The background features a dark grey grid of dots that forms a large, curved, funnel-like shape. The dots are arranged in concentric, slightly overlapping lines that curve from the top left towards the bottom right, creating a sense of depth and movement.

# BLOCKS

White Paper

October 2020

# BLOCKS

## Abstract

Delivering a hybrid, Web 3 blockchain network architecture for consumers and enterprises

## Network Architecture

- Building blockchain tools for simplified global adoption in the mid-markets
- Providing enhanced search, cataloging, storage and trade standards in blockchain
- A new asset tokenization standard for personal and enterprise-based financial exchange

## BLOCKS Network

### a. Consumers

- Improved management and control of personal data
- Greater autonomy in financial and personal transactions
- Delivering reduced fee layers, middlemen across transaction layers

### b. Corporations

- Improved enterprise toolkits for scaled blockchain adoption
- Establishing clear governance and trustless B2C systems administration
- Product builders for decentralized customer data protections, storage and registry

### c. Governments

- Simple SDK's and toolkits for government systems design
- Creating public and private registries for Government (G2P) platforms
- Cataloging, storing and administering censorship-resistant design in governance

## Conclusion

- Develop use case portfolio across consumer, corporate and governments
- Deliver strategic pilot program rollouts in calendar year 2021 at global scale
- Deliver cross-chain functionalities around oracle and payment functionalities

## **Abstract**

The BLOCKS Network proposes a hybrid, blockchain-based Web 3 network that improves upon previous generations of blockchain projects, by working to solve for the "blockchain trilemma" tradeoffs of speed, scalability and security in consumer, corporate and government use cases.

BLOCKS uses an improved asset tokenization standard called ERC-777 on the Ethereum blockchain, which is reverse compatible with ERC-20 standards and offers cross-chain use cases for efficiency events like oracle functionality, trading, rebalancing, payments and settlements, where speed increases or gas and fee reductions are vital for scaling.

The BLOCKS Network provides simple mobile app, web portal and enterprise toolkits for customers, corporations and governments to use, tokenize, and build upon, blockchain technology at a more globally advanced scale in the mainstream mid-markets.

The BLOCKS Network proposes an architecture for the migration from Web 2, the internet of shared information, content, and files, to Web 3, which will be underpinned by the more autonomous exchange of transactional and economic value between consumers, corporations and governments.

## **BLOCKS – A Global Blockchain Network**

- **Consumers** - Trade, track, record and pay for assets on blockchain through a process called smart contracts and tokenization. Reducing fees, middlemen and personal data control compromises, while improving decentralized financial activity and inclusion.
- **Corporations** - Deliver more decentralized, blockchain-based Web 3 solutions that allow for shared customer data controls, product authentication and inventory and services tracking. Allowing corporations to develop systems that have more customer accountability, minimize customer data attack vectors and deliver shared or trustless administration of contractual obligations and services.
- **Governments** - Developing improved records keeping, cataloging and transparency in government systems design. Reducing bureaucracy, fees and middlemen in the administration of government-to-constituent (G2P) protocols and programs that are more citizen controlled, financially inclusive and censorship resistant in their design.

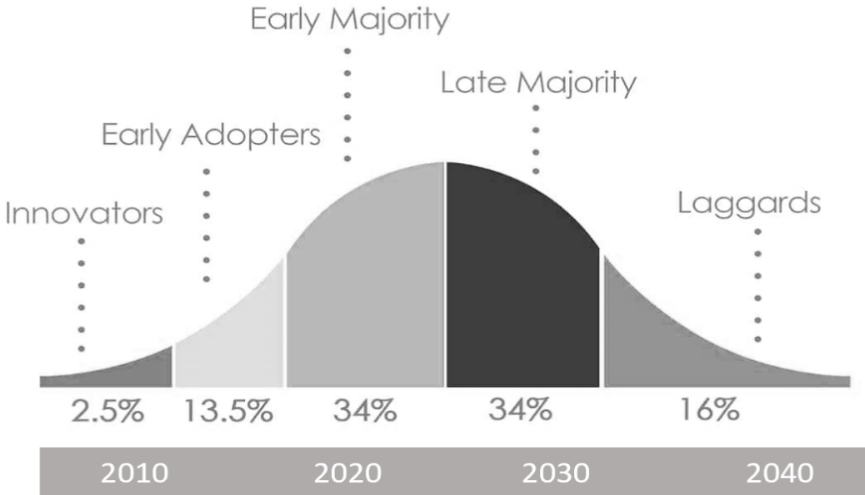
## **Market Research Shows Blockchain Networks Must Simplify Packaging, Protocols**

Market research by companies like Deloitte [1], reveals that over 41% of global, mid-market consumers and corporations find blockchain interesting as a developing technology, but that they have not yet adopted or invested in the technology, or joined consortia, because they find adoption and governance to be “inadequate or poorly defined,” and that decentralized blockchains have been made “unnecessarily complex” by the initial wave of developers and in the space.

An additional 61% of corporations note that their exploration of blockchain is now being done on corporate-controlled or centralized chains, due to a lack of contact, toolkits and trust within decentralized projects and their governance models, or lack thereof. The purpose of the BLOCKS Network is to simplify blockchain tools, points of contacts and governance, to ensure that decentralized blockchain is further explored by customers, corporations and governments as a more visible and transparent way forward for the future of a data-driven web.

### The Decade Ahead Will Determine Global Blockchain Adoption Rates in the Mid-Markets

In the same way that historical networks like Netscape Navigator simplified internet 1.0 search for customers in the 1990’s, and the Apple Store simplified mobile web 2.0 applications in the 2010’s, the BLOCKS Network simplifies a new, blockchain-based Web 3.0, into simple mobile applications and web tools, so that customers, Fortune 500 enterprises and Governments can begin using this powerful new technology from pilot tests to global scale in the 2020’s.



### Customer Applications

The BLOCKS Network has designed customer-friendly tools for customers to begin using the blockchain in a personalized format. These consumer applications will be distributed through a mobile app and a blockchain-based Web 3 client, that allows for improved global trade, tracking, payments and data storage for anyone with an internet connection.

- Tokenize and trade assets on BLOCK Token Engine®
- Establish contracts between themselves and others on BLOCK Contract Engine™
- Send payments faster, cheaper and easier around the world with BLOCKS Pay™
- Register and manage personal assets on BLOCK Personal Data Assurance™ engine
- Long-Term Roadmap: BLOCKS Navigator, blockchain-web browser and search engine

**a. BLOCKS Token Engine**

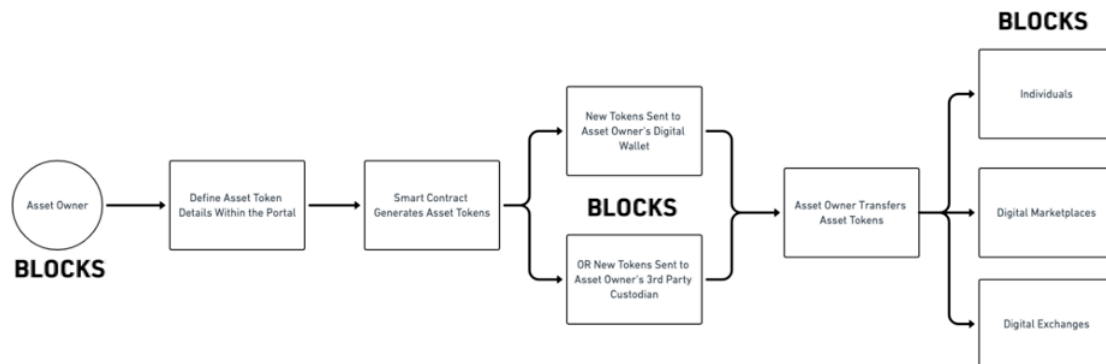
The BLOCKS Network utilizes a technology called a “BLOCKS Token Engine” to simplify the process of placing items for permanent record keeping or trade, between peers on the blockchain.

BLOCK Token Engine® will be used to tokenize a wide variety of assets that vary from traditional finance in the exchange of personal or peer driven marketplaces.

The tokenization of assets allows consumers to record, track, trade and pay for the peer-to-peer (P2P) and business-to-consumer (B2C) exchange of assets in more disintermediated and trustless ways, helping reduce fees and accelerate capital and asset exchange between people around the world.

The BLOCKS Network provides “Proof-of-Validation” (POV) to consumers or corporations seeking to do business with one another, in domiciles where traditional contracts or regulatory permissions inhibit free exchange or demand broker and fee layers that can slow down, if not fully encumber, capital or asset exchange transactions from happening.

**BLOCKS Token Engine**



**BLOCKS - An Improved, Global Asset Tokenization Standard**

The BLOCKS Network uses new blockchain technologies like tokenization, smart contracts and hooks to allow for customer transaction data to be better catalogued onto both public and private registries.

BLOCKS is an ERC-777 framework [2], with reverse compatibility into ERC-20, that allows for improved asset tokenization for customers, corporations and governments in this manner.

Personal and entity-based asset tokenization holds promising opportunities for the development and tracking of peer-to-peer trade, financial products, services and records keeping.

- Improved commerce between peers, in the absence of brokers and middlemen
- Improved corporate decentralization around web search, financial products and services
- Improved governance design around transparent record keeping and registries

The ability for assets and transactional data to migrate onto blockchain allows for a: improved, trustless contract systems, b) improved data storage and safety, c) shared systems design that allows for more transparency and shared controls between consumers and entities.

### **Immutable Trade, Transfer and Record Keeping of Assets across Networks**

Once tokenized, these newly issued assets can be viewed or directly transferred to trusted 3<sup>rd</sup> parties, such as an exchange, broker, or individual investor.

The BLOCK Contract Engine can be used as a means to verify a unique digital representation of ownership of the underlying asset. The engine lets individuals define the asset, equity, description, and various meta data of the particular asset on the web portal.

The strengths of the BLOCKS Registry and the BLOCKS Token Engine hold implications for physical and personal assets creation of new global trading markets, income opportunities, and the autonomous security of personal data and assets against censorship resistance in P2P, B2C and G2P contexts.

#### **b. BLOCKS Contract Engine™**

The BLOCKS Token Engine® issues new tokens via a smart contract that is accomplished by either staking or sending a certain number of BLOCKS to a generated QR code for verification. The issued asset will be added to the immutable ledger of the Ethereum blockchain.

### **Smart Contracts Govern Trustless Agreements Between Two People**

The BLOCKS Token Engine® issues new tokens via a smart contract that is accomplished by either staking or sending a certain number of BLOCKS to a generated

QR code for verification. The issued asset will be added to the immutable ledger of the Ethereum blockchain.

### c. BLOCKS Personal Data Assurance, Management and Storage

One of the largest governing concerns in the technology category at this time is the control, sale and management of personal data. The storage of personal data in a manner that is more decentralized, allows for improved data safety in systems design for consumers, who need to better control and guard their personal data.

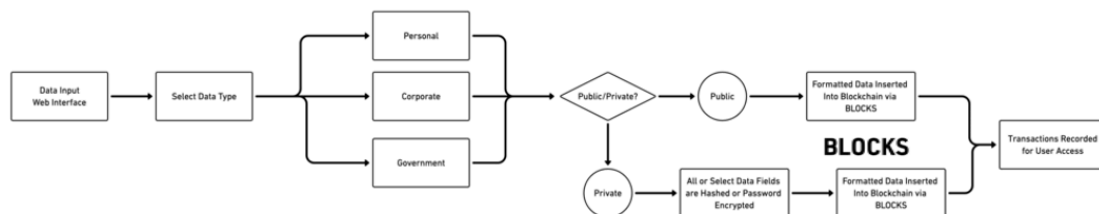
### Decentralizing Stored Citizen and Database Data Across Multiple Attack Vectors

Additionally, data storage is indicated on decentralized systems like blockchain, making use of BLOCKS storage capacity features like web torrents, in order to preserve and protect citizen data from both domestic, foreign or state-sponsored data attacks.

Reentrancy is a known exploit of smart contracts, and ERC-777 is no exception [3]. This attack can occur when a function makes an external call to an untrusted contract before it resolves any effects. External function calls are inherent in ERC-777s hooks [4].

Fortunately for BLOCKS, these exploits have already occurred in the wild, and solutions exist to mitigate future exploits. The BLOCKS smart contract will implement reentrancy guards on external functions to mitigate one of the most common exploits. Reentrancy guards, or mutex, places a lock on the contract state, which prevents cross-function reentrancy attacks.

## BLOCKS Personalized Data Storage



### BLOCKS Also Supportive of Minimized Attack Vectors in Big Data Storage

The BLOCKS Network can store large files of data by splitting the files among several BLOCKS transactions. The file data is then parsed, merged and used to create “infohashes” or “Magnet URIs” when uploaded to webtorrent [5] services. This process decentralizes file storage and content distribution directly through peer-to-peer browser connections.

### d. BLOCKS Payment Applications

BLOCKS Pay has been designed to execute cross-chain and stablecoin use cases to deliver product-market-fit for the client.

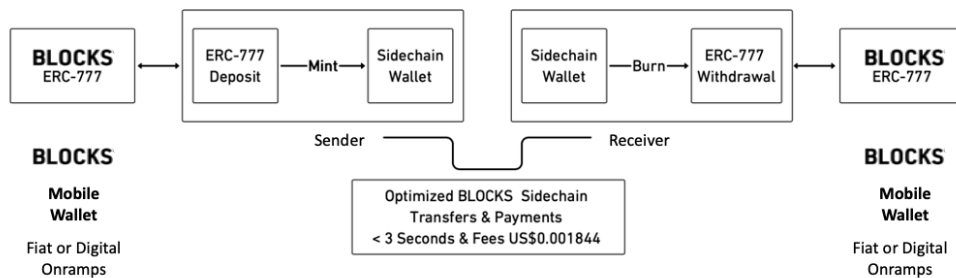
Parent blockchains and store-of-value blockchains can be slow and expensive for actions like global remittances or merchant payments, for which the fastest pace of send and settlement is indicated, as well as low fees for the customer or merchant.

The BLOCKS Pay app proposes performing cross-chain actions on top of payment networks like XLM – Stellar, with fast paced rail networks and low cost fee structures. BLOCKS Pay would deliver a process in which tokens would be deposited into the platform.

Equivalent tokens are then minted for use on the optimized sidechain. Sidechain BLOCKS have much faster confirmations & lower fees than tokens on the Ethereum network. Users can withdrawal the ERC20 tokens, which “burns” or destroys the equivalent sidechain tokens.

This process greatly reduces not only fees, but the environmental cost of sending money at scale versus some of the other larger, mega cap networks such as Bitcoin or Litecoin, which require Proof-of-Work (POW), mining and verification tasks that lead to heavier emissions.

## BLOCKS Global Payment Network



### Case Study: BLOCKS Network for The Kingdom of Tonga and the Oceania Region

In places like the Kingdom of Tonga, where the BLOCKS team recently presented in conjunction with the Royal Family of Tonga on behalf of their work within the UN 2030 Economic Sustainability Agenda, the top GDP contribution data point in the country is inbound remittances. [6]

According to the World Bank, the percentage of personal remittances received, as an expressed percentage of GDP, was 37.6%, making Tonga the highest of any country in the world for remittances as a percentage of GDP activity. [7]



A top priority of the UN 2030 Agenda is to reduce the cost of sending money to countries where fees lost directly input the direct GDP input and output production of both inbound recipients and outbound migratory labor pools. [8]

**BLOCKS Global Payment Network vs. Traditional Banking and Remittance Services**

According to the World Bank, the average cost in 2019 to send money from abroad to the Oceania Region was 12% in fees to the end-user on traditional banking or wire services layers who have entrenched in the market for decades on high fee, legacy systems. [9]

Using the BLOCKS Payment Network, customers can save up to 99% on their global payment and remittance fees. The goal of the United Nations 2030 Agenda is to reduce the cost of sending money to sub-5% by Calendar Year 2030. The BLOCKS Network can make this a realization by calendar year 2021 if they would like to accelerate this timetable at scale.

<b>Transfer Method</b>	<b>Amount Sent</b>	<b>Average Cost</b>	<b>Average Time</b>	<b>Customer Pays</b>
BLOCKS	\$1,000	< 1%	< 3 seconds	\$.0018
Banks / Wire Services	\$1,000	12%	3-5 days	\$120

**e. Summary of Consumer Products and Services on the BLOCKS Network**

These BLOCKS Network tools allow customers to better a) manage and control of their personal data, b) improve their technology backups and records keeping and c) perform P2P, B2C or G2P contractual, payment or financial services tasks that rely heavily on intermediaries such as attorneys, brokers, bankers and other processing middlemen who may add additional corporate fees or government bureaucratic layers to transactions.

It is further proposed that SMBs, Fortune 500 Enterprises and Governments use the BLOCKS Network to build more intelligent, inclusive and transparent systems designs for their customers and constituents.

**SMB’s and Fortune 500 Global Enterprise Applications**

In the same way that the Verizon Network serves mobile consumers, as well as SMBs and Fortune 500 enterprises with mobile wireless services, the BLOCKS Network has designed similar capability sets for not only personal use, but for Small and Medium Business (SMBs), Fortune 500 enterprises to reduce fees, eliminate redundancies and improve their transparency in the management of consumer data and records keeping.

BLOCKS Network has made available simple BLOCKS SDK's and toolkits to help these organizations a) migrate systems onto blockchain and b) create improved systems that allow for greater customer visibility, data controls and privacy settings, as well as improved data storage and security for their customers.

The BLOCKS Network allows SMBs and Fortune 500 Corporations to:

- Design and track financial products on the BLOCKS Fund Manager™
- Verify, track and authenticate supply chain and goods on BLOCKS Origin Assurance®
- Verify, track and share registration and ownership data on BLOCKS Title Assurance
- Create improved customer <> corporate (B2C) data controls on BLOCKS Registry

As new legislation emerges in countries like the United States to begin limiting the data usage and competitive actions of Web 2 - Mega Tech firms like Apple, Facebook, Microsoft and Google, the opportunities for more decentralized blockchain solutions may be a way forward.

The BLOCKS Network empowers more shared controls between customer and entity to ensure data is safely stored, managed and attributed between users and corporations or governments so that a system of checks and balances is established.

#### **a. BLOCKS Origin Assurance®**

BLOCKS has developed a product line called Origin Assurance®, that allows Customers, SMBs and Fortune 500 Enterprises to trade, track and pay for items with improved visibility, from farm-to-table and factory-to-floor. This helps ensure a) customer satisfaction, b) legal compliance and c) more fair trade and visible production terms and supply chains.

### **Mega Tech Marketplaces Accused of Promoting Fake Goods, Fraudulent Reviews**

A Wall Street Journal investigation in December 2019 found that Amazon, a US mega tech company with a \$1.6 Trillion Market Cap (USD), both certifies and recommends a variety of "Amazon's Choice" products that are either fake or unsafe to the consumer. [10]

This was underscored by an additional August 2019 BuzzFeed investigation, alleging similarly fake products, reviews and algorithm-gaming by both merchants and the marketplace. [11]

Additional concerns on both Amazon and Alibaba around sweatshop labor and overseas manufacturing conditions [12] also provide timely discussions around improvements in supply chain manufacturing, goods authentication and tracking technologies on the blockchain by trusted, third parties.

**BLOCKS Origin Assurance® - Track and Authenticate Brands, Goods and Supply Chain**

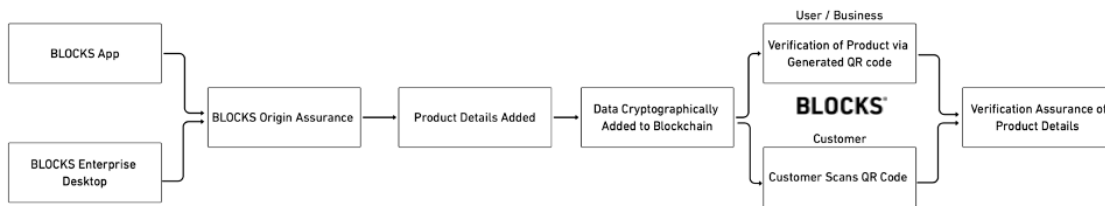
BLOCKS Network provides toolkits for the labeling, tracking and trading of authenticated goods for global brands, supply chain, logistics, merchants, retailers and marketplaces.

With BLOCKS Origin Assurance®, both producers and consumers of goods are linked together in communication via BLOCKS Mobile App and BLOCKS Web client, for simple scan, track and authentication of goods.

**b. BLOCKS Fund Builder**

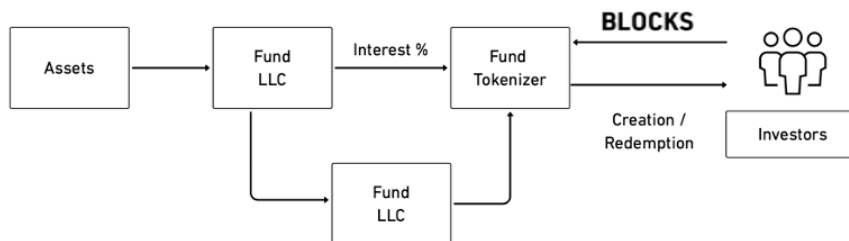
BLOCKS has developed toolkits for the development of improved financial products.

**BLOCKS Origin Assurance®**



These products can be used to tokenize and manage traditional or alternative asset funds on the blockchain.

**BLOCKS Fund Builder**



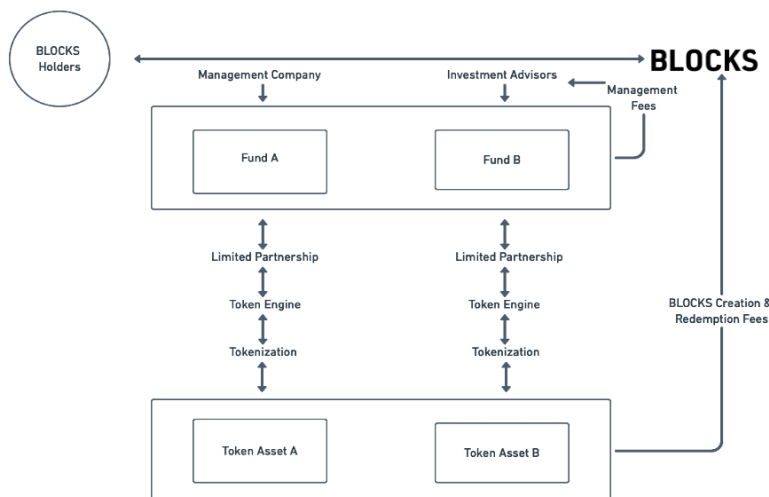
**c. BLOCKS for Fund, Asset Managers and Loan Originators**

The administration of alternative assets, funds, credit and loan origination and derivatives products can be implemented on the BLOCKS Network. This can be facilitated through the development of:

BLOCKS can be used to further innovate decentralized financial products for retail and institutional investors beyond traditional stocks and bonds. Through the development of the BLOCKS tokenization platform:

- Originators, fund managers and private credit issuers may unlock new sources of capital and participation from the global markets and marketplaces.
- Unique offerings improve financial access to private credit opportunities in areas such as:
  - Art
  - Automotive
  - Construction
  - Marine
  - Real Estate
- Personal and business access to asset tokenization opens up new opportunities for asset collateralization to secure financing.
- Tokenized assets can be sold through online marketplaces, which offer fractional ownership and ROI among a pool of investors.

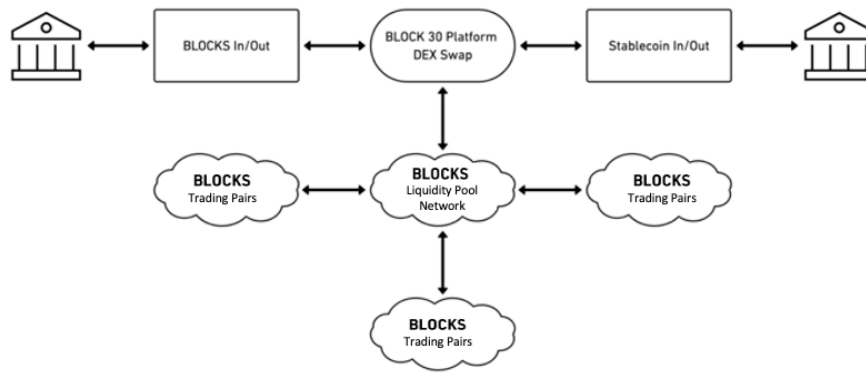
## BLOCKS Fund Manager Toolkits



### a. BLOCKS For DeFi Product Builders and Digital Exchanges

The BLOCKS Network also has a number of additional applications within Decentralized Exchange environments. This includes DeFi product tokenization, liquidity, derivatives, platform and asset swaps, using implementations such as Uniswap and stablecoins.

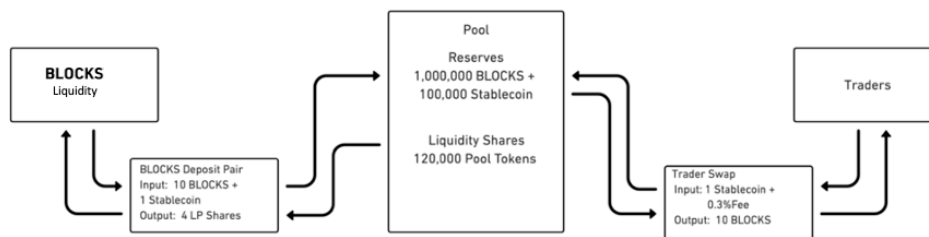
## BLOCKS DEX Platform Swap



### b. BLOCKS For Liquidity Pools

Individuals can also become Uniswap liquidity providers for BLOCKS. Liquidity providers are entitled to 0.3% of all trade volume which is distributed proportionally to all providers as Pool Tokens. This can provide a substantial revenue opportunity for participants. [13]

## BLOCKS® DEX Liquidity Pools



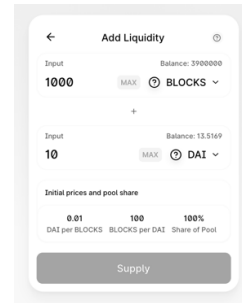
### c. BLOCKS For DeFi Products and Staking

BLOCKS can also be used as collateral for BLOCK Exchange Traded (ETX) products. Customers receive a stablecoin as a loan in proportion to the amount of BLOCKS staked and then receive exposure and discounts to BLOCK ETX products while maintaining their BLOCKS balance.

### d. BLOCKS Exchange Traded Index (ETX) Products

The BLOCKS Network is already being used by boutique firms, like BLOCK 30 Financial, to develop some of the top performing financial products in the world, outperforming all \$63 Trillion of registered Mutual Funds and ETFs in Calendar Year 2020.

## BLOCKS DEX Staking



There are currently over 7,945 Mutual Funds [14], and 2,096 ETFs [15] listed on the US trading markets alone, meaning that the creation of themed and indexed baskets of financial products is a proven way in which to drive mid-market customers to investment and trading exchanges.

We propose that the fundamental nature of these constructs is lasting and instructive. It can be used to develop similar product lines in the digital asset trading markets, to help welcome new retail and institutional investors from the mid-markets (vs. early adopters).

Further, the underlying use of digital technologies like blockchain – most notably around tokenization and smart contracts – will allow for lower fees, faster speeds, and more flexible product construction than predecessor product lines like Mutual Funds and ETFs.

The implications for the tokenization of stocks, bonds, physical assets, personal assets, and decentralized financial networks are highly promising and will require new financial products, such as the BLOCK 30 Financial – Exchange Traded Index (ETX) product lines detailed in the paragraphs below.

### A New Era of Digital, Financial Products on the BLOCKS Network

The opportunity presents for a new era of digital and multi-asset strategy investment products that have faster 24/7 processing speeds, lower fees and automated smart contract and rebalancing capabilities.

The simplification of “the top performing asset class of the decade,” into more manageable, and well indexed, financial products on the BLOCKS Network will allow for greater mid-market inflows into digital assets as an investment category that can deliver improved Sharpe Ratio and potential long-term returns to portfolios.

In 2020, for example, the iShares ETFs by Blackrock product line will boast over 900 ETFs and nearly \$2 Trillion in AUM. These financial products are often underpinned by

market indexes, themed segmentation, and rebalancing decisions that guide the composition of constituent assets inside each ETF.

### Case Study - BLOCK 30 Financial Running on the BLOCKS Network

BLOCKS Network toolkits are already being utilized by boutique financial firms, like BLOCKS 30 Financial, which has built products that are outperforming over \$63 Trillion of Mutual Funds and ETFs in calendar year 2020.

Further information on this is included in the: “BLOCK 30 Financial – Enterprise Case Study” white paper on the BLOCKS Network website. These include market indexes, active and thematic investment strategies for digital assets and will be scaling to multiasset, fractional and derivatives products over time.

### BLOCKS ETXs - Outperforming \$63 Trillion of Mutual Funds and ETFs [16]

Top Performing ETFs	Returns YTD (%)	BLOCK ETXs	Returns YTD (%)
TAN – Invesco Solar ETF	81.1%	BLOCK Government	155.2%
ARKG – ARK Genomic Revolution ETF	79.4%	BLOCK 5	154.7%
ARKW – ARK Next Generation Internet ETF	78.9%	BLOCKS Platform	151.9%
ARKK – ARK Innovation ETF	75.6%	BLOCKS 10	149.7%
ONLN – Proshares Online Retail ETF	67.6%	BLOCKS DeFi	142%

BLOCK Index ETXs	Product Description	Performance (YTD)
BLOCK 3	Basic exposure original UTXO blockchains	179%
BLOCK 5	Mirrored after the “FAANG” group of stocks. Exposure to top digital assets in terms of speed, community and decentralization.	180%
BLOCK 10	Hybrid mix of platform, global enterprise, supply chain, payments and enterprise blockchains	167%
BLOCK 15	Hybrid mix of platform, global enterprise, supply chain, payments and enterprise blockchains	134%
BLOCK 20	Hybrid mix of platform, global enterprise, supply chain, payments and enterprise blockchains with a blend of critical input factors	140%
BLOCK 30	Mirrored after the DOW 30 and a blend of critical inputs such as market cap, price, circulating supply, sector weighting and trading volume	140%

BLOCK Thematic ETXs	Product Description	Performance (YTD)
BLOCK Payments	Exposure to a mixed basket of payment coins that can be used in lieu of USD vs credit cards, etc.	179%
BLOCK Government	Blockchains being tested for use in things like universal ID, voting verification, contact tracing, etc. by governments and other public sector agencies.	180%

BLOCK Platform	Allow for the development of blockchain based applications.	167%
BLOCK Global Enterprise	A mixed basket of Fortune 500 blockchains that are being used in automotive, retail, supply chain, etc. for testing on global platforms	134%
BLOCK Privacy	A new era of privacy in payments for those that prefer to remain anonymous in their payments at hotels, remittances, etc.	140%
BLOCK DeFi	A mix of various digital assets that are paving the way for the new wave of blockchain based finance.	140%

<b>BLOCK Active ETXs</b>	<b>Product Description</b>	<b>Performance (YTD)</b>
BLOCK Oscillators	A trading strategy based on three common indicators	111%
BLOCK MACD & VI	Block 30 version of MACD and VI strategy	105%
BLOCK RSI Fractals	Taking advantage of trends in the RSI	79%
BLOCK RSI Momentum	Finding momentum changes in RSI	74%
BLOCK Candle Body Fractals	Finding trends where body trendlines break	65%
BLOCK RSI 60/40	Tracking new breaks of the 40 and 60 RSI values	61%

## **Government Systems Design and Applications**

BLOCKS Network can also be used immediately for improved transparency of administration and bureaucracy reduction in governance systems design. The BLOCKS Network can be used to develop improved, shared databases between corporations and governments.

### **a. BLOCKS Title Assurance**

In emerging markets, for example, land and home titles are at only around 30% penetration of the consumer markets, making this a high priority issue for UN 2030 Agenda to ensure population-based economic stability and government censorship resistance.

Further, for physical assets that require greater verification certainty, a product Title Assurance is used to reconcile the ownership of the property against a secured database—then querying a title registry regarding ownership of the property.

Title Assurance has implications for property, physical and esoteric assets, and governments that require a secure and immutable ledger. Smart contracts are used to tokenize unique assets. The resulting non-fungible token (NFT) provides proof of ownership that can be verified against the government database and the blockchain.

Verifying the rights or title to a particular property is an essential step for social and economic development. According to the World Bank, only 30% of the world’s population has a legally registered title to their land. [17]



According to Ede Ijjasez-Vasquez, the World Bank Senior Director for the Social, Urban, Rural, and Resilience Global Practice: “Addressing land tenure issues is at the center of building sustainable communities – countries, regions, cities, and rural communities need secure rights, clear boundaries, and accessible land services for economic growth.” [18]

BLOCKS Network tokens can be used directly in certain instances where decentralized ownership verification must be relied upon in the event government systems are not available. By adding unique textual data to a BLOCKS transaction, the token allows for direct access to immutable records on the blockchain.

### **b. Improving Censorship-Resistant Repositories Between Citizens and Governments**

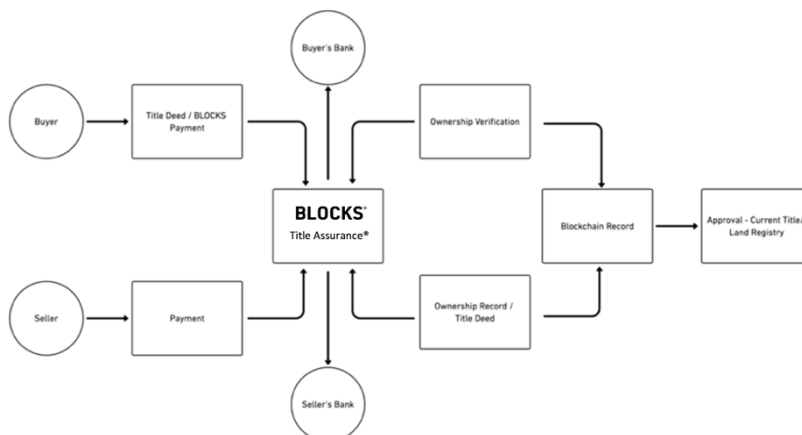
The tokenization of assets into BLOCKS allows for a) trustless smart contracts between citizen and governments, b) registry of assets into search facilities that are visible to public or permissioned databases to ensure safe data storage and improved records keeping.

A forged deed or mortgage, for example, can have a very real — often devastating — impact on the owner. Since the forger’s name will appear on the land records, the forger can sometimes deceive a third party into “buying” the property or a lender to take a “mortgage” of the nonexistent title.

The owner cannot simply ignore the forgery unless the defrauded buyer or lender accepts the owner’s account and disclaims any interest in the property. That rarely happens. Usually owners must file a lawsuit to clear title. Most owners need a lawyer to do that, and few lawyers are willing to handle such matters for free. The litigation can be lengthy, involving expert testimony as to the validity of the signatures, and prohibitively expensive.

Although the owner has no legal obligation to repay the forger’s loan, the owner may ultimately feel constrained to do so as a practical matter. Some owners don’t learn of the forged mortgage until the lender moves to foreclose the mortgage, or even after the foreclosure process is complete and title has passed again. Bringing legal action at that late stage can be particularly expensive.

### **BLOCKS Title Assurance**



### **c. BLOCKS Registry - Creating Mutually Visible Blockchain Management**

The proposal of public or privately permissioned, Government-to-Customer (G2P) portals on BLOCKS Registry, which can serve as a decentralized, censorship-resistant and immutable “parking lots” for the safer storage of mutually visible RFP’s, financial accounts, data, record keeping, voting ledgers and mutual agreements between citizens, corporations and governments.

#### **Case Study – US Patent and Trademark (USPTO) TESS Registration System**

An example of this is the United States Patent and Trademark Office – TESS System, which today is a heavily dated and disorganized search browser client that is used to look up trademarks and patent filings in the United States [19].

What is a disaggregated assembly links, could be re-assembled on The BLOCKS Network, into a verified USPTO blockchain registry with improved visibility, verified search results, hierarchical marketplace categorizations of available trademarks and time-locked smart contracts between consumers, corporations and government.

The use of simple BLOCKS Network government systems design and toolkits will not only: a) reduce bureaucracy and administration costs, b) sync and improve the administration of RFP’s, public filings and private bid markets and c) improve government revenues and GDPs through a more efficient data storage, registries, payment systems and bid-buy marketplaces with more automated settings and trustless smart contracts, for improved transparency and efficient systems design in government.

#### **Long Term Roadmap**

The state of Web 2, which has essentially evolved as heavily aggregated search, UGC / content sharing and web development tools on top of the “infodump” that was Web 1 in the 1990’s, is an extreme consolidation around Mega Tech companies that are seeing new rounds of anti-competitive and anti-trust pressures from US, EU Governments and others.

At stake is the use of personal customer data, the slow creep of politics and social engineering into the narrowing windows in which digital and omni-channel media is served and consumed by over 7.5 billion potential global consumers across the pyramid. This will only accelerate as more consumers come online with smartphones, internet connectivity and cradle-to-grave digital connections around the world.

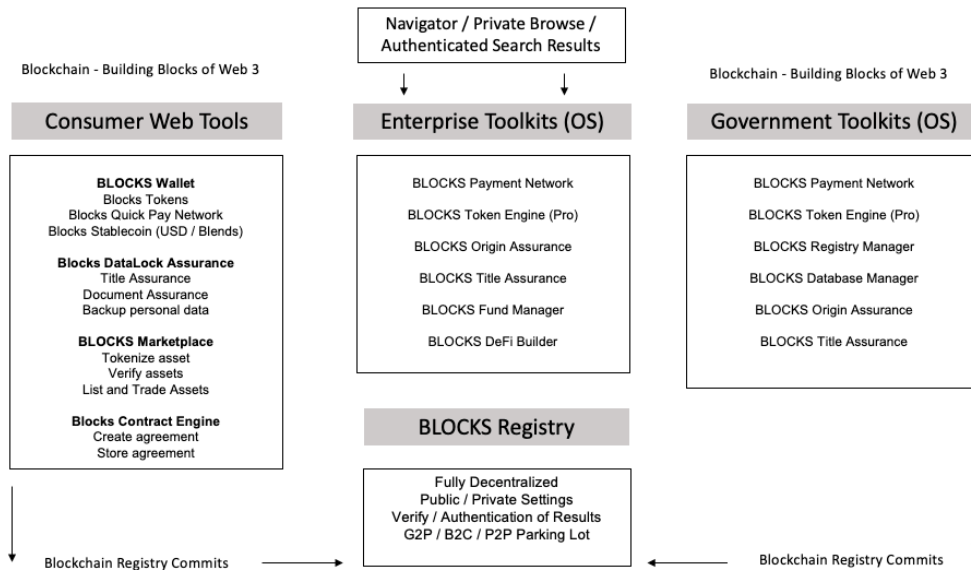
The need for improvements in Web 3 across personal data controls, private browsing, authenticated search results, financial services inclusion, disintermediated marketplaces and asset trade, as well as fairly produced and authenticated goods tracking have all been considered in the development of the BLOCKS Network architecture.

Depending on capital availabilities of the project over its lifecycle, the BLOCKS Team proposes the development of an open source, free and alternative Web 3 architecture that is fully decentralized and available to consumers, corporations and governments to build better products for themselves and each other. A better Web 3 can be built that is owned, operated by and inclusive of a more full global pyramid.

## Web 3 Roadmap

# BLOCKS

A Blockchain Verified, Web 3 Network Architecture Proposal



## Legal Disclaimers

The BLOCKS Network is intended as a fully decentralized, open source, Web 3 project that will require the contribution and development of global participants across the network and is not owned by anyone.

The BLOCKS Network team reserves the right to revisit, adjust or cancel any of the above proposed network upgrades, ideations, initiatives or developments, based on any variety of reasons ranging from capital or labor availability constraints, to unforeseen regulatory changes in blockchain-based laws.

This paper contains current thinking, is non-binding to any participants and will be adjusted as new planned and existing open-source technologies and applications become available, or are developed, for the further scaling, quality improvements or decentralization of The BLOCKS Network in service of its end users and developers.

A BLOCKS Foundation will be established that will fund areas like education, research, network upgrades, development tools and grant applications for development on blockchain-based networks or future technologies, such as quantum computing

Lead Author: Brian Foote

Co-Authors: Adam Wolfe, Jeff Hinshaw, M.B.A Finance, Calvin Weight, M.S. Finance

Educational Backgrounds: University of Pennsylvania, University of California at Los Angeles, Massachusetts Institute of Technology (MIT) Blockchain Certification Program, University of California at Santa Barbara, California State at Long Beach, San Diego State University - College of Business, Brigham Young University - International Finance, University of Utah Finance

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## References

- [1] Breaking blockchain open Deloitte's 2018 global blockchain survey, URL: <https://www2.deloitte.com/content/dam/Deloitte/cz/Documents/financial-services/cz-2018-deloitte-global-blockchain-survey.pdf>
- [2] OpenZeppelin documentation, Contracts, Tokens, URL: <https://docs.openzeppelin.com/contracts/3.x/tokens>
- [3] July 29, 2019 OpenZeppelin blog, Exploiting Uniswap: from reentrancy to actual profit URL: <https://blog.openzeppelin.com/exploiting-uniswap-from-reentrancy-to-actual-profit/>
- [4] Jacques Dafflon, Jordi Baylina, Thomas Shababi, "EIP-777: ERC777 Token Standard," *Ethereum Improvement Proposals*, no. 777, November 2017. [Online serial]. Available: <https://eips.ethereum.org/EIPS/eip-777>.
- [5] WebTorrent Documentation <https://github.com/webtorrent/webtorrent>
- [6] Personal remittances received (as % of GDP) in 2019, Source World Bank 2020, URL: [https://migrationdataportal.org/?i=remit\\_re\\_gdp&t=2019](https://migrationdataportal.org/?i=remit_re_gdp&t=2019)
- [7] <https://data.worldbank.org/indicator/BX.TRF.PWKR.DT.GD.ZS?locations=TO>
- [8] Personal remittances, received (% of GDP) - Tonga <https://sustainabledevelopment.un.org/post2015/transformingourworld>
- [9] World Migration Report 2020 [https://www.un.org/sites/un2.un.org/files/wmr\\_2020.pdf](https://www.un.org/sites/un2.un.org/files/wmr_2020.pdf)

[10] Shane Shifflet, Alexandra Berzon, Dana Mattioli, “Amazon Choice” Isn’t the Endorsement It Appears. URL: <https://www.wsj.com/articles/amazons-choice-isnt-the-endorsement-it-appears-11577035151>

[11] Annie Palmer, December 23, 2019 “The ‘Amazon Choice’ badge recommends products that are unsafe or fake, WSJ investigation finds”  
<https://www.cnbc.com/2019/12/23/amazon-choice-badge-recommends-unsafe-fake-products.html>

[12] Gethin Chamberlain, Underpaid and exhausted: the human cost of your Kindle, June 8, 2018. URL: <https://www.theguardian.com/technology/2018/jun/09/human-cost-kindle-amazon-china-foxconn-jeff-bezos>

[13] ConsenSys / Uniswap-audit-report-2018-12, URL:  
<https://github.com/ConsenSys/Uniswap-audit-report-2018-12#31-liquidity-pool-can-be-stolen-in-some-tokens-eg-erc-777-29>

[14] Number of Mutual Funds in the United States from 1997 to 2019, URL:  
<https://www.statista.com/statistics/255590/number-of-mutual-fund-companies-in-the-united-states/>

[15] Statista, “*Number of Exchange Traded Funds (ETFs) in the United States from 2003 to 2019*”, URL: <https://www.statista.com/statistics/350525/number-etfs-usa/>

[16] Jeff Reeves, “*10 Best-Performing ETFs of 2020*”, URL:  
<https://money.usnews.com/investing/etfs/slideshows/best-performing-etfs>

[17] World Bank, “*Why Secure Land Rights Matter*”, March 24, 2017, URL:  
<https://www.worldbank.org/en/news/feature/2017/03/24/why-secure-land-rights-matter>

[18] Laura Tuck and Wael Zakout “*7 reasons for land and property rights to be at the top of the global agenda*”, March 25, 2019, URL: <https://blogs.worldbank.org/voices/7-reasons-land-and-property-rights-be-top-global-agenda>

[19] United States Patent and Trademark Office <https://www.uspto.gov>