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COMPREHENSIVE REPORT ON BLOCKCHAIN USE CASES ACROSS 55 INDUSTRIES

Report Summary

According to a recent report by CB Insights, "[b]lockchain tech has grown far beyond its beginnings in banking and cryptocurrency: In 2019, businesses are expected to spend $2.9B on the technology, up almost 90% from 2018."[1] As the report explains, "… the use cases for a transparent, verifiable register of transaction data are practically endless – especially since blockchain operates through a decentralized platform requiring no central supervision, making it resistant to fraud."[2] While certainly not exhaustive, the following table represents a majority of the use cases referenced in the CB Insights report, supplemented with additional and active use cases across industries. While research results in multiple blockchain projects for nearly every use case, I have limited my report to presenting no more than three primary blockchain projects per use case lest the report be overwhelmingly voluminous. Having reviewed each one of the cited blockchain projects as well as additional projects not cited in the report, I can confidently conclude that there are established and growing blockchain projects in every industry imaginable, on every corner of the earth.

Note On Citations

Due to time constraints, resources utilized to provide the in-table information are provided via hyperlink in the column entitled *Name/Link*, whilst secondary resource information is provided via footnotes repeated in a bibliography provided at the close of the report.

BLOCKCHAIN USE CASE	NAME/HYPERLINK	BLOCKCHAIN DESCRIPTION
3D Printing	SAMPL	Secure Additive Manufacturing Platform is a German project to develop a security solution (chain of trust) to trace parts straight to the 3D printer
Accounting	KPMG	Providing comprehensive blockchain advisory services for strategy development, systems integrations, PoC development, and more
	Deloitte	Offering comprehensive blockchain solutions to build tailored solutions
	PwC	Developed four strategies for blockchain success to assist clients with blockchain integration
Air Travel	KrisPay	Singapore Airlines digital wallet that turns miles and reward points into cryptocurrency that can be used with merchant partners
	Winding Tree	By using smart contracts and the ERC827 protocol, travelers can be directly connected with service providers, eliminating costly middlemen

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[1] *See*, Banking Is Only The Beginning: 55 Big Industries Blockchain Could Transform, CB Insights Research(2019), https://www.cbinsights.com/research/industries-disrupted-blockchain/ (last visited Aug 4, 2019).

[2] *See, Id.* at 1.

	Cool Cousin	Used by over 500,000 travelers worldwide to curate unique & reliable travel experiences
Banking	Crowdz	Barclays Bank blockchain B2B payments startup to help companies collect payments and automated digital invoices
	Ripple	Partnered with Santander and Western Union to improve cross-border transactions
	JPM Coin	JPMorgan issued its own digital token to facilitate faster transaction resolution time between institutional accounts.
Cannabis	Mile High Labs	CBD extractor applies blockchain and tracking technology to introduce produce provenance traceability for supply chain management
Car Leasing and Sales[3]	Dovu	A unified token, wallet and marketplace that rewards mobility data sharing to create a circular economy
	Digital CarPass	One of 5 blockchain Volkswagen initiatives, a cooperation between IOTA & VW that tracks vehicle data via IOTA blockchain technology
	Renault	In partnership with Microsoft and VISEO to create an immutable car maintenance history
Charity	BitGive	Donation platform for nonprofits that provides transparency and accountability to donors by sharing financial information and direct project results in real time
	BCF	Binance initiated Blockchain Charity Foundation blockchain-based donation portal that brings transparency to charitable organizations while specifically advancing the UN SDGs
	alice	A social funding and impact management platform built on Ethereum that incentivizes social organizations to operate transparently by delivering funds when they achieve their goals
Cloud Computing	Golem	Providing shared computing power, users can rent out their unused CPU capacity for tokens
Cloud Storage	Filecoin	An open-source, publicly accessible, blockchain-based, cooperative digital storage and data retrieval method built on top of IPFS
	Tardigrade	An enterprise, production-ready version of Storj, data files are sharded and distributed across the network's storage nodes
Commodity-backed Currency	Bananacoin	Releasing an Ethereum based token pegged to the export price of 1kg of "Lady Finger" bananas grown in Laos
	DGX	Token on the Singapore DigixDao that represents 1 gram of gold held in storage

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[3] *See*, Sam Mire, <u>Blockchain For Automotive: 12 Possible Use Cases</u>, Disruptor Daily (2019), https://www.disruptordaily.com/blockchain-use-cases-automotive/ (last visited Aug 4, 2019). (Providing multiple references for blockchain use cases across the automotive industry).

Construction, Architecture & Building	SiteSense	Built by Intelliwave, a blockchain built for construction transactions
Corporate Governance	Boardroom	Providing a complete blockchain governance platform empowering organizations to eliminate voter fraud
	Aragon	The world's first digital jurisdiction, be free to organize and collaborate in a global, bureaucracy-free organization
Credit Histories	Lumenous	First party data governance providing credit profile tools
	Bloom	Unique protocol for ID verification, risk assessment and credit reporting
	Enigma	A decentralized secure computation protocol solving privacy and scalability on the blockchain that can establish independent credit worthiness for borrowers
Critical Infrastructure Security	Xage	Deploying decentralized architecture for security, redundancy, self-healing during a cybersecurity attack and real-time autonomous operations for industrial systems
	Guardtime	A collaboration with EY and other insurance industry leaders, this is the world's first blockchain-enabled, automated marine insurance platform in production.
Crops & Agriculture	AgriDigital	Building blockchain-based solutions for global agricultural supply chains, real-time payments, digital escrows and supply chain finance
Crowdfunding	Weifund	An open platform for crowdfunding campaigns using contract templates or smart contracts
	OpenLedger	Digital crowdfunding platform
	RealShare	Uses blockchain, smart contracts, distributed ledgers, data analytics and online documentation to create a digital representation of real estate ownership
Crypto Exchanges	Coinbase	A global digital asset exchange company (GDAX) providing a digital currency wallet and platform for buying and selling leading digital currencies
	Kraken	A streamlined cryptocurrency-fiat and futures trading exchange with full reserves and supporting banking relationships
	Liquid	The world's largest blockchain-based fintech company and crypto-related financial services provider
Education & Academia	Sony Global Ed	Manage digital transcripts and scores on the Hyperledger blockchain
	Learning Machine	Issue blockchain-secure digital credentials for instant verification worldwide
Energy Management	Transactive Grid	LO3 and Consensys blockchain combined with smart meter tech to generate more efficient energy metrics and distribution

	Greenchain	Providing renewable energy solutions offerings throughout the entire value chain worldwide with energy traceability on a blockchain
	Iberdrola	Using energy supply chain verification to guarantee renewable energy sources
Federal Mail	USPS Report	USPS contracted with Swiss Economics to understand and identify blockchain applications to improve efficiencies in mail service
Firearms[4]	Guniary	Powered by Blocksafe, this is the world's first blockchain enabled gun owner diary
Fishing	Fishcoin	Blockchain seafood traceability and data ecosystem to trace data from harvest to consumption
Food & Beverage	IBM Food Trust	A collaborative network of stakeholders in the food supply chain working together to create a permissioned, immutable and shared record of food provenance, related data and more
Forecasting	Augur	A decentralized oracle and prediction market protocol, users can forecast events with incredible accuracy and be rewarded with tokens
Gambling	Wagerr	Chain games and peerless betting on a decentralized blockchain, Wagerr escrows stakes & verifies results
	Cashbet	A complete crypto-ready igaming platform for operators to run a legal and profitable igaming business
	TruePlay	Declaring itself to be a transparent and honest platform for gambling that cooperates with several market players
Gaming	Huntercoin	First developed to test blockchain in a virtual gaming environment, players collect coins in a virtual universe that resides inside the blockchain
	Unikoin Gold	The world's largest esports gaming utility token
	Xaya	Ultimate blockchain gaming and dApps platform
Gift Cards & Loyalty Programs	Gyft	As seen on *Ellen*, Gyft is a digital gift card manager that lets users buy, send and redeem blockchain powered gift cards
	Qiibee	The mainstream media recognized global standard for loyalty system management on a blockchain
	Loyyal	Reinventing customer incentives and loyalty rewards using blockchain

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[4] *See*, Sam Mire, Blockchain In The Firearms Industry: 6 Possible Use Cases, Disruptor Daily (2019), https://www.disruptordaily.com/blockchain-use-cases-firearms/ (last visited Aug 4, 2019) (Reporting on six possible use cases for blockchain in the firearms industry).

Gov't and Public Records&[5&6]	Smart Dubai	By 2020, the UAE intends to have all visa applications, bill payments and license renewals transaction digitally on a blockchain
	Delaware Blockchain Initiative	Working together with IBM to migrate Delaware's corporate franchise filings to the blockchain
	e-Estonia	The most advanced digital society in the world offered by Estonia
Healthcare	MedicalChain	Using blockchain to securely store and share electronic health care information
	GEM	In partnership with Philips to develop a shared, universal infrastructure for a patient centric healthcare ecosystem
	Hu-manity	Using IBM Hyperledger to develop a blockchain that enables patients to turn their medical data into money
Hedge Funds	Numer.ai	Bringing network effect to finance by incentivizing data scientists with tokens to develop an AI hedge fund
Human Resources	Chronobank	Users sell labor time in their given profession direct to employers disintermediating recruiters
Industrial IOT & Mesh Networking	ADEPT	IBM and Samsung collaborate to build a distributed network of devices, a decentralized IoT
	Filament	Providing comprehensive blockchain hardware and solution development to create new business models and more efficient revenue streams
Insurance	Lenderbot	Deloitte, Stratumn and Lemon Way built the first micro-insurance PoC for consumers to enroll in customized insurance plans using messaging apps
	Accenture	Co-innovates blockchains with clients to develop key insurance processes into blockchain-ready procedures and smart contracts
	RiskBlock Alliance	An global industry organization comprised of insurance companies dedicated to directing the governance and development, strategy and direction, of blockchain insurtechs
Internet Advertising	Brave	Earn rewards by anonymously viewing privacy-respecting ads that supports content creators you love
	Snov.io	Blockchain-based lead generation tool and cold outreach automation platform
Internet Identity & DNS	Blockstack	The first SEC approved Reg A+ STO, Blockstack provides SSID on a new blockchain powered by Stacks

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[5] *See,* Matthew E. Kohen & Justin S. Wales, State Regulations on Virtual Currency and Blockchain Technologies, Carlton Fields (2019), https://www.carltonfields.com/insights/publications/2018/state-regulations-on-virtual-currency-and-blockchain-technologies (last visited Aug 4, 2019) (Providing a comprehensive state by state analysis of blockchain related legislation).

[6] *See,* Smart Contracts State Legislation, Sagewise (2019), https://www.sagewise.io/smart-contracts-state-legislation/ (last visited Aug 4, 2019) (Reporting on smart contract legislation by state).

	uPort	Identity and messaging protocols that form an open identity layer for the decentralized web including a self-sovereign wallet
	WFP Building Blocks	World Food Programme uses blockchain to provide digital ID and resources to Syrian refugees in Jordan
IP Rights	Muzika	A music blockchain ecosystem led by Forbes awarded partners working to solve the problems of the imbalance in economic distribution, multiple layers of middlemen and digital piracy
	Mycelia	A research and development hub for music makers that aims to provide direct payment between artists and consumers
	Bernstein	Blockchain solutions for creating a digital trail of innovation processes to secure trade secrets, enhance contracts, establish prior art and make copyright claims
Law Enforcement	CryptoSeal	Tamper-proof containers with NFC chips to register container contents on a blockchain
	Elliptic	Providing blockchain analytics to financial institutions and cryptocurrency companies for risk management and regulatory compliance
	Leonovus	Blockchain hardened, software-defined data storage solution to preserve chain of custody
Libraries	SJSU iSchool	While there are no current use cases, blockchain in applications in libraries is under serious investigation
Messaging Apps	Telegram	In-house cryptocurrency circumvents remittance fees for international payments and enables affordable micropayments
	Kik	Earn Kin tokens for engaging with brands, reporting bugs, promoting causes and more, to redeem on Kik community goods and services
	Line	Releasing 800 million tokens to users as a reward system for engaging on the platform which can be used to buy stickers, webtoons and other services on the app
Pharma	FDA Pilot Program	IBM, KPMG, Merk and Walmart team up with the FDA to develop an interoperable system for Rx drug distribution
Photography	Kodakone	Blockchain for managing digital image rights
Public Assistance	GovCoin Systems	Partnered with Barclays, PWN npower and University College London for a pilot project to deliver welfare payments in cryptocurrency
	CSIRO's Data61	CSIRO's Data61 and the Commonwealth Bank of Australia conducted a smart money trial to manage payments for Australia's National Disability Insurance Scheme using Ethereum smart contracts
Public Transportation	DOVU	Users of public transportation share their community and transit data and are rewarded with tokens

Publishing	Authorship	Writers can publish their work on the blockchain platform which readers can purchaser with Authorship Tokens (ATS) with writers receiving 90% of the royalties
	PageMajik	A workflow management system for publishing that is in the process of adding blockchain
Real Estate	Propy	Blockchain-based real estate transactions inclusive of smart contract transactions enabling purchases using fiat and/or crypto
	Ubitquity	Enterprise-ready blockchain-based real estate platform and API to ensure the authenticity of title
Retail	OpenBazaar	An open source project for e-commence transactions in a fully decentralized marketplace using crypto as a medium of exchange
	Aura	A smart contract provenance platform built by Louis Voitton, ConsenSys and Microsoft to prove the authenticity of luxury goods
Ride Sharing	Arcade City	A new P2P service that allows drivers to charge their own rates and accept payment themselves appealing to professional drivers
Sports Management	Eventchain	Using smart contracts to combat ticket scalping
	Blockparty	Enabling P2P ticket resale
	SportyCo	Microfinancing of crypto sponsorships for athletes
Stock Trading	STOCKS	BUX and ABN AMRO have joined forces to build a blockchain platform for a commission-free stock trading mobile app called "STOCKS"
	TØ.com	Using a proprietary blockchain and strategic partnership, tZERO has created a two-sided network to democratize access to capital markets
	Sequence	Helped connect Nasdaq's stock exchange and Citi's banking infrastructure with live blockchain integration
Supply Chain Management	TradeLens	An IBM-Maersk blockchain providing a single, secure source of shipping data that enables more efficient global trade
	Provenance	Gathering key information for transparent and trackable products from cradle to grave
	Tracr	Establishing authenticity and traceability of the diamond trade to abolish the sale of conflict gems
Trucking	BiTA	Blockchain in Transport Alliance is the largest commercial blockchain alliance in the world with a mission of driving adoption of blockchain solutions for the industry
Video Streaming	VideoCoin	A decentralized video platform for creating, storing and distributing video content on a blockchain
	Livepeer	Open source video infrastructure services built on Ethereum offering affordable, reliable video encoding
Voting	Follow My Vote	Currently in beta version, votes registered on a blockchain leave a verifiable end-to-end audit trail to ensure all votes are legitimate.

	VoteWatcher	Next generation voting and election services built on a blockchain
	Votem	A mobile voting platform, the U.S. Election Assistance Commission announced Votem would participate in its voting system testing and certification program
Waste Management	Plastic Bank	Incentivizes plastic recycling by offering tokens for plastic redeemable for goods and services
Wills & Inheritances	Heir	Next generation estate planning on a blockchain
	Blockchain Apparatus	The future of will administration using smart contracts operation on a blockchain
	WATC	Future proofing your last will and testament by executing your final wishes with smart contracts on a blockchain

BIBLIOGRAPHY

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