BNC.

A GENERAL TAXONOMY FOR CRYPTOGRAPHIC ASSETS

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About
Brave New Coin

Brave New Coin's mission is to be the leader in delivering the most accurate, accessible, and comprehensive blockchain data solutions and insights, in ways that anticipate and respond to the needs of an evolving market.

BNC is committed to providing the type of trusted information, technical analysis and research that will empower and inform stakeholders across the cryptographic asset marketplace.

To that end, The General Taxonomy for Cryptographic Assets has been curated to deliver on the goal of a comprehensive asset classification system which provides a common frame-of-reference for all sector participants.

Foreword

Today the cryptographic asset sector's market capitalization is in the hundreds of billions, with a rapidly evolving user community. Since establishing Brave New Coin in 2014 it has been our goal to provide the data, tools and insights needed to support this market as it matures into a dominant asset class.

BNC has created the General Taxonomy in response to community requests for greater sector transparency and a uniform classification system for the ever-expanding universe of cryptographic assets. Its intended audience is:

- ◉ **Asset Managers**
- ◉ **Regulators**
- ◉ **Product Owners**
- ◉ **Researchers**
- ◉ **Developers**
- ◉ **Industry Executives**

At BNC we want to support an engaged user community and we encourage you to explore, share and utilize the General Taxonomy you see fit.* Finally, I want to add that this document is just the beginning and we welcome your feedback on how we can continue to improve the taxonomy and its relevance to you and your industry sector.

Warmest Regards

Fran Strajnar
CEO

Author Profile

Rafael Delfin (BEcon) is the Head of Research at Brave New Coin. With a background in economics, his dominant academic focus lies at the intersection of quantitative finance, cryptographic assets and the nascent discipline of crypto economics. Rafael is a member of several industry organizations promoting distributed ledger technology solutions including the Bitcoin Foundation, the North American Blockchain Association, and the Government Blockchain Association. His 2014 thesis "The Fractal Nature of Bitcoin: Evidence from Wavelet Power Spectra," was published in Springer's 2016 Trends in Mathematical Economics.

Acknowledgements

The General Taxonomy for Cryptographic Assets: An Overview

The advent of distributed ledger technology is facilitating collaboration across world markets — and the tracking of a vast range of transactions and interactions. For this nascent industry to be effectively evaluated and interpreted a consistent and comprehensive global classification is required.

To that end, Brave New Coin has developed the General Taxonomy for Cryptographic Assets — a tool that seeks to capture the breadth, depth and evolution of distributed ledger technology-based assets across industry sectors globally, as well as to advance the investigation of the assets being classified.

The General Taxonomy for Cryptographic Assets is a hierarchical asset classification system. It introduces cryptographic assets as a new superclass of asset in Robert Greer's seminal framework, further divided in two families, and four subclasses of cryptographic assets.

General cryptographic assets are classified by over 70+ metrics, both quantitatively and qualitatively, while tokens with a specific market focus are classified under both the North American Industry Classification System (NAICS) and a proprietary industry classification according to its fundamental economic features and activity.

The General Taxonomy for Cryptographic Assets is a global classification standard developed for all market and ecosystem participants: investors, regulators, asset managers, custodians, research teams, developers and enthusiasts.

The General Taxonomy enables users to:

Judge the strengths and weaknesses of different distributed protocols in an objective and consistent manner

Assess the impact of distributed-ledger-based assets on global, regional and/or local industries

Analyze sector and industry contributions to portfolio performance and compare industry sector exposures versus peers or benchmarks

Construct consistently defined global or industry-based and industry rotation research, development and investment strategies

The General Taxonomy Structure

Section I defines the General Taxonomy hierarchical classifications created for the 4th Superclass of Cryptographic Assets.

Section II details the qualitative and quantitative classification frameworks assigned to each subclass of cryptographic asset.

Section III condenses all the concepts introduced in the General Taxonomy into a single table that presents a bird's-eye view of the entire cryptographic asset ecosystem.
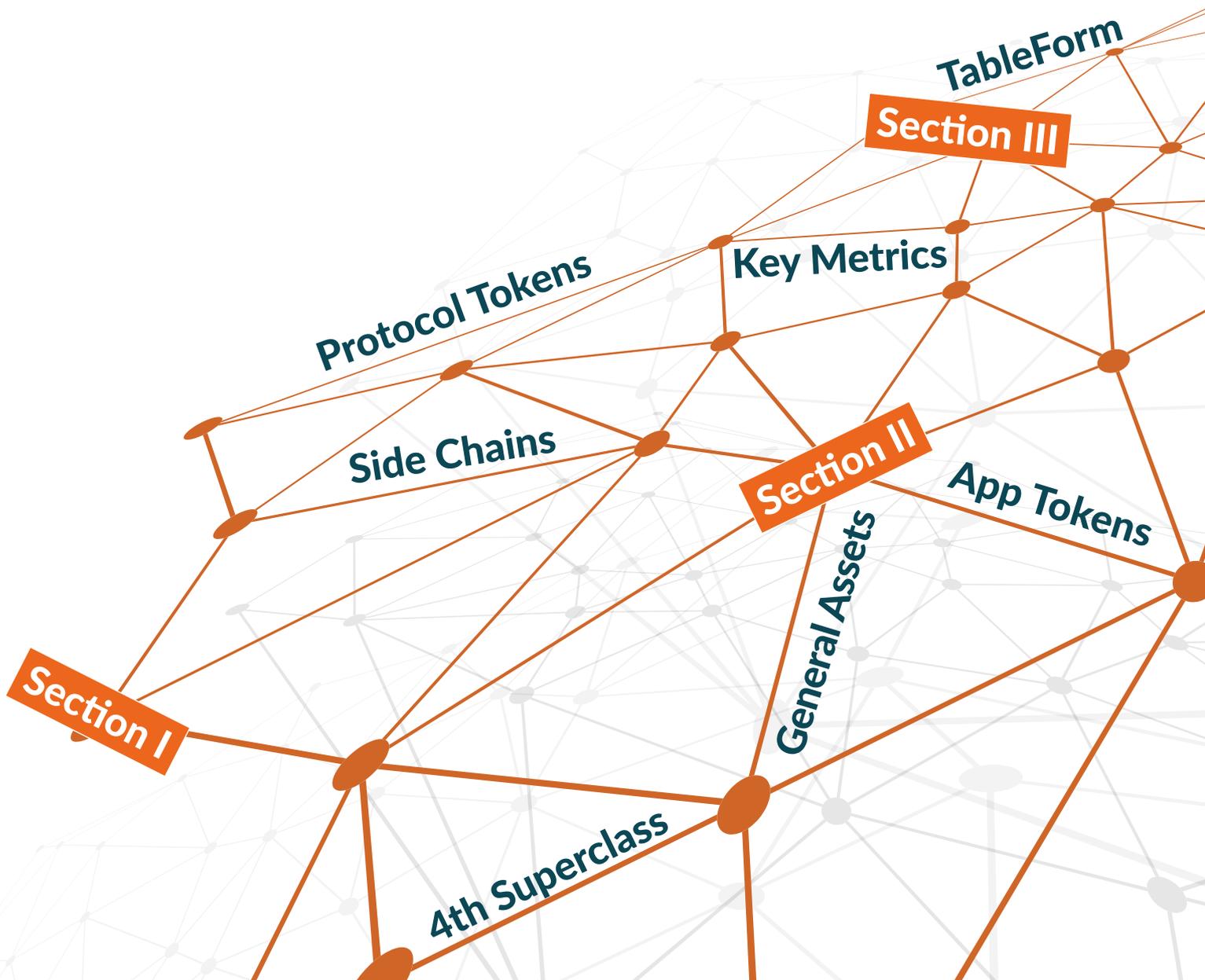
Section I:
Cryptographic Assets – The new 'Superclass'

For any portfolio manager creating an asset allocation strategy, Robert Greer's seminal 1997 paper "What is an Asset Class, Anyway?" has always made compelling reading. In it, Greer identified three 'superclasses' of assets—Capital Assets, Consumable/Transformable Assets, and Store of Value Assets—and categorized a range of traditional assets by their respective superclasses.

	Capital Assets Provide ongoing source of value, and can be priced on the basis of the net present value of its expected returns.	Consumable/ Transformable Assets Raw material/building blocks that serve as inputs into finished products. It has economic value but does not yield an ongoing stream of value.	Store of Value Assets Cannot be consumed, nor can it generate income. Nevertheless, it has value as it is a store of value asset.
Equities	X		
Bonds	X		
Income Producing Real Estate	X		
Commodities		X	
Precious Metals		X	X
Currency			X
Fine Art			X

Sources: *"Bitcoin: Ringing The Bell For A New Asset Class"* by Chris Burniske and Adam White, 2016; and *"What is an Asset Class, Anyway?"* by Robert Greer, 1997.

More recently, in their 2016 white paper "Bitcoin: Ringing The Bell For A New Asset Class" ARK Invest's Chris Burniske and Coinbase's Adam White explored the idea of Bitcoin being the first of an entirely new 'cryptocurrency' asset class. Today, with the General Taxonomy for Cryptographic Assets, Brave New Coin has extended these theories to create a hierarchical classification system and naming conventions for what is not only a new asset class but a new superclass—Cryptographic Assets—created by distributed ledger technology.

In their work, Burniske and White observed that bitcoin can, in principle, simultaneously function across all three of Greer's asset superclasses. This fundamental economic property is the General Taxonomy's first basis for a definition of Cryptographic Assets as the fourth superclass under Greer's classification. The second component definition for this new asset superclass is its digital, distributed, permissionless, and cryptographical nature.

Based on these fundamental economic and technological properties, the General Taxonomy defines Cryptographic Assets, the fourth superclass of assets, as goods that can behave simultaneously as Capital Assets, Consumable/Transformable Assets, and Store of Value Assets thanks to their digital, permissionless, distributed, and cryptographically secure nature.

	Capital Assets Provide ongoing source of value, and can be priced on the basis of the net present value of its expected returns.	Consumable/ Transformable Assets Raw material/building blocks that serve as inputs into finished products. It has economic value but does not yield an ongoing stream of value.	Store of Value Assets Cannot be consumed, nor can it generate income. Nevertheless, it has value as it is a store of value asset.	Cryptographic Assets Can function simultaneously as Capital, Consumable/ Transformable, and Store of Value Assets thanks to their permission-less, distributed, and cryptographically secure nature.
Equities	X			
Bonds	X			
Income Producing Real Estate	X			
Commodities		X		
Precious Metals		X	X	
Currency			X	
Fine Art			X	
Payment Crypto Assets	X	X	X	X
Platform Crypto Assets	X	X	X	X
Side Chains	X	X		X
Application Tokens	X	X		X

Sources: *"Bitcoin: Ringing The Bell For A New Asset Class"* by Chris Burniske and Adam White, 2016; and *"What is an Asset Class, Anyway?"* by Robert Greer, 1997.

Since Bitcoin's creation in 2009, the number of cryptographic assets has increased steadily and over 400 are being traded through major exchanges listed by Brave New Coin. The main economic features of many of these allow them to function simultaneously as any of Greer's superclass of assets. For other tokens, however, their main economic features exhibit a narrower focus.

While it's possible they could function as any of the superclass of assets defined by Greer, they actually fit better within a specific asset class,

representing a claim to a capital asset (equity or real estate), for example, or a store of value asset (currencies or non-monetary assets).

The following subsections will introduce and define the families (Section I.I) and subclasses (Section I.II) that form the new superclass of Cryptographic Assets.

I.I. Families of Cryptographic Assets:
General Cryptographic Assets & Protocol Tokens

The **General Taxonomy** divides the superclass of Cryptographic Assets into two broad families, General Cryptographic Assets and Protocol Tokens.

4th Superclass of Financial Asset

General Cryptographic Asset

Protocol Token
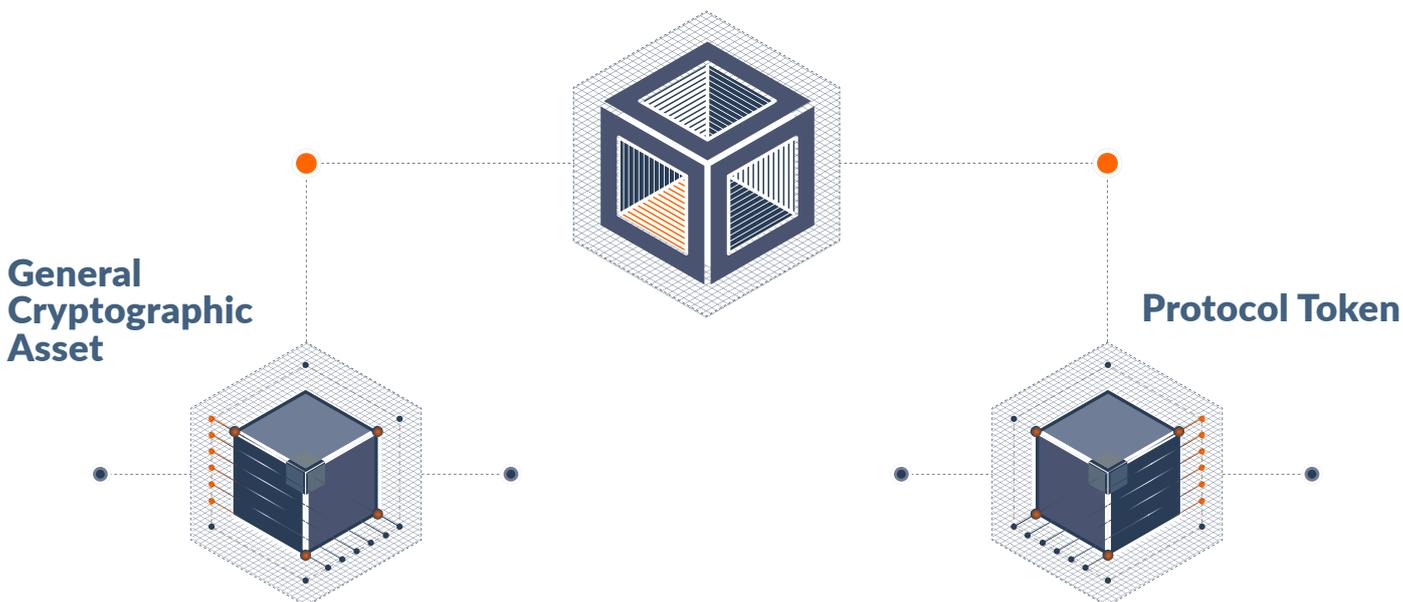
General Cryptographic Assets
represent programmable value that can be used freely by anyone, in any sector of industry and society, as a capital, transformable/consumable, or a store of value asset. These assets also serve as the foundation where Protocol Tokens are created, issued, and operated. The General Taxonomy classifies General Cryptographic Assets by over 60 key metrics, which are both quantitative and qualitative in nature.

Protocol Tokens
represent a claim to a capital, transformable/consumable, or a store of value asset. However, since they can only capture a specific market segment this effectively limits their use as store of value. Instead of key metrics, each Protocol Token is assigned a single NAICS classification that reflects the specific industry of its main economic activity.

The following subsections relate to the two subclasses of asset for each of the families displayed above.

I.II. Subclasses of Cryptographic Assets:
Payment Cryptographic Assets, Platform Cryptographic Assets

The **General Cryptographic Assets** family can be further divided into two main subclasses: Payment Cryptographic Assets and Platform Cryptographic Assets.

General Cryptographic Asset
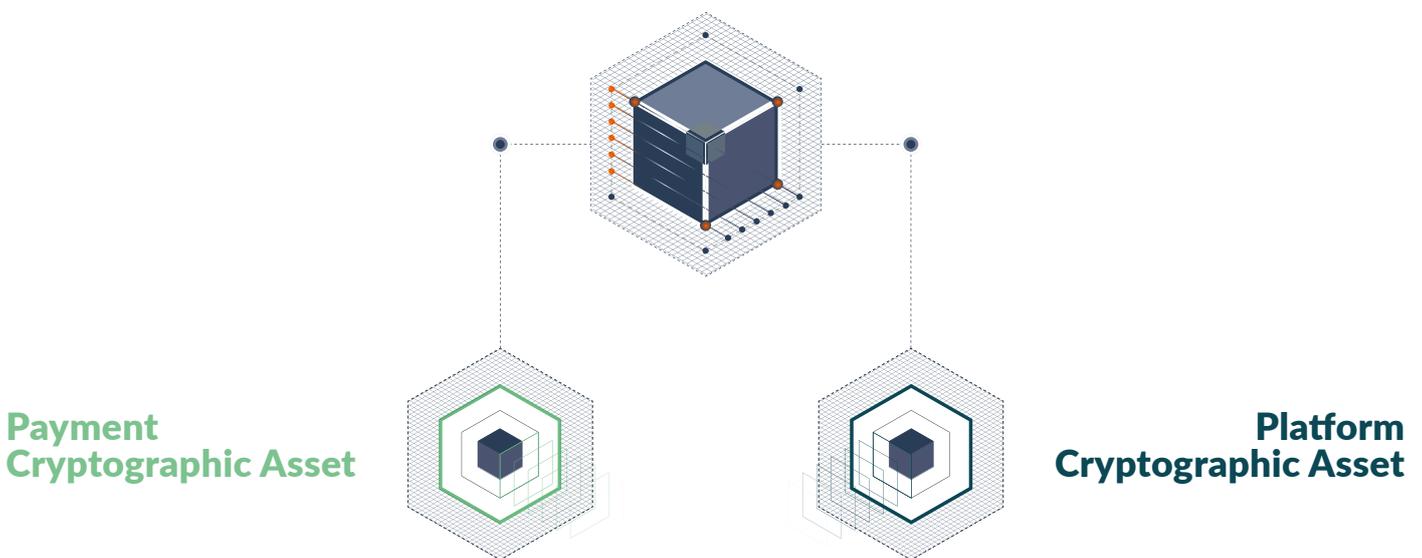
Payment Cryptographic Asset

Platform Cryptographic Asset

The General Taxonomy defines **Payment Cryptographic Assets** as a general form of money with the potential to capture global M1 and M2 money supply. That is, monies that are very liquid such as coins and notes in circulation and other money equivalents that are easily convertible into cash (M1), in addition to short-term bank deposits and 24-hour money market funds.

As for **Platform Cryptographic Assets**, these are distributed protocols that integrate high-level programming capabilities and are not limited to peer-to-peer electronic transfer of value. While their main economic activity is not capturing global M1 and M2 money supply, their breadth and depth in the ecosystem makes these assets an attractive store of value.

I.III. Subclasses of Cryptographic Assets:
Side Chains & Application Tokens

Unlike closed platforms that raise capital from private investors to finance the development of a product or service, decentralized applications have proven harder to create because of the difficulty in monetizing them. Now, however, a decentralized application can incorporate a Protocol Token—either as a Side Chain or Application Token—into its design, and distribute the token to users, retaining a given amount of the token for itself. Then, if the platform proves popular, the token will grow in value and remunerate the founding team for providing a public good, thus effectively challenging the concept of equity as traditionally understood.

While both Side Chains and Application Tokens are produced by a parent network protocol (either a Payment or Platform Cryptographic Asset), the main difference between the two is the way in which they add value to their parent network.

Application Tokens are defined by the General Taxonomy as tokens that are native to decentralized applications and have a cryptographic asset associated with their use or monetization, without locking value in its parent protocol (see Johnson's et al. for more details on this definition).

Side Chains are formed by locking value in the parent chain, and sending it to a pegged distributed ledger. In the case of Bitcoin, this works by first sending funds to a specially formed Bitcoin address. The funds are then out of the sender's control and completely immobilized.

Once the immobilization transaction is sufficiently confirmed by the network, a message is sent to the Side Chain, containing:

• proof that the funds were sent to that special address on the Bitcoin network

• confirmation they are therefore immobilized

• confirmation that the sender was the one who did it

The Side Chain then creates the appropriate number of tokens on its own network and gives the sender control of them, allowing the sender to transact with those funds on the pegged chain under whatever rules that chain chooses to implement.

Protocol Tokens

Application Tokens

Side Chains

I.III. 4th Superclass of Financial Asset

Platform Cryptographic Asset

Application Token

General Cryptographic Asset

Protocol Token

Payment Cryptographic Asset

Side Chain
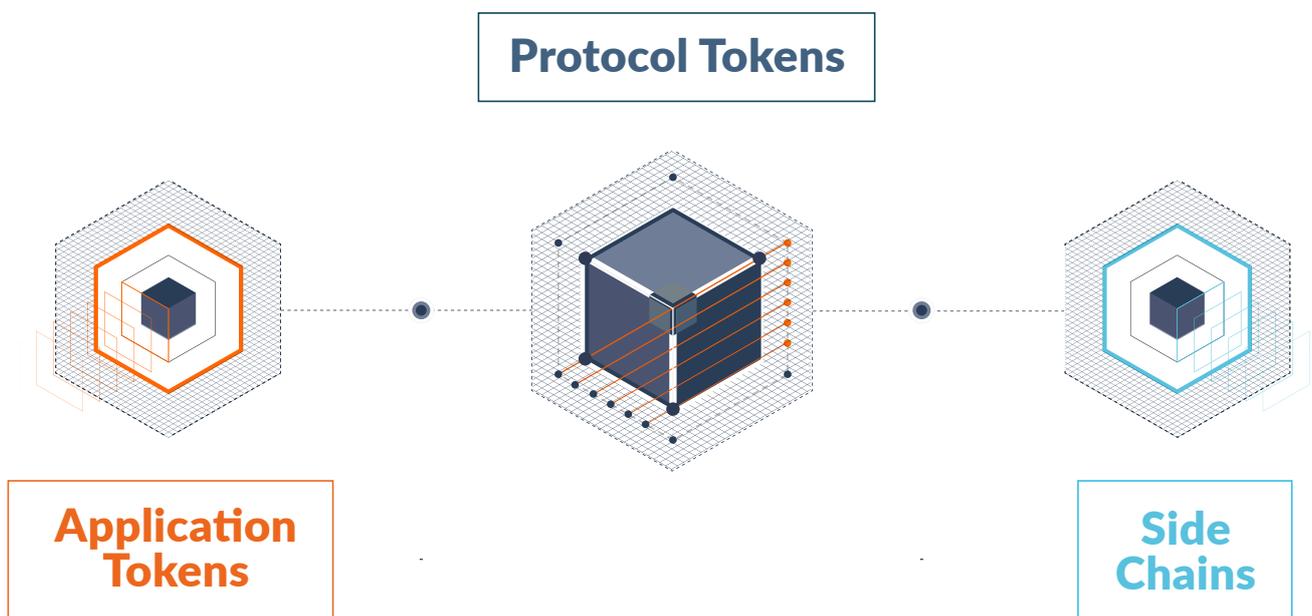
Section II:

General Taxonomy Key Metrics & The North American Industry Classification System

The distributed ledger, or blockchain, ecosystem can be grouped in three broad categories: public, controlled, and private ledgers. Public ledgers are permissionless protocols where anyone can contribute to the processing of transactions without the need of a previous relationship with the ledger. For controlled protocols, the validation process is vetted by a preselected set of nodes, while participation (reading and/or sending transactions) might be public or restricted to participants previously identified in the ledger. For fully private distributed protocols, read permissions are kept centralized to one organization.

While public, controlled, and private ledgers can share similar technical specifications, the Key Metrics developed for the General Taxonomy will only focus on permissionless, distributed protocols whose tokens are traded at global cryptocurrency exchanges and indexed by Brave New Coin.

II.I. Key Metrics for General Cryptographic Assets

Field	Definition
Asset Name	Official name of the cryptographic asset.
Description	A short description of the asset's utility.
Home URL	Asset's Official URL.
BNC URL	BNC stable asset URL.
Asset Icon URL	Official cryptographic asset logo.
Ticker Symbol	Alphanumerical asset code.
Asset Classification	General Taxonomy Asset Classification.
Sub-Classification	General Taxonomy Asset Sub-Classification.
NAICS Industry Classification	The North American Industry Classification that reflects the primary economic focus and activity of the token. Only applicable for Protocol Tokens.
Niche Classification	General Taxonomy niche industry where the token operates.
Economic Properties: Capital Asset	Binary field. If the token provides an ongoing source of value and can be priced on the basis of the net present value of its expected returns a value of 1 is assigned, and a value of 0 otherwise.
Economic Properties: U.S. Security Overall Risk Score	An estimated qualitative score up to 200 base points for how likely a token is to be considered an investment contract, one of several types of security, under U.S. federal securities law, based on Coinbase, Coin Center, Union Square Ventures and Consensys' initiative "A Securities Law Framework for Blockchain Tokens.
Economic Properties: Commodity	Binary field. If the token can be transformed into another asset a value of 1 is assigned, and a value of 0 otherwise.
Economic Properties: Store of Value	Binary field. If the token has value and can successfully store it over the long term, a value of 1 is assigned and a value of 0 otherwise.

BNC.

Field	Definition
Price	End of day BNC index price.
24hr change	Price percentage change in the last 24 hours.
Volume	End of day 24 hour BNC volume.
Free Float Market Cap	Protocol's end of day market capitalization based on its current public float.
Total Market Capitalization	Protocol's end of day market capitalization based on its total supply.
Token Standard	Common set of rules for tokens issued under a specific protocol.
Genesis Block (UTC)	First block creation time.
Codebase	Source code from original protocol (if applicable).
Parent Chain	Underlying protocol used to issue a Protocol Token.
Smart Contract Support	Current support for Turing-Complete, or computationally equivalent, applications with a state stored in the distributed ledger, facilitating, verifying, or enforcing the negotiation or performance of a contract.
Multisignature Support	Support for a scheme which requires a group of users, i.e. more than one key, to authorize a single transaction.
Transaction Identity	Degree of transparency and traceability of transactions in the protocol's network. • A value of "**Anonymous**" is assigned if transactions cannot be traced or identified by anyone, • "**Pseudonymous**" when a transaction and user can be identified only by specialized analysis, • "**Private**" when transaction and user identities are only known to the organization running the protocol, • "**Transparent**" when transaction and user identities are public, and • "**Selective Transparency**" when it is possible to optionally send transactions anonymously or transparently.
Governing Body	Name and link to website of team, institution or system in charge of protocol development, maintenance and implementation decisions.
Scripting Language	System to perform computations and validate trace data.
Average Block Time	Average block confirmation time as stated in the documentation of the latest protocol version release.
Free Float Supply	Total number of native tokens in circulation.
Total Supply	Total expected number of tokens issued by the protocol.
Premined & Reserved Tokens	Number of tokens allocated previous to public circulation.
Block Height	Number of blocks in the chain between the latest measurement and the genesis block.
Block Reward	Number of native tokens created each time a transaction validator discovers a new block during the current Reward Era.
Block Halving	Interval of blocks between block reward halving.
Consensus/Distribution	Economic measure by which the protocol executes and validates the outcome of a transaction on the network by all involved members.
Hashing Algorithm	Secure hashing algorithm used by the protocol.
Difficulty Cycle	Number of blocks between difficulty adjustment.
Difficulty Algorithm	Algorithm used to define the network's difficulty target.
Mining	Mining hardware compatibility. Range of values are: CPU, GPU, ASIC, HDD, SSD.
Hash Rate	Speed at which a computer is completing an operation, measured as number of tera hashes per second (trillions of hashes per second) the protocol's network is performing. Only applicable to General Cryptographic Assets.
Difficulty	Measure of how difficult it is to find the hash of a block's header below a given target.
Masternode	Protocol's support for Masternodes, i.e. computers that run a full protocol's client to validate transactions and provide network functionality.

Field	Definition
Minimum Staking Quantity	Minimum number of tokens needed to be held in order to begin competing to sign a block.
Minimum Staking Age	Minimum number of days an asset needs to be held in order to begin competing to sign the next block.
Maximum Staking Age	Number of days required to achieve the greatest probability of signing the next block.
Annual Staking Interest	Annual interest rate earned from staking, i.e. locking up a given crypto asset.
Minimum Transaction Fee	Minimum amount a validator will charge to process a transaction in the network.
Initial Distribution	Percentage of the asset's supply arbitrarily allocated at the genesis block.
Proof-of-Work Block End	Block height at which Proof-of-Work consensus is replaced or complemented by another consensus algorithm.
BTC Block Height on Creation	Bitcoin block height at protocol's genesis block.
ETH Block Height on Creation	Ethereum block height at protocol's genesis block.
Creator Address	Protocol address of the creating/issuing entity of a token/contract.
Creator Transaction Hash	Transaction hash of the token/contract creation.
Contract Address	Address of the account holding object on a specific blockchain.
Explorer	Web tool that provides detailed information about an asset's blocks, addresses, and transactions.
Source	Link to source code.
Wallet Version	Link to repository with latest official wallet release and tag version.
White Paper	Link to stable URL of the asset's white paper.
Announcement	URL of initial project announcement in a public forum.
Twitter	URL of project's official Twitter page.

The General Taxonomy has adopted the North American Industry Classification System (NAICS) to ensure it is useful and accessible to the widest possible array of users.

Code	Industry Title
11	Agriculture, Forestry, Fishing and Hunting
21	Mining, Quarrying, and Oil and Gas Extraction
22	Utilities
23	Construction
31-33	Manufacturing
42	Wholesale Trade
44-45	Retail Trade
48-49	Transportation and Warehousing

51	Information
52	Finance and Insurance
53	Real Estate and Rental and Leasing
54	Professional, Scientific, and Technical Services
55	Management of Companies and Enterprises
56	Administrative and Support and Waste Management and Remediation Services

61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Food Services
81	Other Services (except Public Administration)
92	Public Administration
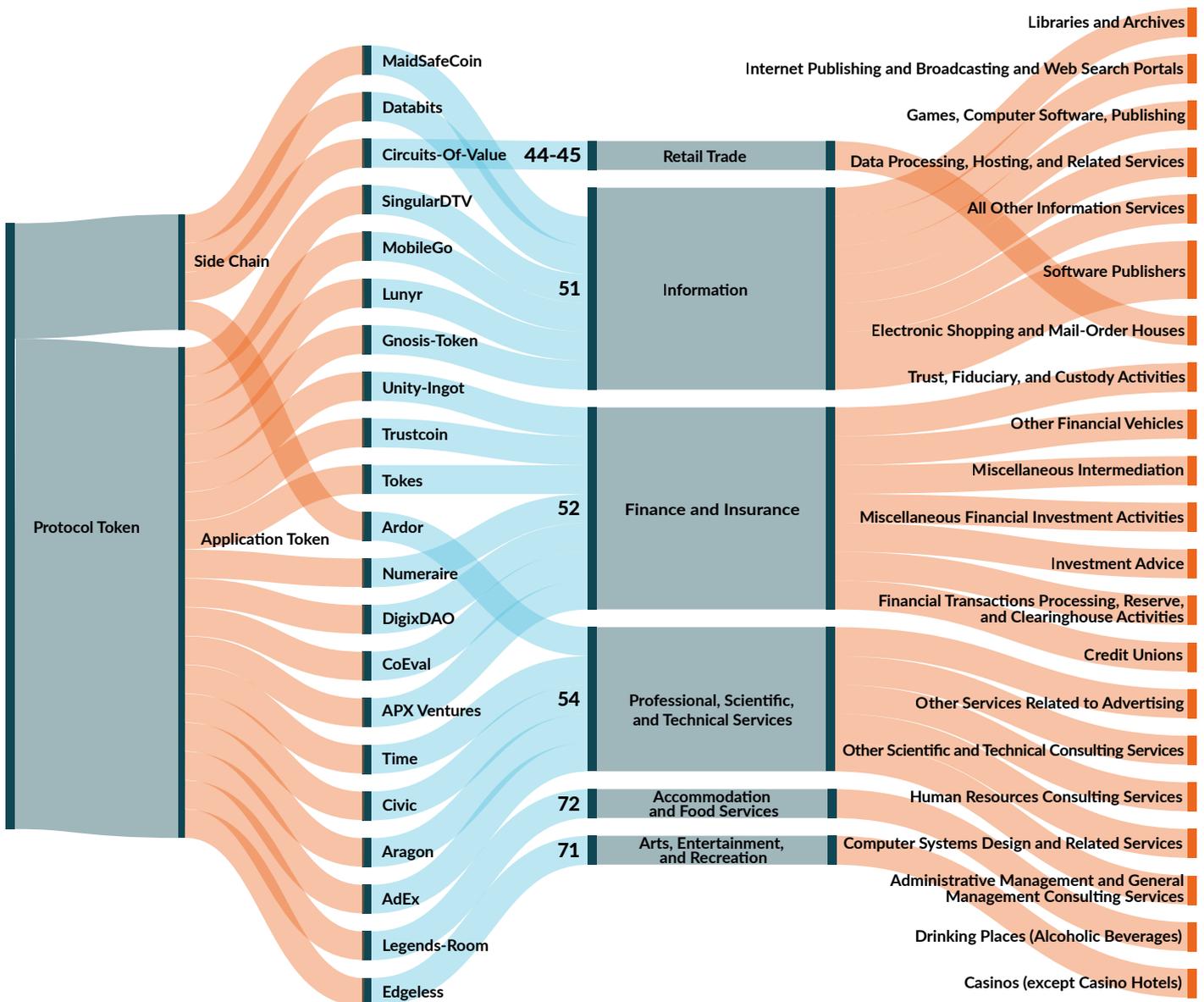
In addition to the NAICS standard, the General Taxonomy also assigns a unique niche industry to each cryptographic asset. Currently there is no source that provides such detailed information, which is crucial for regulators seeking to promote innovation, protect the general public, and develop interoperability standards.

Application Token
- Financial Services
- Digital Advertising
- Digital Jurisdiction
- Prediction Markets
- Venture Capital Fund
- Currency-as-a-Service
- Decentralized Exchange
- Identity Verification
- Distributed Crowdfunding
- DApp Platform
- Content Distribution Platform
- Tokenized Commodity
- Online Casino
- Distributed Storage
- Gaming Platform
- eSports Gaming Platform
- Data Trading Platform
- Distributed Computing
- Matchmaking Services
- Financial Inclusion
- Cryptographic Asset Management
- Gentlemen's Cabaret Membership
- Peer-Reviewed Knowledge Platform
- Mining and ICO Research, Investment Fund
- Mobile Gaming Platform and Store
- Distributed Virtual Private Network
- Crowdsourced Investing
- Medical Record Storage Network
- Contactless Payment System
- Core Liquidity Provider
- Cryptocurrency
- Digital Content Production, Distribution and Management Platform
- Gateway to Ethereum-based DApps
- Distributed Marketplace
- Stable Cryptocurrency
- Time Banking
- Cannabis Industry
- Distributed Rotating and Saving Credit Association
- Store of Value

Protocol Token

Side Chain
- Blockchain-as-a-Service
- Tokenized Commodity
- Stable Cryptocurrency
- In-Game Currency
- Loyalty and Rewards Marketplace
- Instant Messaging
- DApp Platform
- Digital Asset Management
- Social Media

Payment Cryptographic Asset
- Private Payments
- Cryptocurrency
- Advertising and Attention-Based Services
- Decentralized Marketplace
- Scientific Research
- DApp Platform
- In-Game Currency
- Publishing
- Decentralized Domain Name System
- Stable Cryptocurrency
- Open-End Investment Funds
- Financial Services
- Proof-of-Stake Minting
- Quantum Resistant Protocol
- Distributed Crowdfunding
- Data Processing Services
- VR-Platform Cryptocurrency
- eSports Gaming Platform

General Cryptographic Asset

Platform Cryptographic Asset
- DApp Platform
- Distributed Marketplace
- Blockchain Interoperability
- Content Distribution Platform
- Data Processing Services
- Social Media
- Internet of Things
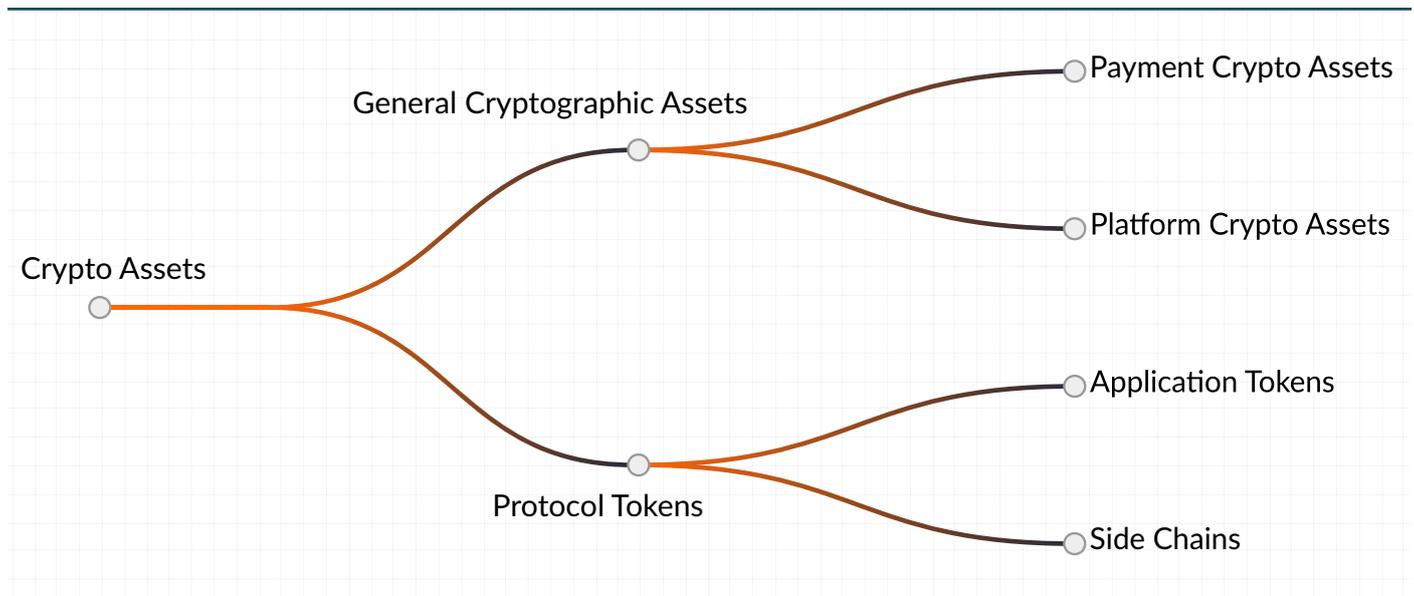- Distributed Storage
- Financial Services

Section III:
General Taxonomy for Cryptographic Assets Visualization

The final section will present a graphic visualization (III.I), an example API JSON response (III.II), and a sample application (III.III) of all the concepts established throughout this body of work.

III.I. Families and Subclasses of Cryptographic Assets

III.II. Example API JSON Response

```
GET /general_taxonomy?asset=BTC
```

```
{
        "success": true,
        "source": "BraveNewCoin",
        "time_stamp": 1514764799,
        "asset_name": "Bitcoin",
        "ticker_symbol": "BTC"
            "general_taxonomy": {
                    "asset_classification": "General Cryptographic Asset",
                    "sub_classification": "Payment Cryptographic Asset",
                    "north_american_industry_classification_system": "n/a",
                    "niche_market": "Cryptocurrency",
            },
            "attributes": {
                    "home_url": "https://bitcoin.org/",
                    "bnc_url": "/Bitcoin",
                    "asset_icon_url": "/images/coins/btc.png",
                    "asset_description": "Bitcoin is one of the first implementations of a concept called cryptocurrency...",
                    "token_standard": "",
                    "genesis_utc": "2009-01-03 18:15:05",
                    "codebase": "Original",
                    "parent_chain": "Native",
                    "smart_contract_support": "No",
                    "transaction_identity": "Pseudonymous",
                    "governing_body": "Bitcoin Core",
                    "scripting_language": "Script",
                    "economic_properties": {
                            "capital_asset": 0,
                            "u.s._security_overall_risk_score": "n/a",
                            "commodity": 1,
                            "store_of_value": 1
                    },
                    "market_data": {
                            "price": 13864.61055068,
                            "change_24hr": -9.07,
                            "volume_24hr": 783302956.37833180,
                            "free_float_supply": 16774440,
                            "total_supply": "21000000",
                            "free_float_market_cap": 232571077806,
                            "total_market_cap": 291156821563
                    },
                    "blockchain_data": {
                            "average_block_time(s)": 600,
                            "premine_&_reserved_tokens": 0,
                            "block_height": 501960,
                            "block_reward": "12.5",
                            "block_halving": "210000",
                            "min_transaction_fee(sat/b)": 20,
                            "consensus_&_distribution": "Proof-of-Work",
                            "hashing_algorithm": "SHA-256",
                            "difficulty_cycle": "2016",
                            "difficulty_algorithm": "difficulty_1_target / current_target",
                            "mining": "CPU-GPU-ASIC",
                            "hashrate(th/s)": 14975580.95,
                            "difficulty": 1922580604979.83,
                            "masternode": "No",
                            "total_node_count": 10236,
                            "blockchain_size(gb)": 172.95,
                            "min_stake_quantity": "n/a",
                            "min_stake_age(d)": "n/a",
                            "max_stake_age": "n/a",
                            "annual_staking_interest": "n/a",
                            "initial_distribution": "n/a",
                            "pow_block_end": "n/a",
                            "btc_block_height_on_creation": 0,
                            "eth_block_height_on_creation": "n/a",
                            "creator_address": "n/a",
                            "creator_transaction_hash": "000000000019d6689c085ae165831e934ff763ae46a2a6c172b3f1b60a8ce26f",
                            "contract_address": "n/a",
                            "explorer": "https://www.smartbit.com.au/"
                    },
                    "sem_ver": {
                            "source": "https://github.com/bitcoin/bitcoin",
                            "wallet_version": "v0.15.1",
                            "whitepaper": "/Whitepapers/Bitcoin-A-Peer-to-Peer-Electronic-Cash-System.pdf"
                    },
                    "social": {
                            "announcement": "https://www.mail-archive.com/cryptography@metzdowd.com/msg09959.html",
                            "twitter_url": "https://twitter.com/bravenewcoin"
                    }
            }
    }
}
```

III.III. Sample Basket of Cryptographic Assets: Economic Properties and Taxonomical Classification

31st December 2017

Asset Name	Ticker Symbol	Asset Classification	Sub-Classification	Niche	Economic Properties: Capital Asset	Economic Properties: U.S. Security Overall Risk Score	Economic Properties: Store of Value	Economic Properties: Commodity	Transaction Identity	Governing Body
Bitcoin	BTC	General Cryptographic Asset	Payment Crypto Asset	Cryptocurrency	0	n/a	1	1	Pseudonymous	Bitcoin Core
Ethereum	ETH	General Cryptographic Asset	Platform Crypto Asset	DApp Platform	0	n/a	1	1	Pseudonymous	Ethereum Foundation
Ethereum-Classic	ETC	General Cryptographic Asset	Platform Crypto Asset	DApp Platform	0	n/a	1	1	Pseudonymous	Ethereum Classic Project
Zcash	ZEC	General Cryptographic Asset	Payment Crypto Asset	Private Payments	0	n/a	1	1	Anonymous	Zerocoin Electric Coin Company
Ripple	XRP	General Cryptographic Asset	Payment Crypto Asset	Financial Services	0	n/a	1	1	Pseudonymous	Ripple
Litecoin	LTC	General Cryptographic Asset	Payment Crypto Asset	Cryptocurrency	0	n/a	1	1	Pseudonymous	Litecoin Project
SiaCoin	SC	General Cryptographic Asset	Platform Crypto Asset	Distributed Storage	0	n/a	1	1	Pseudonymous	Nebulous
Waves	WAVES	General Cryptographic Asset	Platform Crypto Asset	DApp Platform	1	50	1	1	Pseudonymous	Waves Team
Dash	DASH	General Cryptographic Asset	Payment Crypto Asset	Private Payments	1	n/a	1	1	Anonymous	Dash Core Team
Monero	XMR	General Cryptographic Asset	Payment Crypto Asset	Private Payments	0	n/a	1	1	Anonymous	Monero Core Team
Lisk	LSK	General Cryptographic Asset	Platform Crypto Asset	DApp Platform	0*	50	1	1	Pseudonymous	Lisk Foundation
Omni	OMNI	General Cryptographic Asset	Platform Crypto Asset	DApp Platform	0	n/a	1	1	Pseudonymous	OnmiLayer
MaidSafeCoin	MAID	Protocol Token	Application Token	Cryptocurrency	0	50	1	1	Anonymous	MaidSafe
Golem Network	GNT	Protocol Token	Application Token	Distributed Computing	0	20	0	1	Pseudonymous	Golem Network
Storj	STORJ	Protocol Token	Application Token	Distributed Storage	0	20	0	1	Pseudonymous	Storj Labs Inc
ICONOMI	ICN	Protocol Token	Application Token	Cryptographic Asset Management	1	95	0	1	Pseudonymous	ICONOMI
Taas	TAAS	Protocol Token	Application Token	Cryptographic Asset Management	1	95	0	1	Pseudonymous	TAAS FUND

III.III. Continuation of Sample Basket of Cryptographic Assets: Key Quantitative and Qualitative Metrics

31st December 2017

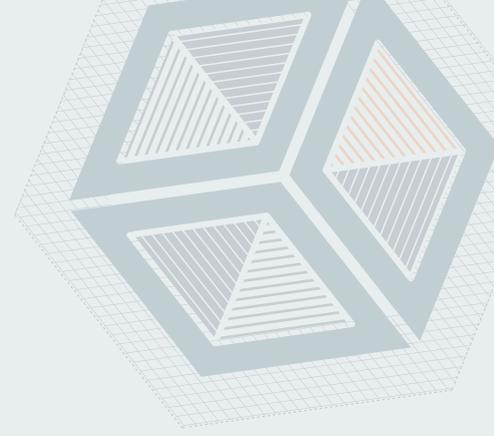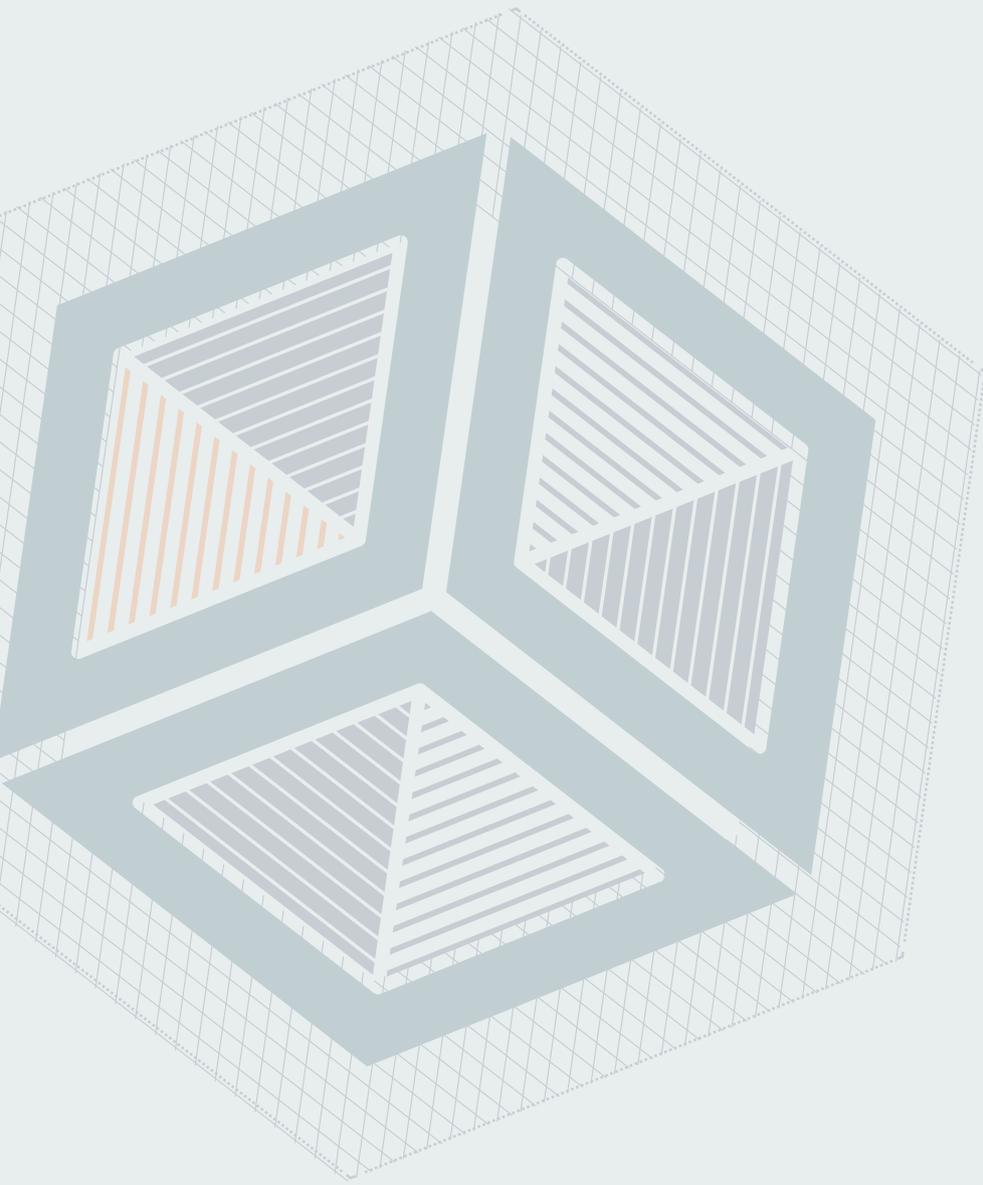| Asset Name	Token Standard	Genesis (UTC)	Codebase	Parent Chain	Smart Contract Support	Scripting Language	Average Block Time (s)	Block Reward	Block Halving	Consensus/ Distribution	Hashing Algorithm	Mining
Bitcoin	-	2009-01-03 18:15:05	Original	Native	No	Script	600	12.5	210,000	Proof-of-Work	SHA-256	CPU-GPU-ASIC
Ethereum	-	2015-07-30 15:26:13	Original	Native	Yes	Solidity	20	5	n/a	Proof-of-Work	EtHash	CPU-GPU
Ethereum-Classic	-	2015-07-30 15:26:13	Ethereum	Native	Yes	Solidity	14	5	5,000,000	Proof-of-Work	EtHash	CPU-GPU
Zcash	-	2016-10-28 7:56:00	Bitcoin	Native	No	No scripting functionality	150	12.5	840,000	Proof-of-Work	Equihash	CPU-GPU
Ripple	-	2013-01-01 0:00:00	Original	Native	No	No scripting functionality	3-4	n/a	n/a	Ripple Protocol Consensus Algorithm	SHA-512Half	n/a
Litecoin	-	2011-10-07 7:31:05	Bitcoin	Native	No	Scrypt	150	50	840,000	Proof-of-Work	Scrypt	CPU-GPU-ASIC
SiaCoin	-	2015-06-06 15:13:00	Original	Native	Yes	No scripting functionality	600	30,000	Halving will decrease by 1 coin per block, until a minimum of 30,000 coins per block is reached	Proof-of-Work	blake2b	GPU
Waves	Waves Asset	2016-04-15 7:00:00	Original	Native	Yes	Scala	60	n/a	n/a	Leased Proof-of-Stake	n/a	n/a
Dash	-	2014-01-19 2:40:18	Bitcoin	Native	No	C++	150	Variable: 45% of block reward for miners, 45% to masternodes, 10% reserved for budget system	n/a	Proof-of-Work	X11	CPU-GPU-ASIC
Monero	-	2014-04-18 10:49:53	Bytecoin	Native	No	No scripting functionality	120	Smoothly varying	n/a	Proof-of-Work	CryptoNight	CPU-GPU
Lisk	-	2016-05-24 18:00:00	Crypti	Native	Yes	Javascript	10	5	3,000,000	Delegated Proof-of-Stake	n/a	n/a
Omni	Smart Property	2013-08-01 4:36:29	Bitcoin	OmniLayer	Yes	No scripting functionality	600	1-(.5^y); y=years since MasterCoin protocol sale	n/a	Proof-of-Stake	n/a	n/a
MaidSafeCoin	Smart Property	2014-04-22 8:07:00	n/a	OmniLayer	No	No scripting functionality	600	n/a	n/a	Proof-of-Resource	n/a	CPU, Bandwith Availability, Disk Space, On-line Time
Golem Network	ERC20	2016-11-10 20:44:10	n/a	Ethereum	Yes	Solidity	20	n/a	n/a	n/a	n/a	n/a
Storj	ERC20	2014-07-18 12:00:00	n/a	Ethereum	Yes	Solidity	20	n/a	n/a	n/a	n/a	n/a
ICONOMI	ERC20	2016-10-24 9:34:06	n/a	Ethereum	Yes	Solidity	20	n/a	n/a	n/a	n/a	n/a
Taas	ERC20	2017-03-22 5:17:04	n/a	Ethereum	Yes	Solidity	20	n/a	n/a	n/a	n/a	n/a

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Asset Name	BTC Block Height on Creation	Creator Address	Creator Transaction Hash	Contract Address	Explorer	Source	Wallet Version	White Paper	Announcement	TwitterURL
Bitcoin	0	n/a	000000000019d6689c085ae165831e934f-f763ae46a2a6c172b3f1b60a8ce26f	n/a	SmartBit	GitHub	v0.15.1	BNC Library	The Mail Archive	https://twitter.com/bravenewcoin
Ethereum	367652	n/a	0x88e96d4537bea4d9c05d12549907b-32561d3bf31f45aae734cdc119f13406cb6	n/a	ETH Stats	GitHub	v0.9.3	BNC Library	Bitcoin Talk	http://twitter.com/ethereumproject
Ethereum-Classic	367652	n/a	0x88e96d4537bea4d9c05d12549907b-32561d3bf31f45aae734cdc119f13406cb6	n/a	Gas Tracker	GitHub	v0.9.1	BNC Library	Bitcoin Talk	https://twitter.com/eth_classic
Zcash	436261	n/a	0007bc227e1c57a4a70e237cad00e7b7ce-565155ab49166bc57397a26d339283	n/a	Zchain Explorer	GitHub	v1.0.14	BNC Library	n/a	https://twitter.com/zcashco
Ripple	214563	n/a	n/a	n/a	Ripple Charts	GitHub	n/a	BNC Library	n/a	https://twitter.com/Ripple
Litecoin	148401	n/a	12a765e31ffd4059bada1e25190f6e98c99d-9714d334efa41a195a7e7e04bfe2	n/a	Blockr	GitHub	v0.15.0.1rc1	n/a	Bitcoin Talk	https://twitter.com/litecoinpro-ject
SiaCoin	359689	n/a	25f6e3b9295a61f69fcb956aca9f0076234ec-f2e02d399db5448b6e22f26e81c	n/a	Sia Explorer	GitHub	v1.3.1	BNC Library	Bitcoin Talk	https://twitter.com/SiaTechHQ
Waves	407379	3P274YB5qseSE9DTTL3bpSjosZrYB-PDpJ8k	FSH8eAAzZNqnG8xgTZtz5xuLqXySsXgA-jmFEC25hXMbEufiGjqWPnGCZFt6gLiVLJ-ny16ipxRNAkkzjjhqTjBE2	n/a	WavesGo	GitHub	v0.5.14	BNC Library	Bitcoin Talk	https://twitter.com/wavesplat-form
Dash	281233	n/a	00000ffd590b1485b3caadc19b22e6379c-733355108f107a430458cdf3407ab6	n/a	Dash Explorer	GitHub	v0.12.2.3	BNC Library	Bitcoin Talk	https://twitter.com/dashpay
Monero	296453	n/a	771fbcd656ec1464d3a02ea-d5e18644030007a0fc664c0a-964d30922821a8148	n/a	Monero Blocks	GitHub	v0.11.1.0	BNC Library	Bitcoin Talk	https://twitter.com/monerocur-rency
Lisk	413258	6566229458323231555L	13658550407518916215	n/a	Lisk Explorer	GitHub	v1.3.2	GitHub	Bitcoin Talk	https://twitter.com/LiskHQ
Omni	249560	1EXoDusjGwvnjZUyKkxZ4UHEf-77z6A5S4P	Exodus Crowdsale	n/a	Omni Explorer	GitHub	v0.27.0	n/a	n/a	https://twitter.com/Omni_layer
MaidSafeCoin	297115	1ARjWDkZ7kT9fwjPrjcQyvbXDkEyS-zKHwu	86f214055a7f4f5057922fd1647e00ef31a-b0a3ff15217f8b90e295f051873a7	n/a	Omni Explorer	GitHub	v0.27.0	BNC Library	Bitcoin Talk	https://twitter.com/maidsafe
Golem Network	438283	0x42c8fCbc73D625F1d258a-32915B6A573095DE93D	0x6e8e11e694673b0b9135511a8267f-f05a8444af7d88aaf043350e6349fdb9bb0	0xa74476443119A942dE-498590Fe1f2454d7D4aC0d	EtherScan	GitHub	v0.9.3	BNC Library	Bitcoin Talk	https://twitter.com/golemproject
Storj	311324	0x00f6bF3c5033e944FeDdb3dC8ff-B4d47AF17ef0b	0x6113ba715798aaaf-5c9a0ce859ce6293282eff-67d6a063074500b58be207e855	0xB64ef51C888972c908C-Facf59B47C1AfBC0Ab8aC	EtherScan	GitHub	v0.9.3	BNC Library	Bitcoin Talk	https://twitter.com/storjproject
ICONOMI	435693	0x81C4825Fd6B62E88D9218dEfC-933C38526c1fcD0	0xf929583ead281e03d83c9c282c7e76d-36cad574ad890d266cf7f2ea65321435f	0x888666CA69E0f178DED-6D75b5726Cee99A87D698	EtherScan	n/a	v0.9.3	BNC Library	Bitcoin Talk	https://twitter.com/iconominet
Taas	458356	0x1Ff21eCa1c3ba96e-d53783aB9C92FFbF77862584	0xda045771c8f69bdef7255a7b5316f25a-51378ba6c34d28502bbd77435ee77fae	0xE7775A6e9Bcf904eb-39DA2b68c5efb4F9360e08C	EtherScan	n/a	v0.9.3	BNC Library	Bitcoin Talk	https://twitter.com/taasfund

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Taxonomy

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