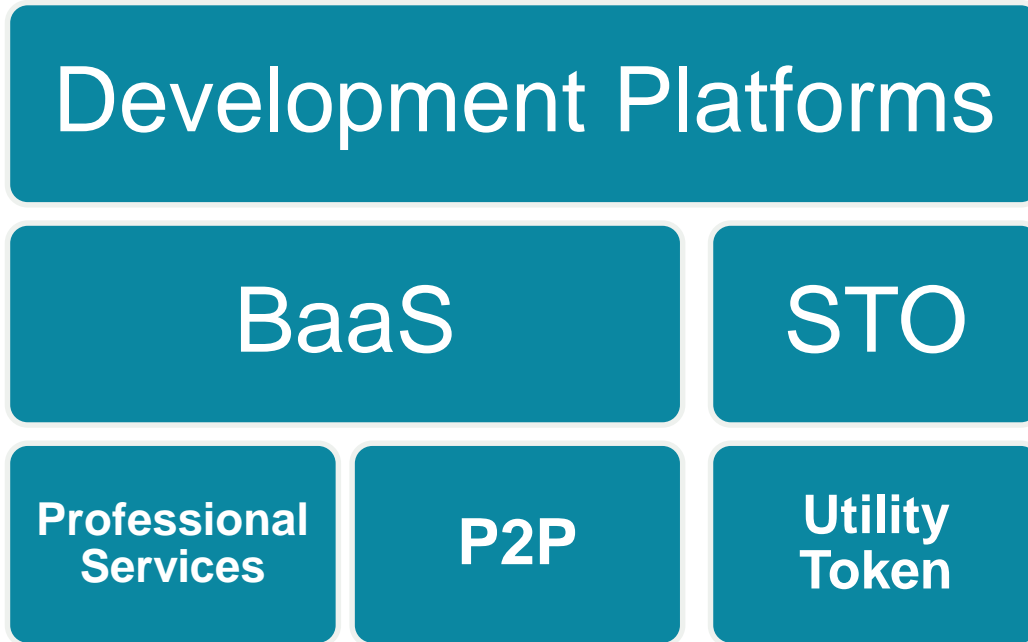
Unproven Value #3

Stage of Development #4

Speculation #5

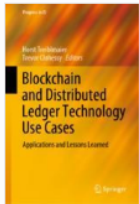


Blockchain Open Source Business Models



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Open source is an ethos, not just a license. The potential for blockchain to become a new open-standard protocol for trusted records, identity, and transactions cannot be simply dismissed.



[Blockchain and Distributed Ledger Technology Use Cases](#) pp 51-68 | [Cite as](#)

What's in the Box? Combating Counterfeit Medications in Pharmaceutical Supply Chains with Blockchain Vigilant Information Systems

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Chapter

First Online: 06 June 2020

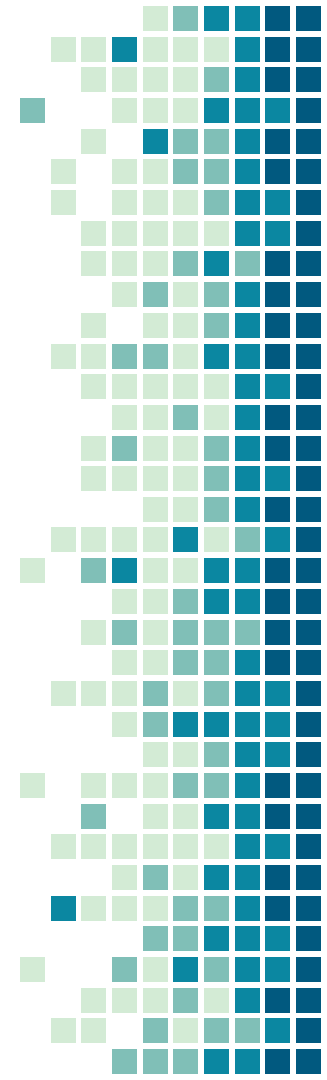
260

Downloads

Part of the [Progress in IS](#) book series (PROIS)

Abstract

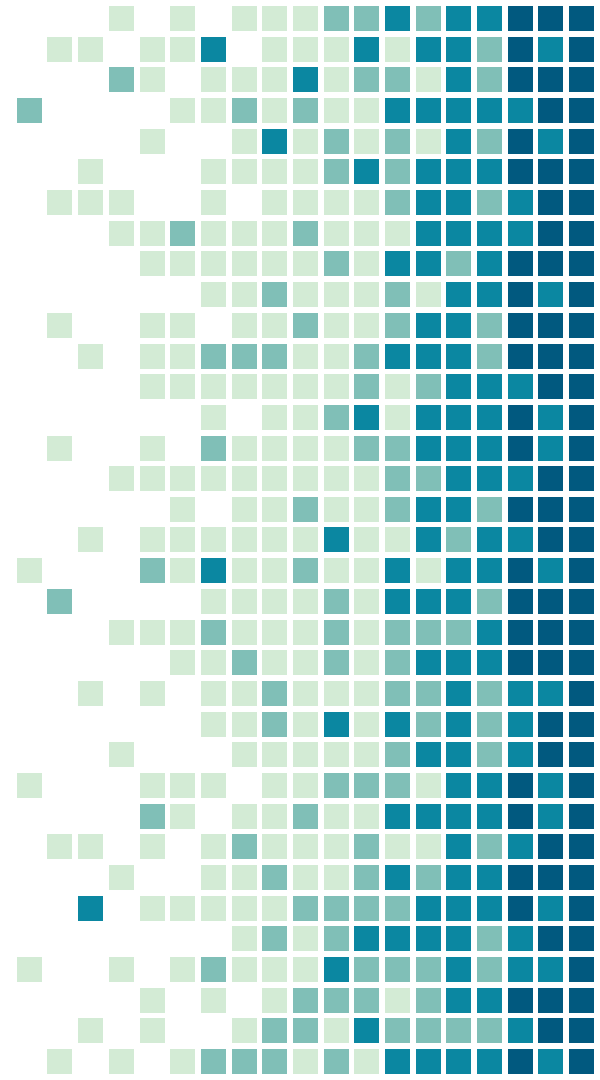
Counterfeit medications, medication overprescribing and a slow antiquated process encompassed in recalling batches of medications represent serious supply chain concerns for the pharmaceutical industry. Blockchain, the technology underpinning the Bitcoin



4.

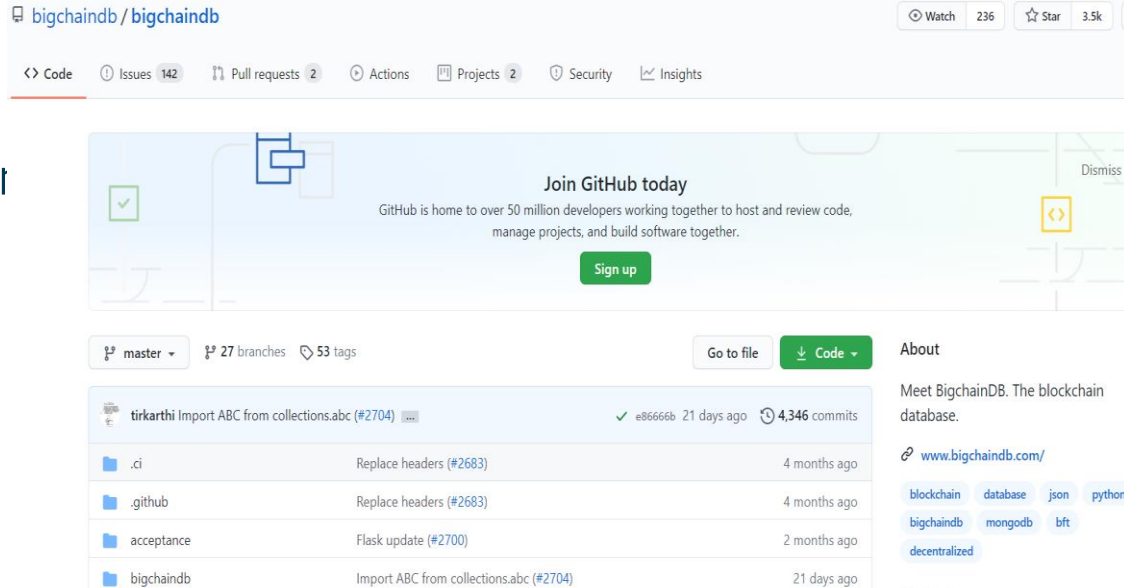
Open Source Development Platforms

Open source isn't counterculture anymore.
It's the establishment



BigchainDB

- BigchainDB is an open source distributed ledger system that is designed for storing large data sets and enabling its developers to deploy various blockchain Proofs-of-Concepts and applications.
- The important thing about BigchainDB is that it's based on a production-ready database.



The screenshot shows the GitHub repository page for BigchainDB. At the top, the repository name 'bigchaindb / bigchaindb' is displayed, along with statistics: 236 Watchers, 3.5k Stars, and 3.5k Forks. Below this, navigation links for Code, Issues (142), Pull requests (2), Actions, Projects (2), Security, and Insights are visible. A prominent banner encourages users to 'Join GitHub today', stating that GitHub is home to over 50 million developers and includes a 'Sign up' button. Below the banner, the repository's current state is shown: 'master' branch, 27 branches, and 53 tags. A 'Go to file' button and a 'Code' button are present. The commit history table is partially visible, showing a commit by 'tirkarthi' titled 'Import ABC from collections.abc (#2704)' with commit hash 'e86666b' and '4,346 commits'.

Commit	Message	Age	Commits
tirkarthi	Import ABC from collections.abc (#2704)	21 days ago	4,346
	.ci	Replace headers (#2683)	4 months ago
	.github	Replace headers (#2683)	4 months ago
	acceptance	Flask update (#2700)	2 months ago
	bigchaindb	Import ABC from collections.abc (#2704)	21 days ago

BigchainDB

How BigchainDB is Helping

Using blockchain technology provided by BigchainDB, it's possible to build a database of products and their entire history so that provenance, authenticity and ownership can be verified.

BigchainDB underpins the Digital Product Memory in several ways:

- Provides a globally accessible database to store products and their digital histories
- High capacity and throughput for millions of sensors and products
- Data immutability that brings trust and auditability to the records
- Query technology that enables quick retrieval product histories
- Supports micropayment channels to enable machine-to-machine commerce

[Home](#) > [New](#) >

Corda Enterprise on Corda Testnet

R3



Corda Enterprise on Corda Testnet Save for later

R3

[Create](#)[Overview](#) [Plans](#)

With deployment on Microsoft Azure, developers can quickly and easily deploy Corda Enterprise nodes using the latest cloud templates and test applications on a network of Corda nodes through access to Corda Testnet. Corda enables the direct exchange of assets, unique privacy controls and proven scalability. Built for business, the platform delivers mission-critical features for enterprise IT environments. Already powering live production networks in the highly regulated financial services industry, industries ranging from healthcare and government to aviation and telecoms, are now using Corda for their emerging blockchain initiatives. Key features of Corda Enterprise include:

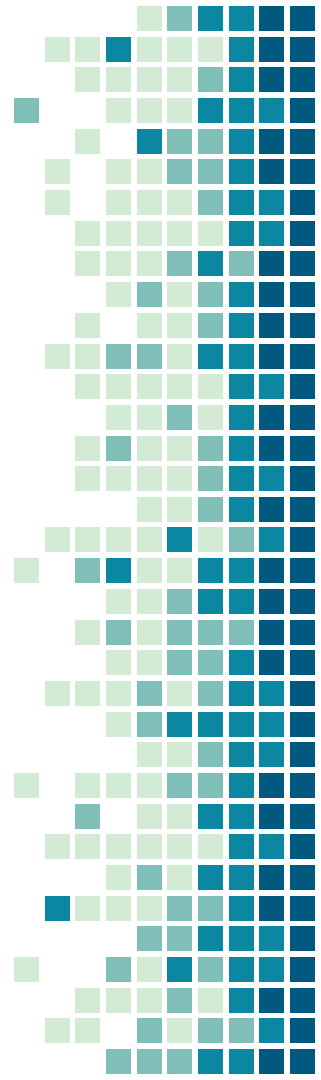
- Blockchain Application firewall - Enables Corda Enterprise nodes to be deployed inside corporate data centers while retaining the ability to communicate securely with other nodes, anywhere.
- Azure SQL and Oracle databases – Facilitates seamless integration with industry-standard enterprise databases.
- Compatibility - Cross-distribution and cross-version wire compatibility, together with the ability to operate mixed-version networks and Corda nodes inside a corporate firewall.
- Corda Network - Complimentary access to the world's first universally interoperable blockchain network, supporting multiple CorDapps on the same network, enabled by Corda's privacy model.
- Optimized for real-world IT environments - predictable release schedules, governance, performance and availability monitoring, enhanced security, disaster-recovery and high-performance modes.

With fast deployment on the cloud, you also receive access to Corda Testnet, the sandbox version of the Corda Network, a globally interconnected and interoperable set of Corda nodes that can transact flawlessly with each other. Testnet is user friendly, with a rapid onboarding process, allowing you to begin building, testing, and deploying your CorDapps today.

Corda Enterprise may be used for evaluation purposes within the boundaries defined by the Terms of use. Any use beyond this (e.g. in production deployments) requires a commercial license. Please contact sales@r3.com for more information.

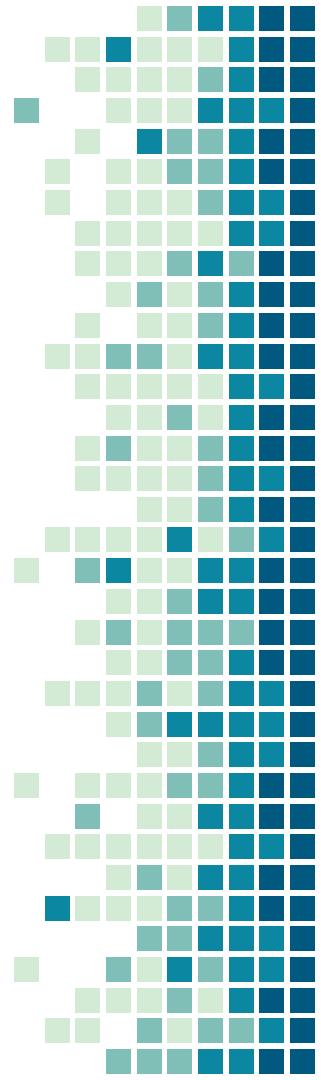
Hyperledger – Open Source Blockchain

- Think of blockchain as an operating system for marketplaces, data-sharing networks, micro-currencies, and decentralized digital communities. It has the potential to vastly reduce the cost and complexity of getting things done in the real world.
- Hyperledger firmly believe that only an open source, collaborative software development approach can ensure the transparency, longevity, interoperability and support required to bring blockchain technologies forward to mainstream commercial adoption. (e.g. communities of software developers building blockchain frameworks and platforms).



Hyperledger – Goals

1. Create enterprise grade, open source, distributed ledger frameworks and code bases to support business transactions
2. Provide neutral, open, and community-driven infrastructure supported by technical and business governance
3. Build technical communities to develop blockchain and shared ledger POCs, use cases, field trails and deployments
4. Educate the public about the market opportunity for blockchain technology





Distributed Ledgers



Java-based
Ethereum client



Permissionable smart
contract machine (EVM)



Enterprise-grade DLT
with privacy support



Decentralized identity



Mobile application focus



Permissioned & permissionless
support; EVM transaction family

Libraries



Tools



Domain-Specific



Nutrition **Ingredients** **Allergens** **Track & Trace** **More Info**

Product Journey Overview

Your Scan

This item has been scanned 1 times 2018-06-10 15:46



Roast

Shanghai, China 2018-05-04 2:35



Harvest

Peru & China

Nutrition **Ingredients** **Allergens** **Track & Trace** **More Info**

Harvest Details - Peru - 2017/8

Av. Perú 430, La Merced, Peru

Shipments

To: Hong Kong, China 2017-10-29

:

Shanghai Customs: 118000002274937001
 Ship Name: NYK LIBRA 710
 Package Weight: 886 kg

From: Callao, Peru 2017-9-14

Certified Farms

Cooperativa Agraria Cafetalera La Florida

Av. Perú N 430 - 432
 Pampa del Carmen
 Chanchamayo Chanchamayo, Peru

EcoCert (CAC La Florida)
 Valid from 2018-05-12 to 2018-05-12

MD5 Hash:
 a70ca900075662fcf31a952869dfe495

[Certifier Website](#)

Please visit ecocert.com to further validate the attached certificate.

Bird Friendly Certification
 Valid from 2018-05-12 to 2018-05-12

MD5 Hash:
 e35023ade102deff459afed397039f93

[Certifier Website](#)

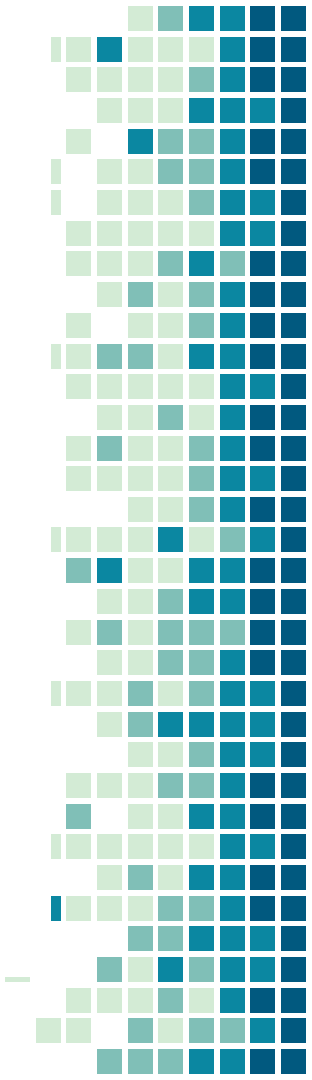
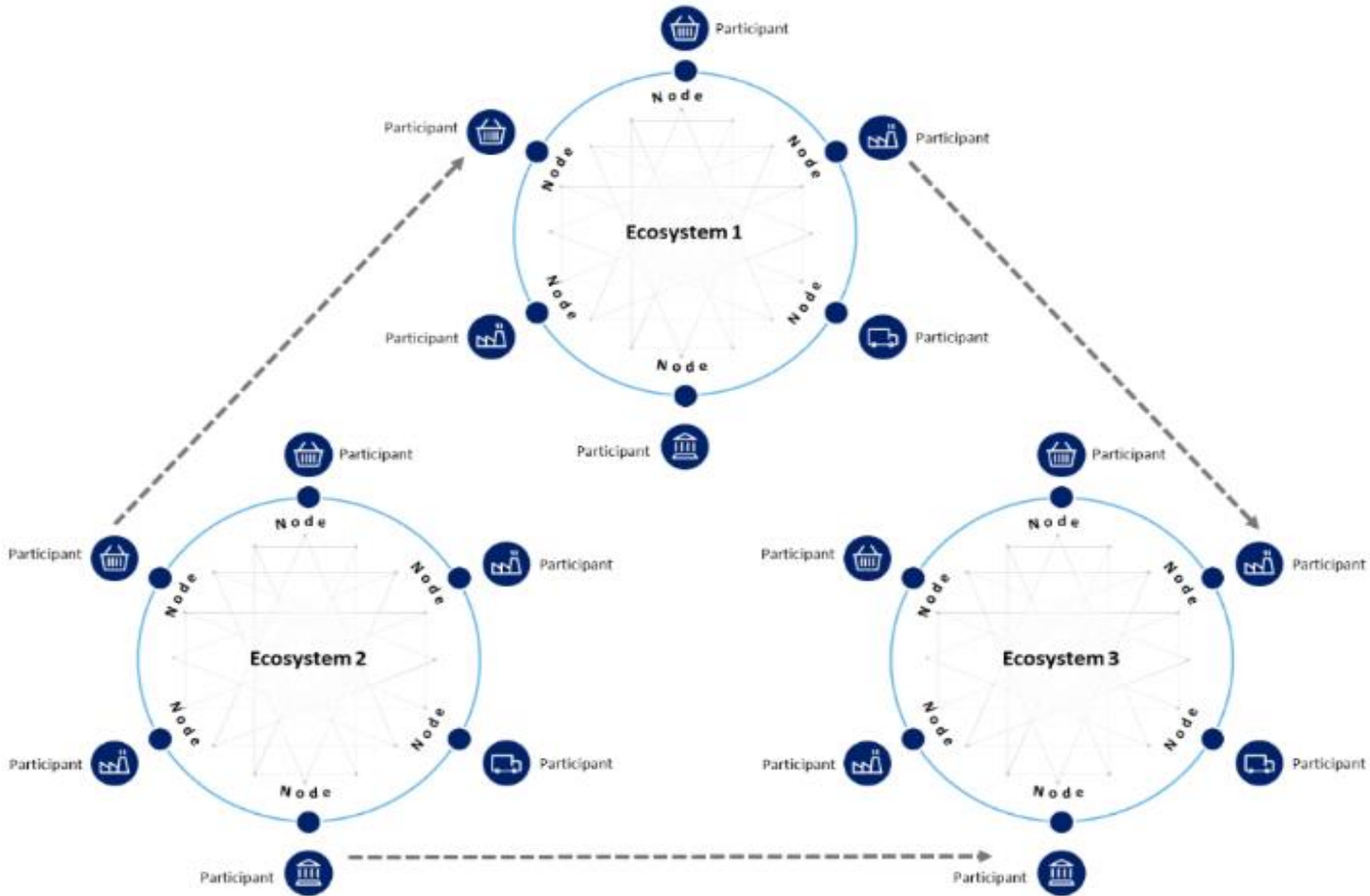
Please visit nationalzoo.si.edu to further validate the attached

Tracking Info

Link to Cert

Blockchain Hash

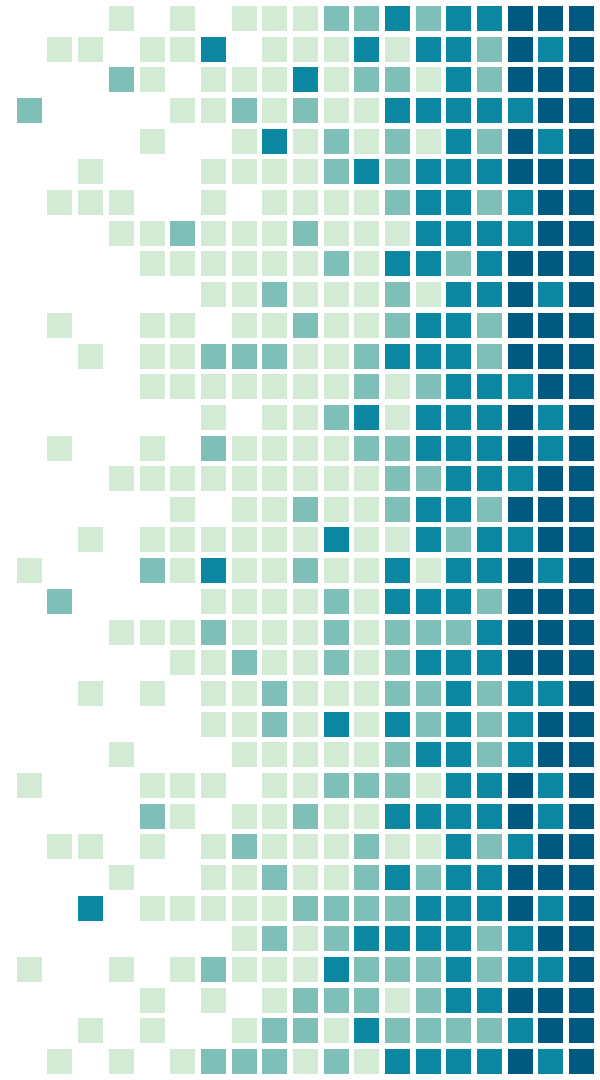




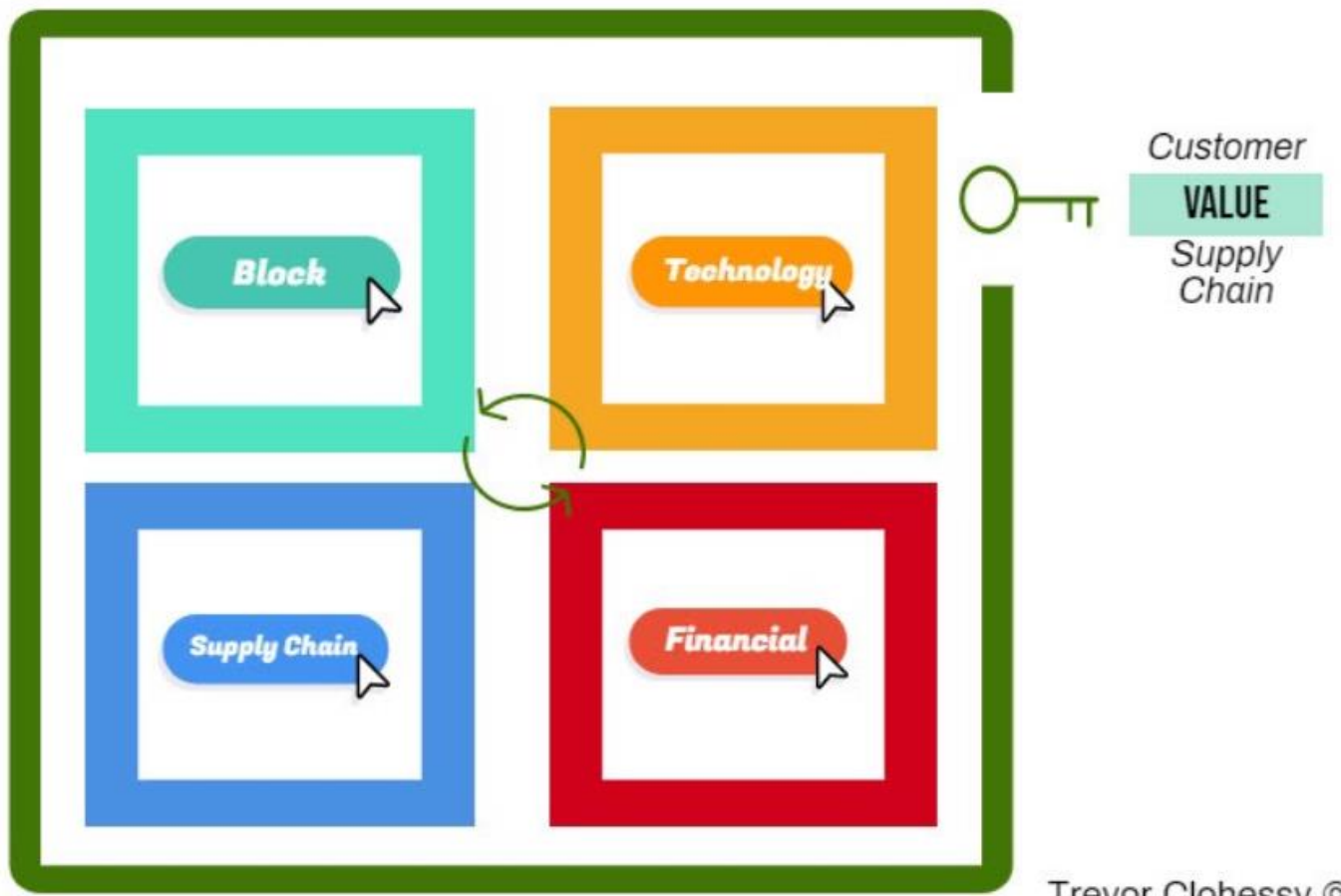
5.

Blockchain Business Model Strategyzer Grid

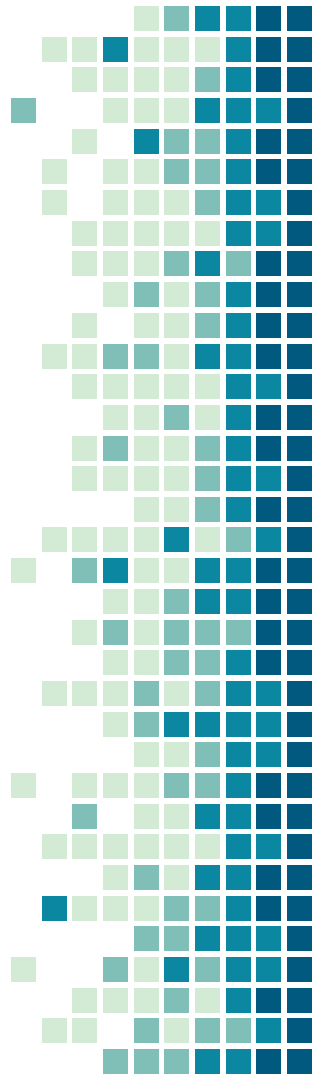
A next generation blockchain business
modelling tool



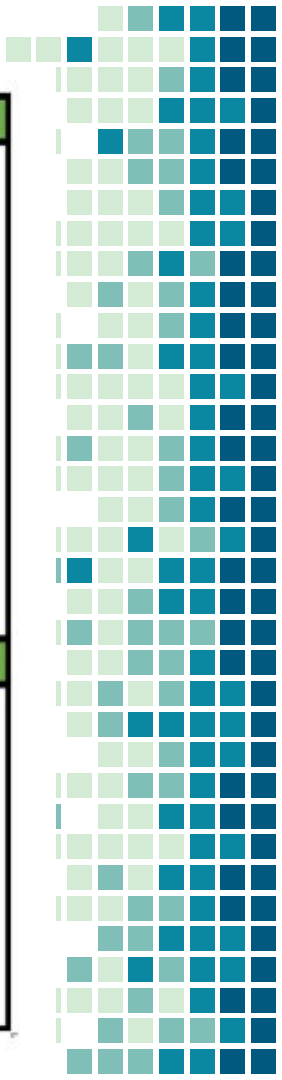
Blockchain Business Model Strategizer Grid

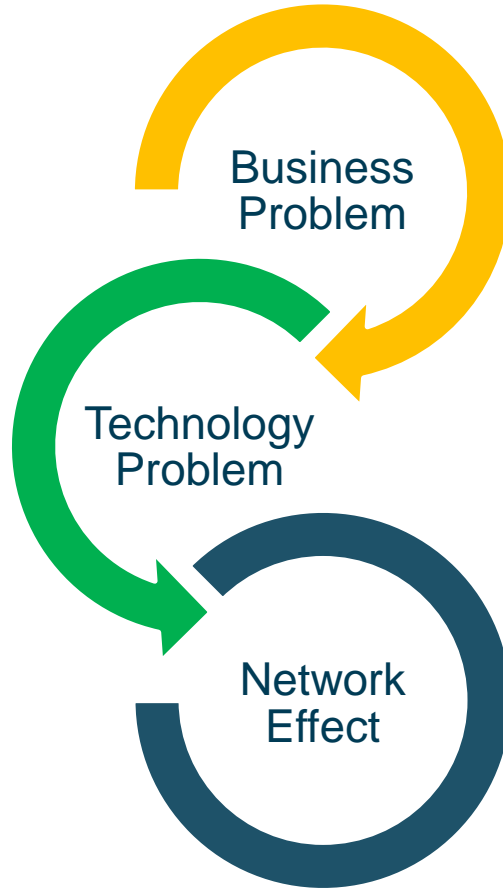


Trevor Clohessy ©



Block Grid	Technology Grid
<p>"Remove this text and add yours"</p> <p>Value Proposition: What value do you deliver to the customer? What does your market research say (e.g. SWOT)? How does your value proposition differ from your competitors?</p> <p>Customer Segments: Which one of our customer's problems are you helping to solve? What bundles of products and services are you offering to each customer segment? Which customer needs are you satisfying? How will you reach your customers?</p>	<p>"Remove this text and add yours"</p> <p>Infrastructure Configuration: *The blockchain characteristics table can be used to develop this grid further* What key technology resources does your value propositions require? What functionality do your customers require? What functionality do your supply chain partners require?</p> <p>Data Analytics Configuration: What data will you need to capture and analyse? How will you align business analytics with blockchain?</p> <p>Skills Configuration: What technological skills do you need to build, deploy, and maintain the technological domain.</p>
Supply Chain Grid	Financial Grid
<p>"Remove this text and add yours"</p> <p>Key partners: Who are your key collaborating supply chain partners? Will you actively involve 3rd parties/service providers?</p> <p>Value supply chain configuration: How is value configured along your supply chain? How will you deliver value to your customers and partners?</p> <p>Political, Economic, Social, Technological Risks: Are there any?</p>	<p>"Remove this text and add yours"</p> <p>Costs: What are the most important costs inherent in your business model? Which key resources/activities are most expensive?</p> <p>"Remove this text, and add start yours"</p> <p>Revenues: What types of revenue models will you use (e.g. freemium, pay per use, monthly or annual subscriptions)?</p>





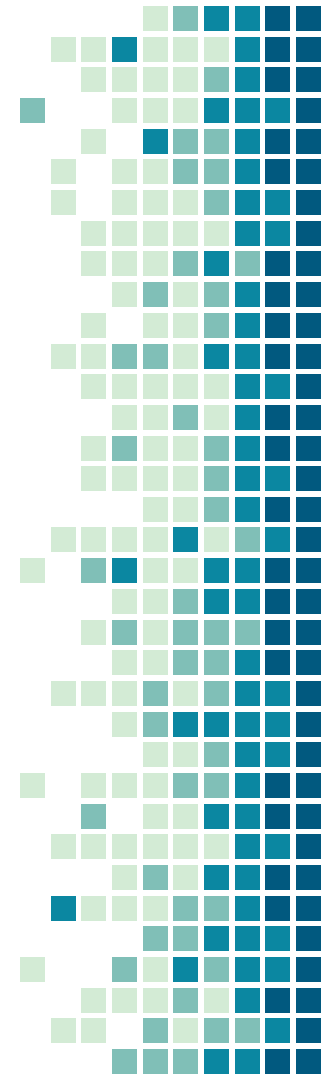
Rubric for Blockchain:

Do you need a Trustless
Blockchain System?



Common Blockchain BM Mistakes

- **Misunderstanding or misusing blockchain technology**
- **Assuming that current technology is ready for production use**
- **Confusing a limited, foundation-level protocol with a complete business solution**
- **Viewing blockchain technology purely as a database or storage mechanism**
- **Assuming interoperability standards between blockchain platforms exist**
- **Assuming that smart contract technology is a solved problem**
- **Ignoring governance issues for a peer-to-peer distributed network**



Sports Ledger SPSL

The first sports data analytics platform to leverage the power of Blockchain technology and Smart Contracts



Ended
PROFILE 71%
SPORTS

Visit Website

+ Watchlist No Documents



Interest Rank

Rank	24H	7D	1M
# 42	-25%	0%	5%

- Description
- Details
- Milestones
- Team members
- Achievements

Description

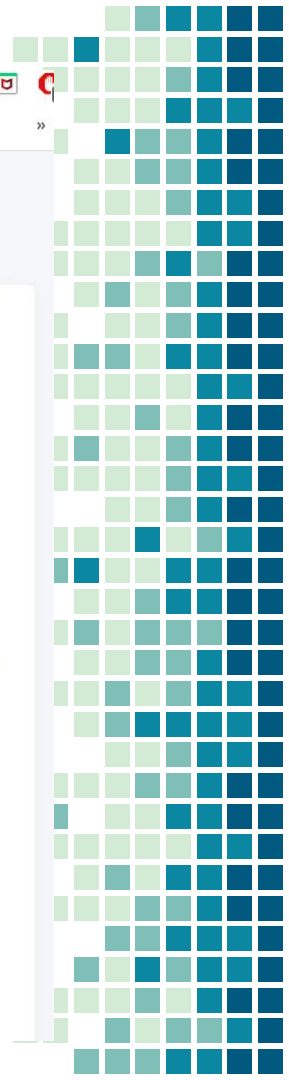
Sports Ledger - The first sports data analytics platform to leverage the power of Blockchain technology and Smart Contracts.

Artificial Intelligence embedded platform designed to learn, grow and adapt with the fast growth of sports data.

Building social sports communities where fans, professional athletes and clubs can interact and exchange information in a heartfelt manner.

Sports Ledger: a revolutionary platform that will empower a wave of innovation in the world of sports, allowing users to access an innovative, data-driven platform that utilizes the latest advancements in Artificial Intelligence, Blockchain and Smart Contracts. The future of sports, providing access to a variety of services and rewarding users who contribute towards the success of the ecosystem.

Video



Block Grid

Value Proposition (VP):

- The first sports data analytics platform to leverage the power of Blockchain technology and Smart Contracts. Artificial Intelligence embedded platform designed to learn, grow and adapt with the fast growth of sports data

Customer Segments:

- Sports Clubs
- Fans
- Athletes
- Fitness Enthusiasts

Technology Grid

Technology, Data and Skills Configuration:

- A revolutionary platform that empowers a wave of innovation in the world of sports, allowing users to access an innovative, data-driven platform that utilizes the latest advancements in Artificial Intelligence, Blockchain and Smart Contracts
- Rewards users who contribute towards the success of the ecosystem
- Employees skilled in cloud, business analytics, and smart contracts and ERC20 standard development

Supply Chain Grid

Key Partners:

- Ethereum
- Key technology providers

Value Chain Configuration:

- Advanced value network configurations with sports professionals, entertainment and sports management and major league hosts
- SPSL Token Rewards

PESTEL Risks

- Covid 19 uncertainty
- GDPR
- Entering wearable technology market

Financial Grid

Revenue:

- Directly related to VP and sale and exchange of SPSL tokens

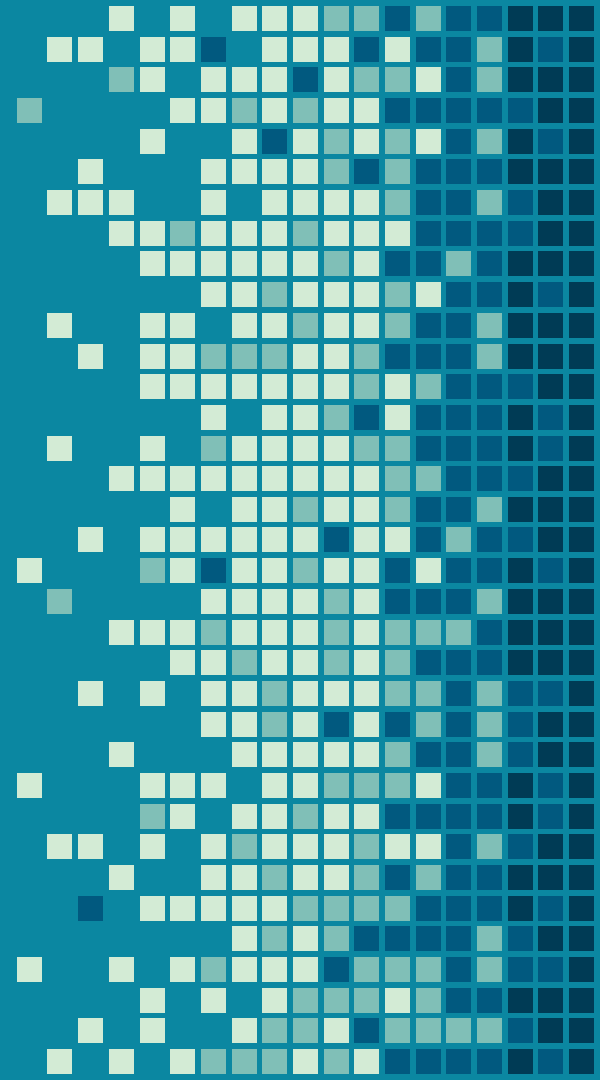
Costs:

- Proprietary software acquisition and development
- Wearable technology development
- Team, specialists and advisor expansion
- Sports ledger token formation costs (e.g. legal)



Think of blockchain as an operating system for marketplaces, data-sharing networks, micro-currencies, and decentralized digital communities. It has the potential to vastly reduce the cost and complexity of getting things done in the real world.

Only an open source, collaborative software development approach can ensure the transparency, longevity, interoperability and support required to bring blockchain technologies forward to mainstream commercial adoption. (e.g. communities of software developers building blockchain frameworks and platforms).



THANKS!

Open Discussion

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