Distributed Ledger Technology

Assembled by Stephen Downes

	Underlying Concepts
Applications	Core Technologies
Applications	Defining Blockchain
	Key Concepts
	Blockchain for Business
	Applications
	Public Sector Applications
	Identity
	Adoption Strategy
	Related Technologies
	Hardware
	Advanced Concepts
	Coins
	Exchanges
	Platforms
	Decentralized Storage
	Distributed Applications
	Distributed Organizations
	Activity
	Issues
	Future?

Barry Silbert - 3 applications

- currency (storer of value, asset class),
- financial rail,
- Ledger (new plumbing for our financial system)
- (<u>https://www.youtube.com/watch?v=R0iArSIU0Z8&feature=youtu.be&t=47m16s</u> 37:00 minute mark of video)

Various applications listed in

https://medium.com/coinmonks/enterprise-blockchain-are-we-there-yet-7090b3841b11

Blockchain technology, also known as distributed ledgers, has a number of potential use cases within the wealth and asset management life cycle.

- Image - p.3 -

http://www.ey.com/Publication/vwLUAssets/Blockchain_in_wealth_and_asset_management/ \$FILE/ey-blockchain-innovation-wealth-asset-management.pdf

McKinsey - Blockchain opportunities by sector - diagram

https://media-s3-us-east-1.ceros.com/mckinsey/images/2018/05/10/62013158ee28dd87a6f94fc735944 209/01-average-full.png from

https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/blockchain-beyond-the-hype-what-is-the-strategic-business-value

McKinsey - 6 categories of Blockchain use case - diagram -

https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%2 0Insights/Blockchain%20beyond%20the%20hype%20What%20is%20the%20strategic%20business% 20value/SVGZ_Blockchain-beyond-the-hype_ex2_expanded.ashx From

https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/blockchain-beyond-the-h ype-what-is-the-strategic-business-value

McKinsey - value varies across industries - Diagram -

https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%2 0Insights/Blockchain%20beyond%20the%20hype%20What%20is%20the%20strategic%20business% 20value/SVGZ_Blockchain-beyond-the-hype_ex4.ashx from https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/blockchain-beyond-the-hype-what-is-the-strategic-business-value

Currency and Payment

Crypto-currencies, utility tokens, security tokens

https://medium.com/crypto-oracle/8-thoughts-on-blockchain-cryptocurrency-decentralization-after-an other-three-months-down-the-448b916138b8 Diagram: https://cdn-images-1.medium.com/max/800/1*z7PDilnAtYFuOJ8-2-xvZA.png

https://medium.com/the-crypto-times/bitcoin-cheat-sheet-b380b34acb4e

"You know how you have to buy chips to play in a casino in Vegas? Imagine Target created their own chips and you had to buy those to shop there, but would get a discount for it. Target could do that with a cryptocurrency."

https://medium.com/the-crypto-times/bitcoin-cheat-sheet-b380b34acb4e

Store of Value: Whatever allows you to keep your money in a way that makes you fairly certain it will still be worth the same amount or more when you choose to spend it in the future.

http://www.europarl.europa.eu/cmsdata/149900/CASE_FINAL%20publication.pdf

"Virtual currencies (VCs) are a contemporary form of private money. Thanks to their digital form and the use of Blockchain technology (in many, but not all, cases), the transaction networks of VCs are relatively safe, transparent, and fast."

"In April 2018, there were more than 1,500 VCs; however, only a few recorded meaningful market turnover and capitalisation."

"VCs share the following characteristics:

- They are form of private money usually created in decentralised way (which is not a new phenomenon in economic history —see Subsection 3.1);
- They exist exclusively in digital form;
- Thus far, most VCs have been based on Blockchain technology (see Subsection 3.2), but perhaps also other technologies can be employed in future; and
- Most of them have a global character —that is, they work across national borders. d_{iagram} n 9

Good diagram, p. 9

Cryptocurrencies are money, not equity https://tokeneconomy.co/cryptocurrencies-are-money-not-equity-30ff8d0491bb

Payments

Bitcoin's Use in Commerce Keeps Falling Even as Volatility Eases <u>https://www.bloomberg.com/news/articles/2018-08-01/bitcoin-s-use-in-commerce-keeps-falling-even-as-volatility-eases</u>

"It's not actually usable," Nicholas Weaver, a senior researcher at the International Computer Science Institute, said in an email. Often, he said, "the net cost of a Bitcoin transaction is far more than a credit card transaction."

How Blockchain Can Solve Major Problems for Gig Economy Freelancers

https://readwrite.com/2018/12/03/how-blockchain-can-solve-major-problems-for-gig-economy-freela ncers/ "Earlier this year, Spera conducted more than 400 interviews across four continents with independent workers and the businesses that employ them. Time and time again, one key issue came up: It can be difficult to get paid on time, in full, and from a distance."

Stripe

https://stripe.com/ca

- The existing system

IBM - Blockchain World Wire

IBM Debuts Stellar-Powered 'Blockchain World Wire' Payments System

https://www.coindesk.com/ibm-debuts-stellar-powered-blockchain-world-wire-payments-system/ "Similar to other blockchain-based payment networks such as Ripple, World Wire attempts to do away with banking intermediaries that add complexity and cost to the traditional international payments systems."

Square

- Bitcoin buying and selling app debuts 2017 https://www.coindesk.com/squares-cash-app-pilots-bitcoin-buying-and-selling/ - Digital payments firm Square has received a BitLicense from regulators in the state of New York. <u>https://www.coindesk.com/square-gets-a-bitlicense-new-york-crypto/</u>

Square's Cash App Supports Bitcoin in All US States <u>https://www.ecommercetimes.com/story/85509.html?rss=1</u>

SBI

SBI Testing A Crypto Token For Retail Payments

https://www.ethnews.com/sbi-testing-a-crypto-token-for-retail-payments

"According to a September 24 <u>press release</u>, SBI's investment branch has launched a proof of concept for its settlement token dubbed the "S Coin." The S Coin is intended to allow settlements to be completed through an app on the user's smartphone."

Remittances

https://cointelegraph.com/tags/remittances

A remittance is a payment document, such as a bank draft, check, money transfer, etc., which is made in a foreign currency. Remittances are delivered to a debtor or remitter in his/her national currency by the third party and then are sent to the foreign creditor to pay arrears.

https://cointelegraph.com/news/global-telecom-blockchain-consortium-unveils-working-group-for-remittances

A global blockchain consortium of telecom carriers has announced that six further major international telecoms firms are joining its ranks, CT Japan reports today, July 6 (2018). The consortium, dubbed 'The Carrier Blockchain Study Group' (CBSG) has also today unveiled the creation of a new blockchain working group that will focus on global remittance services.

See also: Carrier Blockchain Study Group ("CBSG") -

https://www.businesswire.com/news/home/20180705005649/en/Axiata-PLDT-Telin-Turkcell-Viettel-

Zain-Join "CBSG aims to provide telecom members and their customers various services such as secured global digital payments, clearing and settlement, personal authentication, IoT applications and other services using blockchain technology."

Gift Cards

eGifter

https://www.egifter.com/buy-gift-cards-with-bitcoin/ Buy Gift Cards with Bitcoin

Gyft

https://www.gyft.com/bitcoin/ enable payments in bitcoins for goods and services "buy, send and redeem gift cards from any device. Use Gyft to also keep track of gift card balances and instantly send friends and family gift cards"

Financial Services

- goods & services across business
- network in transactions and contracts
- Trade finance
- Cross-currency payments
- Mortgages
- Use cases -

http://www.ey.com/Publication/vwLUAssets/Blockchain_in_wealth_and_asset_management/ \$FILE/ey-blockchain-innovation-wealth-asset-management.pdf

- Client onboarding and profiling
- model management and trade order generation
- companies like SWIFT—the global payment transfer provider—are busily creating their own
 proprietary blockchain-based services, the death of the 'digital money' concept is nigh. Even
 before <u>SWIFT made its announcement</u>, platforms like Ripple had already chipped away at
 bitcoin's value proposition. <u>https://www.investopedia.com/tech/2018-year-security-token/</u>

Decentralized financial applications and services

Diagram: <u>https://tokeneconomy.co/ether-as-a-store-of-national-security-4746297fbb54</u> https://cdn-images-1.medium.com/max/1600/1*f5RPoKH2dy-MohY1D-8QhA.jpeg

Robinhood

https://www.robinhood.com/

https://www.coindesk.com/robinhood-adds-ethereum-classic-to-crypto-trading-app/ "The company announced last week that it had begun "final testing" for the cryptocurrency, and would begin accepting transfers in ETC on August 7. "

https://www.ibm.com/blogs/blockchain/2020/03/anatomy-of-an-intelligent-blockchain-trading-solution//

we.trade is a digital platform that helps buyers and sellers trade across borders in a new way. Powered by the IBM Blockchain Platform from the cloud, it ensures that traders can trust the other party and streamlines trading transactions.

Banks

IBM, CLS Launch Blockchain Platform for Banks https://www.ecommercetimes.com/story/85476.html?rss=1

- Nine financial institutions, including Barclays and Citibank, have agreed to participate in the initial launch of the platform, which is sort of an app store for solutions that use distributed ledger technology, also known as "blockchain."

- The proof-of-concept venture, LedgerConnect, allows financial institutions to access such services as know-your-customer processes, sanctions screening, collateral management, and derivatives post-trade processing and reconciliation.

GMO Internet Group Creates A Bank

https://www.ethnews.com/gmo-internet-group-creates-a-bank

Japan's GMO Internet Group, working in partnership with Aozora Bank Group, has created a new, online banking business set to use blockchain as well as other cutting-edge technologies to meet market demand for advanced banking services.

Why we still need banks (for now)

https://medium.com/swlh/why-we-still-need-banks-for-now-873cdbd8f107

"if you deposit your money in a bank, they can loan it out and you can still have access to all of your money. That's alchemy, and like it or not, the current economy is built on it—and any new solution will have to compete with that."

Hedge Funds

What You Didn't Know About Crypto Index Funds

https://medium.com/@xoelop/what-you-didnt-know-about-crypto-hedge-funds-part-1-209b9d9215a7

- Coinbase Index Fund <u>https://am.coinbase.com/</u>
- Bitwise HOLD10 Fund <u>https://www.bitwiseinvestments.com/fund</u>

Financial Access and Opportunity

Aikon. Decentralized API marketplace. Aikon's shared infrastructure for API access control, validation, and payments is creating equal access to digital commerce so that small teams of software engineers can participate alongside established enterprises.

<u>Colendi</u>. Decentralized credit scoring and microcredit platform. Colendi is creating a blockchain network among accredited merchants, lenders, and data providers so that both banked and unbanked users can develop portable credibility scores tied to uniquely encrypted IDs.

Project i2i. Kaleido, an enterprise SaaS platform, is working with the UnionBank of the Philippines to develop an Ethereum-based payment network that connects rural community banks and facilitates financial access in remote areas of the country.

SALT Lending. Secure Automated Lending Technology. The SALT lending platform uses cryptocurrency as collateral so that users can get same day verified loans and maintain their digital asset positions.

<u>Grameen Foundation</u>. Grameen is a global nonprofit that strengthens local partner networks to increase access to financial services, develop mobile agriculture tools, improve HIV treatment, and promote pro bono services.

Bonds

In 2015, Overstock issued a blockchain-based corporate bond. http://investors.overstock.com/phoenix.zhtml?c=131091&p=irol-newsArticle&ID=2073583

Last year, a company in the UK issued a bond using Ethereum's public ledger. https://www.coindesk.com/who-needs-a-csd-nivaura-to-issue-first-regulated-bond-in-ethereum/

And the city government of Berkeley, California, is exploring the possibility of issuing blockchain-based municipal bonds. https://www.technologyreview.com/s/610442/berkeley-ca-is-considering-an-ico-unlike-any-other/

World Bank Mandates Commonwealth Bank of Australia for World's First Blockchain Bond <u>http://www.worldbank.org/en/news/press-release/2018/08/09/world-bank-mandates-commonwealth-b</u> <u>ank-of-australia-for-worlds-first-blockchain-bond</u>

Liquidity

https://ripple.com/solutions/source-liquidity/

"**xRapid** is for payment providers and other financial institutions who want to minimize liquidity costs while improving their customer experience. Because payments into emerging markets often require pre-funded local currency accounts around the world, liquidity costs are high. xRapid dramatically lowers the capital requirements for liquidity."

CrowdFunding

https://www.idgconnect.com/blog-abstract/30700/blockchain-africa

- Using blockchain-backed crowdfunding, Finterra will allow users to pledge money to any community-based project globally and be part of the investment community.

Collaborative Consumption

The Past, Present, and Future of Sharing

https://media.consensys.net/the-past-present-and-future-of-sharing-f450285f089a

"how have we seen "sharing" transform on a social, economic, and enterprise scale? More importantly, can we predict how sharing will continue to evolve, especially in the context of blockchain technology?"

Subscriptions

Groundhog https://groundhog.network/

- Halifax
- "suite of tools to power the crypto subscription economy. Groundhog consists of both a mobile wallet, and a payment gateway, Groundhog Pay, that can be installed on any web site via API or plugin."

Business Networking

- Participants are customers, suppliers, banks, partners
- Cross geography & regulatory boundary

Law

Leaders in Blockchain, Law and Legal Technology Team Up to Launch the Agreements Network... Innovative Legal Network to Use Smart Contract Technology to Manage Agreements Process <u>https://www.prnewswire.com/news-releases/leaders-in-blockchain-law-and-legal-technology-team-up</u> -to-launch-the-agreements-network-300687325.html?tc=eml_cleartime

"...law firms and technology companies have agreed to work together to further the launch of a public, permissioned blockchain network, the <u>Agreements Network</u>, which will redefine how legal products and services support the networked economy."

- <u>https://agreements.network/</u>
- Docs https://docs.agreements.network/
- <u>Hyperledger Burrow</u> is the base blockchain node used for the Agreements Network.

Agreements Network Marries Legal Contracts with Blockchain (via Ledger Insights) https://computationallegalstudies.com/2018/07/31/agreements-network-marries-legal-contracts-blockc hain-via-ledger-insights/

- "eleven organizations are partnering with the Agreements Network (AN) which turns 'legal processes into products'."

Legal Education in the Blockchain revolution

https://www.slideshare.net/eraser/legal-education-in-the-blockchain-revolution-de-mark-fenwick-wulf -a-kaal-erik-pm-vermeulen "The rise of Legal Technology, artificial intelligence, big data, machine learning, and, most importantly, blockchain technology is changing the practice of law. The sharing economy and platform companies challenge many of the traditional assumptions, doctrines, and concepts of law and governance—requiring litigators, judges, and regulators to adapt. Lawyers need to be equipped with the necessary skillsets to operate effectively in the new world of disruptive innovation in law."

Markets

- Public (fruit market, car auction), or
- Private (supply chain financing

- Retail
 - Supply chain
 - Loyalty program
 - Information-sharing (supplier-retailer)
 - 0

Bext360 is a startup with the ambition of using blockchain to pay farmers fairly for their coffee beans.

https://techcrunch.com/2017/04/11/bext360-is-using-robots-and-the-blockchain-to-pay-coffee-farmers _fairly/

Prediction Markets

The Forecast Foundation - <u>https://www.augur.net/foundation/</u>

See also: Services/Forecasting/Augr

Asset Management

Blockchain could save asset managers \$2.7bn per year https://www.ft.com/content/b6171016-171f-11e8-9e9c-25c814761640

TD Bank Considers Public Blockchain for Asset Tracking -

https://www.coindesk.com/td-bank-considers-public-blockchain-for-asset-tracking/

- patent application <u>published Thursday</u>, TD Bank outlined how it could use a <u>public</u> <u>distributed ledger</u> to help point-of-sale computers track transactions.

Asset management startups using blockchain get their own trade body: MAMA - <u>https://techcrunch.com/2017/12/04/asset-management-startups-using-blockchain-get-their-own-trade-body-mama/</u>

Multichain Asset Management Association (MAMA)

Xapo - crypto-asset wallet and storage vaults - https://xapo.com/

- Granted license in NY - https://www.dfs.ny.gov/about/press/pr1806141.htm

Unlocking Economic Advantage with Blockchain: A guide for asset managers https://www.jpmorgan.com/global/cib/markets-investor-services/blockchain-economics

- Cost savings siagram <u>https://www.jpmorgan.com/jpmjpg/1320706691427.jpg</u>

Shared Reference Data

What

-

- Competitors/collaborators in a business network need to share reference data, e.g. bank routing codes
- Each member maintains their own codes, and forwards changes to a central authority for collection and distribution
- An information subset can be owned by organizations

How

- Each participant maintains their own codes within a Blockchain network
- Blockchain creates single view of entire dataset

Benefits

- 1. Consolidated, consistent dataset reduces errors
- 2. Near real-time access to reference data
- 3. Naturally supports code editing and routing code transfers between participants

Supply Chain

What

- Provenance of each component part in complex system hard to track
- Manufacturer, production date, batch and even the manufacturing machine program

How

- Blockchain holds complete provenance details of each component part
- Accessible by each manufacturer in the production process, the aircraft owners, maintainers and government regulators

Benefits

- 1. Trust increased, no authority "owns" provenance
- 2. Improvement in system utilization
- 3. Recalls "specific" rather than cross fleet

Eg. https://www.idgconnect.com/blog-abstract/30700/blockchain-africa

- The Ethiopian government is working with Cardano, a subsidiary to blockchain company <u>IOHK</u>, to create a blockchain-backed supply chain for its coffee distribution.

Eg. Peer Ledger - <u>https://peerledger.com/</u> - "Our MIMOSI Blockchain application <u>https://peerledger.com/mimosi/</u> gives companies a trusted, immutable record of all track-and-trace transactions across supply chains, using the highest level of identity management in the industry." (Halifax)

- Identity Bridge - <u>https://peerledger.com/identity-bridge/</u> - authenticating Blockchain identities

The death of supply chain management - HBR

https://hbr.org/2018/06/the-death-of-supply-chain-management

Sensor data on machine use and maintenance are helping some manufacturers to better estimate when machines will break down, so downtime is minimized. <u>Blockchains are beginning to revolutionize</u> <u>how parties collaborate in flexible supply networks</u>. Robots are improving productivity and margins in retail warehouses and fulfillment centers. Delivery drones and self-driving vehicles aren't far off.

http://fortune.com/2017/08/22/bitcoin-ethereum-blockchain-cryptocurrency/

"Yiannas has for years searched without success for what he calls the "Holy Grail of food traceability," a technology that could track and catalog a <u>product's status across his supply chain</u>. He admits he was "very skeptical" that a blockchain could fill the gap, but he gave it a try. Walmart (<u>wmt, +1.37%</u>) partnered with <u>IBM (ibm, -1.94%</u>) for a <u>trial run</u> on <u>Hyperledger Fabric</u>, a blockchain built under the purview of the Linux Foundation's Hyperledger group, where companies collaborate on blockchain R&D."

"Other companies are now exploring blockchains' potential for their logistics. Maersk, the Danish shipping giant, has started testing a blockchain to track its shipments and coordinate with customs officials. Airbus, the French aircraft maker, is looking to use blockchains to monitor the many complex parts that come together to make a jet plane. Daimler, the German automaker, is investigating similar possibilities for its vehicles."

https://media.consensys.net/how-blockchain-is-helping-technology-get-its-soul-back-a2d6cf96a272 Viant. Supply chain platform built on Ethereum. Viant recently teamed up with Microsoft to help the World Wildlife Fund verify that fish are <u>harvested from sustainable sources</u>,

https://media.consensys.net/how-blockchain-is-helping-technology-get-its-soul-back-a2d6cf96a272 Diamond Time-Lapse. Everledger's Diamond Time-Lapse Protocol helps manufacturers, retailers, and consumers verify a stone's provenance and authenticity.

How Blockchain And RFID Will Change Supply Chain Management https://medium.com/datadriveninvestor/how-blockchain-and-rfid-will-change-supply-chain-managem ent-e07d7363305a

Pharma

Viant recently teamed up with Microsoft to help ... pharma giant GlaxoSmithKline to ensure regulatory compliance and to <u>prevent mislabeled and counterfeit meds</u>.

How the FDA is piloting blockchain for the pharmaceutical supply chain

https://www.ibm.com/blogs/blockchain/2020/05/how-the-fda-is-piloting-blockchain-for-the-ph armaceutical-supply-chain/

Citizens Reserve

Deloitte Blockchain Boss Departs To Build Ethereum Supply Chain

https://www.forbes.com/sites/michaeldelcastillo/2018/05/14/deloitte-blockchain-boss-departs-to-build -ethereum-supply-chain/#51a684983a02

- ""We have decided to start with the defense industry because we have relationships with key participants in the defense industry, and it's a very broken supply chain across the globe," said Piscini. "We have market participants from that industry that are being onboarded into the consortium now.""
- Diagram -<u>https://thumbor.forbes.com/thumbor/960x0/https%3A%2F%2Fblogs-images.forbes.com%2F</u> michaeldelcastillo%2Ffiles%2F2018%2F05%2FDiagram-jpeg.jpg

Shipping

Maersk, IBM say 94 organizations have joined blockchain trade platform <u>https://www.reuters.com/article/us-shipping-blockchain-maersk-ibm/maersk-ibm-say-94-organization</u> s-have-joined-blockchain-trade-platform-idUSKBN1KU1LM

"Under its new strategy, which includes the creation of an industry-wide blockchain-based trading platform, Maersk aims to expand its transport and logistics business in areas such as freight forwarding and trade finance. It wants to provide end-to-end solutions for customers rather than just shipping a container from port to port."

Walmart's Latest Blockchain Patent Lets Robots Conduct Deliveries Across Supply Chain <u>https://www.bitcoinandethereum.com/walmarts-latest-blockchain-patent-lets-robots-conduct-deliverie</u> <u>s-across-supply-chain/</u>

"The new patent aims to provide a technology for running "in-field authenticating of autonomous electronic devices" to enable secure deliveries. The patent specifies that "[i]n exemplary embodiments, two autonomous electronic devices, such as delivery drones or household autonomous robots, can authenticate each other using embodiments of security procedures described herein."

Human Resources

Quidli

https://quid.li/

- "customize employee equity based on the performance metrics that matter to them."

Talent Management

How Blockchain Brings Innovation in Staffing?

https://readwrite.com/2018/10/17/how-blockchain-brings-innovation-in-staffing/

"Recruiters hunt for the appropriate talent on social networking or job-seeking sites. With blockchain, the potential new employee cannot limit either his profile visibility or the info needed as an obligation."

Audit and Compliance

What

- Financial data in a large organization dispersed throughout many divisions and geographies
- Audit and Compliance needs indelible record of all key transactions over reporting period

How

- Blockchain collects transaction records from diverse set of financial systems
- Append-only and tamperproof qualities create high confidence financial audit trail
- Privacy features to ensure authorized user access

Benefits

- 1. Lowers cost of audit and regulatory compliance
- 2. Provides "seek and find" access to auditors and regulators
- 3. Changes nature of compliance from passive to active

https://www.idgconnect.com/blog-abstract/30700/blockchain-africa

- **Dorae** - Dorae, a blockchain company directing to trace raw materials in various industry verticals, was given a mandate to trace cobalt from the country.

https://media.consensys.net/how-blockchain-is-helping-technology-get-its-soul-back-a2d6cf96a272 **PACT World.** A member of the European Partnership for Responsible Minerals, PACT World is supporting blockchain-based traceability and data reporting systems to foster responsible mining practices in high-risk areas and to keep children out of mineral supply chains.

Proof of Conservation

Peer-to-Peer Energy, Agro Exchanges, and Low-Cost Connectivity

- https://media.consensys.net/how-blockchain-is-helping-technology-get-its-soul-back-a2d6cf96a272
 - Diagram: https://cdn-images-1.medium.com/max/800/1*Dxzid5Xx_L8N4I_eJEHALQ.png

<u>Roughly 120 energy-focused projects</u> have shaped up across the blockchain space to rethink our current energy infrastructure, modes of distribution, and incentive designs for sustainable efforts

<u>Grid+.</u> Ethereum-enabled access to wholesale energy. Grid+'s Smart Agents—always-on, Internet-enabled devices—make smarter decisions about energy consumption. Grid+ just recently received approval for a retail electric provider certificate from the state of Texas.

<u>Swytch.</u> Swytch's Open Oracle technology rewards people, companies, and organizations that make verifiable sustainability efforts, such as renewable energy production.

<u>Chooose</u>. Tokenized carbon cuts. Chooose is incentivizing positive climate efforts by enabling companies and individuals to monetize their Co2 cuts.

HARA. Decentralized agriculture data exchange. Smallholder farmers, agricultural retailers, and other data providers are incentivized to share real-time, verifiable insights in order to improve inventory management, identify market opportunities, prevent excess stock, anticipate weather risks, reduce spoilage, and cut transport times.

Binkabi. Agricultural commodity trading system. Binkabi's Barter Block system enables developing countries to trade internationally in their local currencies.

Nodle. A scalable infrastructure for wireless connectivity will be the backbone of blockchain adoption across developing regions. Nodle's low cost, low energy, high bandwidth IoT network is extending coverage beyond the reach of cellular networks.

Regen Network

https://www.regen.network/

Regen Network monitors on-the-ground conditions and generates trusted attestations about the ecological state of a piece of land.

Letter of Credit

What

- Bank handling letters of credit (LOC) wants to offer them to a wider range of clients including startups
- Currently constrained by costs & the time to execute

How

- Blockchain provides common ledger for letters of credit
- Allows all counter-parties to have the same validated record of transaction and fulfillment

Benefits

- 1. Increase speed of execution (less than 1 day)
- 2. Vastly reduced cost
- 3. Reduced risk, e.g. currency fluctuations
- 4. Value added services, e.g. incremental payment

Insurance

- Claims processing

- Risk provenance
- Asset usage history
- Claims file

Smart Contracts: Use Cases in Insurance November 2016 A Presentation from the Blockchain Insurance Summit https://www.digitalchamber.org/assets/smart-contracts-use-cases-in-insurance.pdf

Resources and Industry

Agriculture

https://media.consensys.net/how-blockchain-is-helping-technology-get-its-soul-back-a2d6cf96a272 Greenblocks (@Greenblocks_net). A decentralized, community-driven marketplace that connects urban farmers, landowners, and consumers. Team members: Philipp Beer (@Philipp_Beer), Lewis Daly (@lewdaly), Billy Garrison(@BlockchainBilly).

Thor (@Thor-Weather). A decentralized weather data system that uses blockchain to store and distribute raw weather data. Team members: Ylli Vllasolli (Yvllasolli), Charlotte Stephens (charlotteweb18), Bayo Akins (BayoAkins), Erica Sundberg (elliica), Stephen Jackson (_stevejaxon).

CBA helps ship 17 tonnes of almonds on the blockchain

https://www.cio.com.au/article/644491/cba-helps-ship-17-tonnes-almonds-blockchain/ While IoT devices check humidity and temperature levels inside shipping container

- "The collaborators' blockchain platform digitised three elements of the trade – operations, documentation and finance – by storing shipping container information, completion of tasks and shipping documents, on a purpose-built blockchain."

How Blockchain is Building Trust In The Food Industry | Immutability enabling Traceability https://afbmalaunchpad.com/2018/09/01/how-blockchain-is-building-trust-in-the-food-industry-immu tability-enabling-traceability/

"With the food industry experiencing a decline in customer trust after the recent food contaminations (ie., E. Coli outbreaks and others), the industry has now found it rather imperative to reassure customers while also enhancing customer experience."

Forestry

https://medium.com/@afhenderson/blockchain-for-social-good-4e6d0d4468d3 Wuji in the process of launching an initiative that leverages <u>blockchain</u> to track the planting of trees worldwide and create rewards for planting trees.

- Wuji https://chicagoblockchainproject.com/voice-of-blockchain/wuji/
- Image: https://cdn-images-1.medium.com/max/800/1*DJcFZQa8j3O-tfYkdqiQag.jpeg

Manufacturing

- Supply chain
- Product parts
- Maintenance tracking

Mining

IBM introduces a blockchain to verify the jewelry supply chain

https://techcrunch.com/2018/04/26/ibm-introduces-trustchain-a-blockchain-to-verify-the-jewel ry-supply-chain/

- IBM TrustChain consortium to track the provenance of diamonds from mine to store.

Trade

https://www.idgconnect.com/blog-abstract/30700/blockchain-africa

 <u>Binkabi</u> - buyers pay and sellers receive in their respective local currencies through Barter Block, a smart bartering mechanism. We will leverage blockchain technology to solve the trust issue in international trade, while keeping costs down for our members," the company says.

Power Sharing / Energy Trading

- -
- How blockchain can democratize green power https://theconversation.com/how-blockchain-can-democratize-green-power-87861
 - - UW research project
 - "This is what companies such as <u>PowerLedger</u> in Australia and <u>LO3 Energy</u> in Brooklyn provide. They use <u>blockchains</u> to store <u>generation certificates</u> that are created by tamper-proof meters attached to solar panels."

Power Ledger

- <u>https://www.powerledger.io/</u>
- Power Ledger (POWR) is an Australian <u>blockchain-based cryptocurrency</u> and energy trading platform that allows for decentralized selling and buying of <u>renewable energy</u>. <u>https://en.wikipedia.org/wiki/Power_Ledger</u>
- Power Ledger "Power Ledger is the world leading peer-to-peer marketplace for renewable energy." <u>https://www.powerledger.io/</u>

"The Australian-born <u>Power Ledger</u> is now moving beyond trials and into the commercial deployment of its platform. It's a sign that the market is not only open to the concept of peer-to-peer trading but ready to start implementing. Power Ledger has partnered with the Clean Energy Blockchain Network, launching its first commercial deployment in the US at the Northwestern University Evanston campus." - https://techcrunch.com/2018/05/03/power-ledger-deploys-first-blockchain-based-p2p-energy-trading-system-in-chicago/

Power Ledger: Reinventing Energy Networks

https://www.cryptoadvocate.net/single-post/power-ledger-reinventing-energy-distribution Image:

https://static.wixstatic.com/media/03bd03_aed37f7280a14856a2d70024264e48e4~mv2.jpg/v1/fill/w_ 1050,h_932,al_c,q_85/03bd03_aed37f7280a14856a2d70024264e48e4~mv2.jpg

https://www.ccn.com/aussie-blockchain-powers-p2p-solar-power-trading-in-upscale-bangkok-commu nity/

Late last month, for instance, Australia's blockchain-based P2P energy marketplace, Power Ledger, started trials in Bangkok allowing homeowners to sell the excess solar electricity they generate as well as buy the same when experiencing shortfalls.

Blockchain Based Energy Distribution & Trading Platform

The idea is to design a micro-grid with renewable energy sources and create a distributed ledger system that functions across grid-connected devices, with several financial alternatives for transactive energy, and a foundation that advances market design and technology in tandem. These distributed ledgers will store, in a tamper proof manner, the energy presumption (production & consumption) data collected from IOT devices, while self-enforcing smart contracts programmatically define the expected energy flexibility at the level of each prosumer; therefore, outline the rules for balancing the energy demand with the energy production at grid level.

	Organisation	Туре	Country
1	<u>KoçSistem</u>	ITEA Founding Company	Turkey
2	Tangent Design Engineering Inc.	Small and Medium sized Enterprise	Canada
3	let's dev GmbH & Co. KG	Small and Medium sized Enterprise	Germany
4	Siemens Energy	Large Industry	Germany

5	<u>Bewell Teknololji San.Tic.A.Ş.</u>	Small and Medium sized Enterprise	Turkey
6	<u>Experteam</u>	Small and Medium sized Enterprise	Turkey
7	University of Southern Denmark	University	Denmark
8	<u>DOGUŞ BILGI ISLEM VE TEKNOLOJI</u> <u>HIZMETLERİ</u>	Large Industry	Turkey
9	SETLabs Research GmbH	Research Institute	Germany
10	<u>TURKTRUST Bilgi Iletisim ve Bilisim Guvenligi</u> <u>Hizm</u>	Small and Medium sized Enterprise	Turkey
11	SISTRADE Software Consulting, S.A.	Small and Medium sized Enterprise	Portugal
12	ENDOKS ENERJI DAGITIM SIST.SAN.ITH.VE IHR.LTD.STI.	Small and Medium sized Enterprise	Turkey
13	GDZ Elektrik Dagitim AS	Large Industry	Turkey
14	Inavitas Energy AS	Small and Medium sized Enterprise	Turkey
15	TWT GmbH Science & Innovation	Small and Medium sized Enterprise	Germany

Carbon Offsets

Even if Doug Ford doesn't like them

https://www.greentechmedia.com/articles/read/the-startup-aiming-to-wipe-out-blockchains-carbon-fo otprint

The Startup Aiming to Wipe Out Blockchain's Carbon Footprint

"Carbon Grid Protocol, owned by the Singapore-based New Era Energy, has developed a blockchain-based framework that is intended to help other blockchain players offset emissions. In the case of bitcoin, these are estimated to equal more than 500 kilos of carbon dioxide per transaction." "Another is Verdium Labs, which announced a partnership with IBM in May this year. Climatecoin is another startup working on carbon offsets."

Carbon Grid Protocol <u>https://carbongrid.io/</u>

"Leveraging the rising blockchain-enabled economy, we aim to unlock the potential for blockchain networks and DApps to become major new players in the vast untapped global market for carbon credits."

- White Paper - https://carbongrid.io/cgrid_wp_draft.pdf

Verdium Labs

https://veridium.io/

"Veridium is collaborating with IBM to help transform the carbon credit market using blockchain technology"

- White Paper - https://veridium.io/assets/uploads/Veridium-White-Paper.pdf

"Veridium is a collaborative initiative to create a regenerative economy that sustains our planet's natural resources and reduces carbon emissions. The system we're building turns industry-standard carbon offsets into freely tradeable tokenized assets. With our partners, we are creating a marketplace that will automate the corporate carbon credit accounting and offsetting process across global supply chains."

Veridium Labs teams with IBM and Stellar on carbon credit blockchain

https://techcrunch.com/2018/05/15/veridium-labs-teams-with-ibm-and-stellar-on-carbon-credit-blockc hain/

Climatecoin

https://climatecoin.io/

- "The Climatecoin CO2 token is a unique cryptoasset based in Ethereum technology that allows any citizen in the world to participate in the fight against Climate Change."
- White Paper https://climatecoin.io/uploads/WHITEPAPER-OFFICIAL-V5.3-1.pdf

Climatecoin incorporates more than 60,000 Carbon Credits in his Pool https://medium.com/@Climatecoin/climatecoin-incorporates-more-than-60-000-carbon-credit s-in-his-pool-a0abfc20b7c1

Climatecoin Aims to Be the World's First Carbon-Neutral Cryptocurrency <u>https://futurism.com/climatecoin-aims-worlds-first-carbon-neutral-cryptocurrency/</u>

 "Climatecoin, an Ethereum-based cryptocurrency, has partnered with a carbon credit exchange"

Services

Forecasting

Augr

The latest blockchain use case: anonymously betting on public figure death pools. Crypto's hottest new app is Augur. <u>https://www.augur.net/</u> Launched this month by a nonprofit called the_Forecast Foundation, <u>https://www.augur.net/foundation/</u> Augur lets users create "peer-to-peer prediction markets" where they can wager on whether specific events will occur.

- The Forecast Foundation https://www.augur.net/foundation/
- As Crypto Meets Prediction Markets, Regulators Take Notice <u>https://www.bloomberg.com/news/articles/2018-07-26/as-crypto-meets-prediction-markets-u-s-regulators-take-notice</u>

Augur is a frustrating user experience

https://blocktimes.io/posts/25241-augur-is-a-frustrating-user-experience If Web 3.0 is going to be made of <u>#DApps</u> (distributed apps), it's going to need a much better <u>#UserExperience</u> than my run-through of Augur this week.

Real Estate

Nobul sets out to change the way we buy and sell real estate -<u>https://www.newswire.ca/news-releases/nobul-sets-out-to-change-the-way-we-buy-and-sell-real-estate</u> <u>-668350913.html</u> Google Play app - https://play.google.com/store/apps/details?id=com.nobul&hl=en

Japanese Company Trials BTC and Smart Contracts in Real Estate Transactions <u>https://news.bitcoin.com/japanese-company-btc-smart-contracts-real-estate/?bt_alias=eyJ1c2VySWQi</u> <u>OiAiNTQxYzE5NWYtNjQzMC00NTRmLWI4MGUtYzQ0YjAzMTE5Y2RjIn0%3D</u>

"Japanese real estate company Ruden Holdings (TYO:1400) recently announced the results of an experiment using its newly-created 'virtual currency real estate settlement platform.""

Blockchain in real estate: How technology is changing the industry https://www.ibm.com/blogs/blockchain/2019/09/blockchain-in-real-estate-how-technology-is-changing-the-industry/

Rentals

On This Blockchain-Based Version Of Airbnb, There's No Middleman https://medium.com/fast-company/on-this-blockchain-based-version-of-airbnb-theres-no-middlemana62658263ce4

The crypto world is taking aim at platform companies, with the idea of creating true peer-to-peer networks. They just need users first.

Books

Book Chain Project

- https://bookchainproject.com/home

"The Book Chain Project gives publishers the information they need to tell the full story of their books; from the origins of tree fibres in the papers, the safety of chemicals in their inks, glues and varnishes, to the working conditions of the factories where the books were made."

Bookchain

www.scenarex.ca/en/

"allows authors and publishers to configure the security, traceability, attribution, and distribution settings (including lending and reselling) of a digital document." (NRC is a partner)

Publica

https://publica.com/

Journalism

Chinese bet on blockchain to counter vaccine scandal cover-up https://technode.com/2018/07/23/vaccine-scandal-blockchain/

Internet users in China have used Ethereum to stump the Great Firewall. Internet censors kept removing an investigative news story about how a Chinese biotech company developed and sold defective vaccines to babies. So someone added the article's text to the metadata of an Ethereum transaction, where it's out of the government's reach. And this isn't the first time Chinese netizens have used a blockchain this way. According to Technode, someone recently turned to Ethereum to preserve an open letter from a Peking University student regarding a sexual harassment case.

https://medium.com/s/welcome-to-blockchain/what-could-blockchain-do-for-journalism-dfd054beb19 7 What Could Blockchain Do for Journalism?

- "An ecosystem of micropayments, in which everyone pays fractions of a penny for every article they read, has long been thought of as the holy grail for online journalism, the theoretical future solution. But there has never been a way to process payments like that in reality—until now."
- "there was a real danger that the crucial journalism all three sites did would not only cease, but be wiped from history entirely, their archives expunged. The immutability and permanence of information on the blockchain would make that nearly impossible. 'They're 'billionaire-proofing' journalism, and I think that's crucial now,""

\$1m funding for firm to develop blockchain publishing

https://www.researchinformation.info/news/1m-funding-firm-develop-blockchain-publishing "MaterialsZone estimates that 95 per cent of scientific research is inaccessible or lost due to concerns over intellectual property, little incentive for researchers to publish data, and a lack of platforms on which scientists can publish"

Civil

Goodbye, Denver Post. Hello, Blockchain.

https://www.nytimes.com/2018/06/17/business/media/denver-post-blockchain-colorado-sun.html

- Expenses for the fledgling outlet will be covered by a grant from Civil, whose sole investor, for now, is <u>ConsenSys</u>,
- People who purchase the CVL token, a form of cryptocurrency, will have a say concerning the projects hosted by Civil
- outlined in the <u>Civil Constitution</u>.
- By the end of June, Civil will have started 13 newsrooms throughout the country.

https://media.consensys.net/how-blockchain-is-helping-technology-get-its-soul-back-a2d6cf96a272

Civil. In our post-fact era, reputable, reliable news is an increasingly rare good, and content from everyday outlets is a commodity worth tracking, tracing, and auditing. Civil, a decentralized marketplace for sustainable journalism, is a new protocol for journalism that is aimed at both preventing censorship and flagging any willful distortion of the news. As founder Matthew Iles insisted, "Journalism isn't just about journalists. Journalism is the system of information distribution between journalists and citizens so people can make informed decisions about the world."

Civil, the blockchain-based journalism marketplace, is building its first batch of publications <u>http://www.niemanlab.org/2017/10/civil-the-blockchain-based-journalism-marketplace-is-building-its</u> <u>-first-batch-of-publications/</u>

- raised \$5 million from from ConsenSys, a "leading global blockchain venture studio."
- Civil's core and more understandable appeal is that it uses the decentralized blockchain to "create an indelible, incorruptible record outside the reach of third parties," she said. "As journalists, it's pretty obvious why that would be valuable to us. The whole idea of being an incorruptible record is what journalism is all about."
- Diagram: <u>http://www.niemanlab.org/images/1-O2_QiGlgzEPQFseg74RKHQ-700x392.png</u>

Aiming to attract buyers who aren't cryptocurrency nerds, Civil is offering a way to buy its tokens with regular old cash

http://www.niemanlab.org/2018/09/aiming-to-attract-buyers-who-arent-cryptocurrency-nerds-civil-is-offering-a-way-to-buy-its-tokens-with-regular-old-cash/

R.I.P. Civil — Lessons from a failed startup

The high-profile, blockchain-backed attempt to nurture nascent digital news sites is shutting down. https://www.poynter.org/business-work/2020/r-i-p-civil-lessons-from-a-failed-startup/

Wildspark

Introducing our New and Improved Leaderboard

https://medium.com/synereo/introducing-our-new-and-improved-leaderboard-4fe44b7a8f19

The reason for this change is two-fold:

- 1. To promote the creation and curation of fresh, new content
- 2. To level the playing field for curators, as well as creators, and their latest content during the leaderboard competition

(See also Coins/AMP, below)

Music

Audius

https://audius.co/

SoundCloud on the blockchain? Audius raises \$5.5M to decentralize music https://techcrunch.com/2018/08/08/audius/

"Audius is creating a fully decentralized community of artists, developers, and listeners collaborating to share and defend music."

Photos

Baidu's Blockchain Photo App Launches With Its Own Token https://www.coindesk.com/baidus-blockchain-photo-app-launches-with-its-own-token/

Content Generally

How blockchain can help advertisers combat 'ad blindness'

https://venturebeat.com/2018/08/12/how-blockchain-can-help-advertisers-combat-ad-blindness/ "Basic Attention Token is a known name in the young industry due to its Brave internet browser, which essentially acts like any other browser but features a more sophisticated advertising model. The browser's 3.1 million+ monthly active users can choose to block ads entirely, filter some of them, or view them all and get paid in BAT tokens for letting the browser measure their "attention.""

SocialFlow

http://www.socialflow.com/

- White papers - http://www.socialflow.com/resources-2/white-papers/

Does a 'universal attention token' sound good? Then you're going to love the blockchain https://www.cjr.org/the_new_gatekeepers/universal-attention-token-blockchain.php "SocialFlow—which manages social-media campaigns for media companies—wants to replace the ad business and its shady click and page-view model with a cryptocurrency-based "universal attention token," which it <u>announced this week</u>."

"According to SocialFlow's <u>white paper</u>, readers would earn tokens by consuming content (including ads) and then be able to use those tokens to pay for paywall access and other features."

"The idea of an "attention token," for example, is <u>already built into</u> a new web browser called Brave, which was launched in 2016 by Brendan Eich, co-founder of Mozilla and creator of the Javascript programming language."

Coil

Ripple (XRP)'s CTO Stefan Thomas Announces New Company Coil <u>https://oracletimes.com/ripple-xrps-cto-stefan-thomas-announces-new-company-coil/</u> "Ripple's CTO, Stefan Thomas announced on Twitter a new startup that is building micropayment apps on XRP and interledger."

https://www.reddit.com/r/Ripple/comments/8jz65f/coil_another_bright_future_for_xrp/

The company COIL will have projects targetting micropayments & monetizing the internet! If you happen work for a company that gathers revenue from digital content on the internet, you know the work used to be hard and the revenue low.

Coil: Using the Interledger Protocol to monetize content https://xrpworld.com/coil-interledger-monetization/

Digital

Bots

BotChain wants to put bot-to-bot communication on the blockchain <u>https://techcrunch.com/2018/05/08/botchain-wants-to-put-bot-to-bot-communication-on-the-blockcha</u> <u>in/</u>

Rob May, who is CEO at Talla and whose company helped launch <u>a blockchain called BotChain</u> to track the authenticity of bots, says finding good use cases could help ultimately determine the technology's success or failure.

Cloud

Red Hat Eyes Blockchain For Tracking When Customers Use the Cloud http://www.sghuffe.com/red-hat-eyes-blockchain-for-tracking-when-customers-use-the-cloud/ "New marketing models for selling software on a cloud platform require new methods of tracking usage, and a blockchain may be able to efficiently store this information, according to a patent application released last Thursday by the U.S. Patent and Trademark Office."

File Sharing

BitTorrent Courts File-Sharers With Token System

https://www.pcmag.com/news/363505/bittorrent-courts-file-sharers-with-token-system

"BitTorrent wants to reward file-sharing with virtual tokens. The upcoming feature is part of a project to integrate BitTorrent's network with blockchain technology from Tron, a cryptocurrency developer that acquired BitTorrent for a reported \$140 million last month."

DRM

"Two Major Spanish Public Institutions to Research Blockchain for Copyright Management" https://cointelegraph.com/news/two-major-spanish-public-institutions-to-research-blockchain-for-cop yright-management

Baidu has already <u>released</u> one blockchain-based product since the BaaS rollout, this coming in the form of a digital image property rights management platform in April. Microsoft and EY Launch Blockchain Tool for Copyright

http://fortune.com/2018/06/20/microsoft-and-ey-launch-blockchain-tool-for-copyright/

"<u>Microsoft</u> announced an ambitious plan on Tuesday to collect royalty payments for authors, software developers, and other creators using <u>blockchain technology</u>, which creates a tamper-proof record system across multiple computers."

- po.et trying to use it to enforce content ownership,
- Hu-manity, which wants to enforce data ownership,

The JPEG Committee is "exploring Blockchain" - to put DRM into JPEG

https://davidgerard.co.uk/blockchain/2018/08/10/the-jpeg-committee-is-exploring-blockchain-to-put-d rm-into-jpeg/ "After six months' collaboration, the group has produced a white paper — <u>"Towards a</u> <u>Standardized Framework for Media Blockchain"</u> — as announced in the <u>press release</u> following the 80th meeting in July."

Blockchain Comes to E-Books, DRM Included

https://copyrightandtechnology.com/2018/08/17/blockchain-comes-to-e-books-drm-included/ both of the startups I'm talking about here use DRM, even though neither of them likes to talk about it. One is Bookchain, from Montreal-based Scenarex, which the company expects to launch next month; the other is Publica, based in Gibraltar and Latvia, which is up and running. Scenarex uses the term "Digital Rights Enabler" for its DRM, while Publica calls its Token Key Protocol (TKP) a "successor" to DRM.

Computer Sharing

- <u>Golem</u> aims to be a decentralized "supercomputer". However, instead of storing smart contracts and DApps that can be run using computing power from Ethereum nodes, Golem users can rent computing power from others. <u>https://kingpassive.com/what-is-ethereum/</u>

Search

Preserach

https://www.presearch.org/login

Meet Presearch, the Blockchain-powered search engine set to take on Google <u>http://wow24online.blogspot.com/2018/07/meet-presearch-blockchain-powered.html</u> "Presearch is the blockchain project to create an open, decentralized community-powered search engine with curation rewards for users. The team hopes to release its first viable product in September this year. (2018)

- White paper - https://www.presearch.io/uploads/WhitePaper.pdf

Games

Virtual Universe

https://www.vutoken.io/ White Paper - https://www.vutoken.io/s/VU-Whitepaper-5_6.pdf

Virtual Universe Has Launched Their Game Portal

https://ryanschultz.com/2018/07/06/virtual-universe-has-launched-their-game-portal/

"VU Tokens are not a real currency. They are ERC-20 based blockchain tokens intended to permit players of Virtual Universe exclusive access to digital assets within a VR game known as Virtual Universe (VU). They are a form of in-game virtual currency." Uses Unreal Engine: https://www.unrealengine.com/en-US/what-is-unreal-engine-4

Blockdraw

https://www.blockdraw.it/

Our goal is for the Blockdraw Platform to become the Google Play of real-money games, where competitive gamers can put their money where their mouth is.

- White paper https://blockdraw.it/pdf/whitepaper.pdf
- https://bitcointalk.org/index.php?topic=3724645.0

Blockdraw is born

https://medium.com/blockdraw-platform/blockdraw-is-born-355f55663a5b

Code in GitHub (nothing yet) https://github.com/blockdraw

Mythical Games

http://mythical.games/

Mythical Games, a startup aiming to develop games that run on the EOS blockchain, has exited stealth mode and raised \$16 million in venture capital -

https://techcrunch.com/2018/11/16/blockchain-gaming-gets-a-boost-with-mythical-games-16m-seriesa/

Netherstorm

https://netherstorm.io/

- "is building a platform to distribute games and digital goods by connecting them to blockchain and providing both players and developers new incentives and opportunities to interact with each other."

Fortnite

Fortnite Store Accepts Crypto – But Only Monero

https://www.ccn.com/fortnite-store-accepts-crypto-but-only-monero/

Fortnite fans can now buy merchandise for the blockbuster online video game using the cryptocurrency <u>Monero</u> (XMR). Bitcoin payments are not yet accepted, reportedly due to privacy concerns.

Messaging

Line

LINE Launches Its 1st Cryptocurrency 'LINK' https://linecorp.com/en/pr/news/global/2018/20

"Unlike other cryptocurrencies or digital tokens, LINK will not make an Initial Coin Offering (ICO), but instead utilizes a reward system that gives users LINK as compensation for using certain services within the LINE ecosystem. For example, a user who has joined and participated in one of the decentralized app (dApp) services related to LINK can receive LINK as incentive."

- Image - https://scdn.line-apps.com/stf/linecorp/global/pr/LINKflow.png

Messaging Giant LINE Launches \$10 Million Token Venture Fund https://www.coindesk.com/messaging-giant-line-launches-10-million-token-venture-fund/

Telegram

https://telegram.org/

Massive Worldwide Cryptocurrency Adoption is about to take place—But not in the way you think it will!

https://medium.com/@altcoininvestor/massive-worldwide-cryptocurrency-adoption-is-about-to-take-p lace-but-not-in-the-way-you-think-it-2228a24d26d4

"Telegram has over 200 million users and growing at a rate of over 350,000 new users daily. Telegram + Cryptocurrency Mobile Payment = Killer App

"It's not just Telegram that is adopting cryptocurrency as a payment mechanism. Zuckerberg has confirmed his commitment to studying the potential of cryptocurrency within Facebook and Facebook alone could drive mass adoption of cryptocurrency as a common payment method.

"With Telegram, Facebook and many other popular messaging looking to cryptocurrency as a payment method—this may very well be the catalyst for worldwide adoption."

Social Networks

Third, A. and Domingue, J. (2017) The Irrefutable History of You: Distributed Ledgers and Semantics for Ubiquitous Personal Ratings Workshop: Re-coding Black Mirror at International Semantic Web Conference, Vienna, Austria <u>http://ceur-ws.org/Vol-1939/paper3.pdf</u> "Nosedive imagines a future in which every public interaction a person has is rated by the other parties, and every aspect of ones life depends on the overall rating computed from these."

Gitcoin - Kudos

- <u>https://gitcoin.co/</u>
- Kudos is a new way to show appreciation and build relationships.

Online Dating

Weird, but...

Svper

https://svper.com/

"replaces user profiles, pictures and text messages with instant video invitations. Users can see what people near them are doing (or planning to do), choose the event they would like to join, and meet them in person straight away. The more users socialize, the more SVP tokens they get!"

- White paper - <u>https://svper.com/whitepaper</u>

Software Development

Gitcoin

https://gitcoin.co/

"Gitcoin is the easiest way to leverage the open source community to incentivize or monetize work."

- Augment Your Team's Workflow <u>https://medium.com/gitcoin/tutorial-leverage-gitcoins-firehose-of-talent-to-do-more-faster-dc</u> <u>d39650fc5</u>
- Hire Global Talent <u>https://medium.com/gitcoin/hiring-with-gitcoin-d58679de37ac</u>
- Grow Your Open Source Community https://gitcoin.co/funding/new