SOVEREIGNSKY

SovereignSky:
A Space-based Blockchain to End Global Poverty

SovereignSky Whitepaper

SovereignSky.com

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Contents

"Eradicating extreme global poverty is down to two things: Technology advancement and the 'will' to achieve. With blockchain and SovereignSky we now have the technology and with our team & partners we WILL complete this mission."

- Timothy E. Burke, Founder RUON AI and SovereignSky

1. Executive Summary

Disclaimer

Please note that this executive summary is not a stand alone document, but should be read as an introduction to the SovereignSky whitepaper. Any decision to invest in the virtual financial assets described in this whitepaper should be based on consideration of the whitepaper as a whole by the investor.

The offering of virtual financial assets does not constitute an offer or solicitation to sell financial instruments and any such offer or solicitation of financial instruments will be made only by means of a prospectus or other offering documentation in terms of any applicable Maltese law. Civil liability attaches to those persons who have tabled the summary including any translation thereof and applied for its notification.

All individuals responsible for the whitepaper (see team section) herewith declare that to the best of their knowledge the information contained in the whitepaper is in accordance with the facts and that the whitepaper makes no omission likely to affect its import.

Summary

SovereignSky, the Space-based blockchain of the Sovereign ecosystem, is a space-bound solution to confer equal access to the world's wealth to anyone on earth, regardless of their location, nationality and economic starting conditions.

SovereignSky combines a blockchain platform and token with a low earth orbit satellite network, based upon the government and academia-tested space technology of SovereignSky's partner company SpaceQuest, and thus transcends jurisdictional and infrastructural limits that have been imposed by narrow-minded planning and self-serving objectives prevalent in most developed and developing nations on earth.

SovereignSky will not be subject to any particular national jurisdiction on earth. Its location in the earth's orbit enables it to offer equal access and equal opportunities to participants from all over the globe. It incorporates the concepts of "Building block(chain)s for a better planet" introduced by PwC and the Stanford Woods Institute. The team strongly believes in responsible blockchains.

SovereignSky is a joint venture between two major players in the blockchain world :

🛰️ BitShares EOS (BEOS), a hybrid of the existing BitShares blockchain and a new private EOS clone as a representative of the Cryptonomex family of companies, and led by Stan Larimer, and

🛰️ SovereignSky, RUON AI, and RUON Aid, led by Tim Burke, as an innovative ecosystem and platform to end global poverty, achieve equal access to market opportunities and wealth creation for the poorest countries on earth.
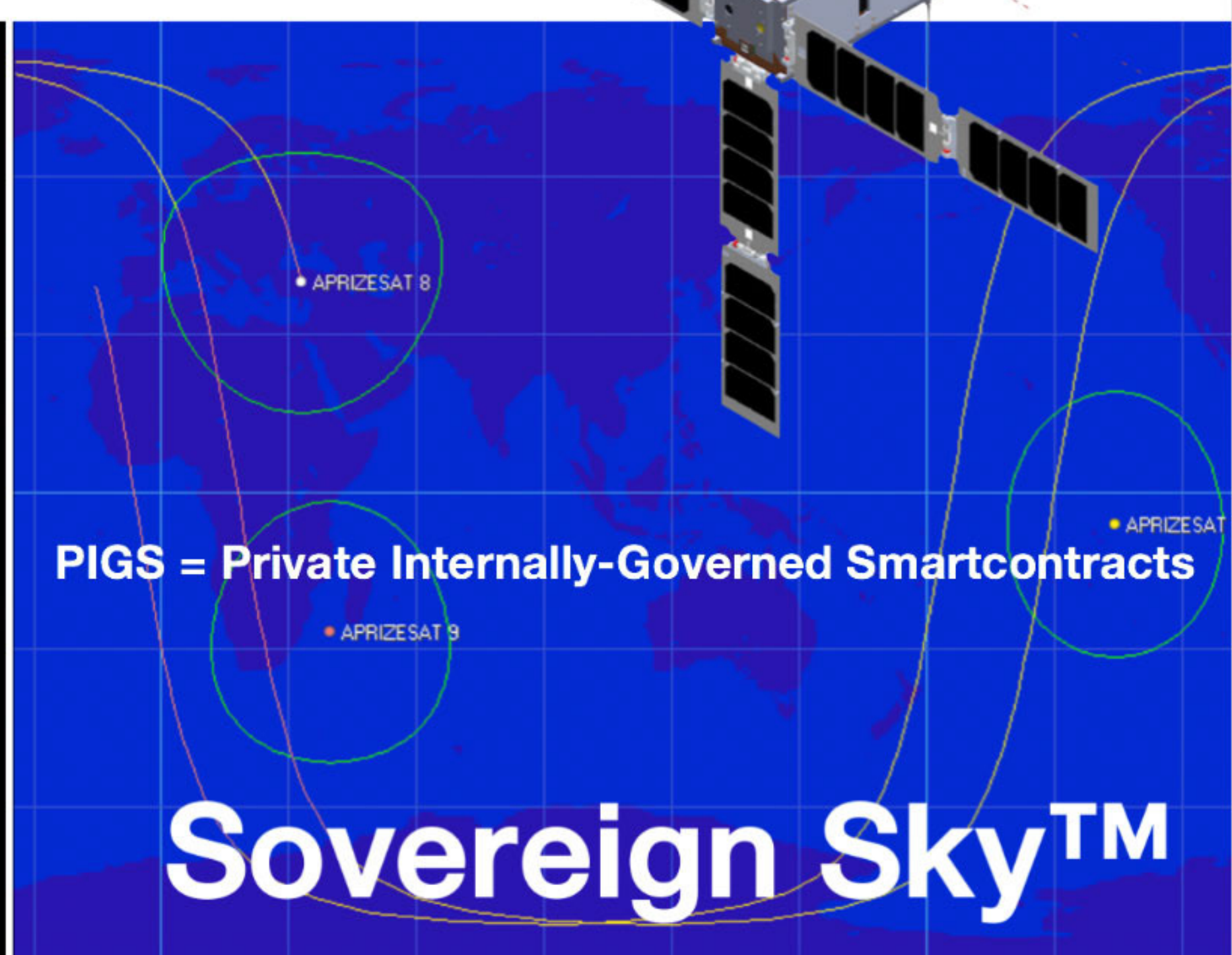
2. Background

We, the founding team of SovereignSky, have developed the concept and business model based on our combined, unparalleled expertise in the blockchain market.

We strongly believe that existing blockchains and blockchain ecosystems have not yet delivered on the original promise of blockchain: **Global equality through efficiency and decentralization**.

All previous attempts to disrupt the global economy and achieve global equality have suffered from one common problem: they were not able to transcend the very ecosystem they were trying to replace. In other words, helping the world's poorest regions to gain fair access to the global economy and to achieve equality and efficiency in the distribution of wealth, largely depended on the existing infrastructure in these regions – in particular, energy and telecommunications – which are largely insufficient to enable the kind of advances that are required to take disadvantaged regions in the 21st century.

SovereignSky is stepping up to finally break this vicious circle: the world's poorest regions will literally be lifted out of their current situation, using the untapped potential of a **satellite-powered, Space-based blockchain system**.

Global Poverty: A Matter of Marketplace Inefficiency

Poverty is defined as a per capita household consumption below 3.10 international dollars per day, and extreme poverty is as low as 1.90 international dollars per day. International dollars are the equivalent in purchasing power equal to USD. Extreme poverty still affects about 10% of the worlds population and half of this population lives in Sub-Saharan Africa.

Figure 1 shows that in Africa and Asia, and to a lesser extent in South America, a sizable proportion of the population are still living in poverty. The causes for this are manifold with unequal access to the global markets being among the most important.

Rural areas that are disadvantaged in terms of education and technology, and thus access to national and global markets, suffer from higher poverty levels, in developed as well as in developing countries . As the World Bank says:

The vast majority of the global population living under the poverty line live in rural areas and have limited to no access to education. Most are employed in the agriculture sector and over half of the population is under the age of 18 years old.

Share of population living with less than 3.10 int.-$ per day, 2014
Share of population living with per capita household consumption below 3.10 international dollars per day (in 2011 PPP prices). International dollars are adjusted for inflation and for price differences across countries.

No data 0% 10% 20% 30% 40% 50% 60% 70% 80% 100%

Source: World Bank – WDI
Note: Consumption per capita is the preferred welfare indicator for the World Bank's analysis of global poverty. However, for about 25% of the countries, estimates correspond to income, rather than consumption.
OurWorldInData.org/extreme-poverty/ • CC BY-SA

However, poverty is not an intractable problem. Since 1990, nearly 1 billion people around the world have moved out of extreme poverty. This was due primarily to the economies of China, India and Indonesia – which all had significant technological progress and aggressively targeted the global markets demanding their share of opportunity.

Therefore, if market participation can be improved in other impoverished countries and weaker economies then it will be possible to move closer towards our goal of abolishing poverty worldwide.

Blockchain and Equal Opportunities: The Need For SovereignSky

Blockchain has originally been conceived as a technology to replace unfair, biased or unreliable central authorities, in favor of freedom, equal opportunities and fair creation and distribution of wealth.

However, current, earth-bound implementations of blockchain and electronic currency have not delivered on this promise:

🛰 Most user-friendly ways to receive, keep and spend electronic currency and tokens rely on third-party providers – essentially, new central authorities. These authorities may freeze accounts and funds at any time they choose.

🛰 At the same time, these third-party providers are extremely attractive targets of hacking and other cyber attacks, in a way that individual accounts are not.

🛰 Although utilizing blockchain is faster than many operations in the fiat currency world, most blockchain operations are not real-time. This is not only an inconvenience, but a tangible risk to the users' funds in time of high volatility.

🛰 Finally, and most importantly, any blockchain ecosystem or provider is subject to the laws and regulations in their country of residence or incorporation. Even if a project chooses to move to another country with more crypto-friendly regulations, the team can never be certain that their current government, wherever it may be, will not decide to crack down on blockchain and electronic currency tomorrow interest or plain old FUD.
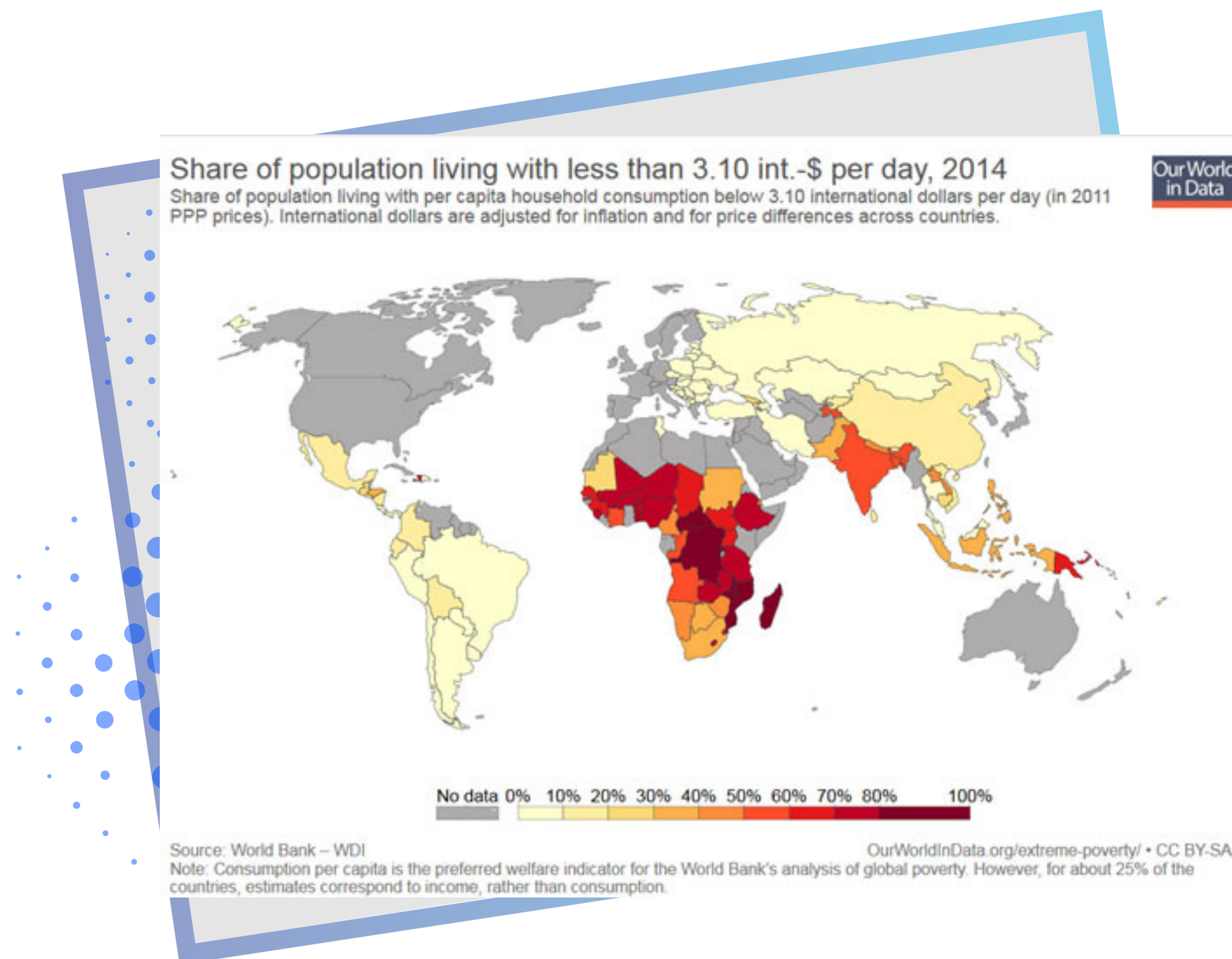
Banking the Unbanked

Due to the reasons cited above, blockchain technology still has not taken its place in reducing world poverty and enabling equal opportunities. Even more than 10 years after the original inception of blockchain technology, there are still over 2 billion unbanked individuals in the world, cut off from all global opportunities and wealth creation.

What these individuals need, regardless of their location in developing or developed countries, is financial inclusion – key to reducing poverty by enabling them to create and expand businesses, conducting efficient and transparent transactions and managing savings securely.

A large proportion of the current unbanked – 21% and 12%, respectively – are located in the high-growth economies of China and India. Therefore, any venture aimed at improving their economic situation and offering them the chance to start, manage and grow businesses, unencumbered by hypertrophic regulatory landscapes and corrupt governments, has a huge growth potential. This is where SovereignSky comes in.

A New, Responsible Blockchain Ecosystem

At SovereignSky, we are proposing a novel blockchain built upon prior work by one of the founders – EOS and Bitshares – function can be described as the world's operating system, independent of any single jurisdiction.

We strongly support the responsible blockchain concepts laid out in PwC's report "Building block(chain)s for a better planet" as one of the elementary parts of the Fourth Industrial Revolution (4IR). 4IR represents the rise of interconnected and increasingly ubiquitous technologies such as the Internet of Things (IoT), virtual reality (VR) and artificial intelligence (AI). More than any set of new technologies in the past, these technologies are not only technological but also social revolutions that play a major role in the dawn of a new society.

We have the advantage of being one of the adopters actors in this new society, and therefore the opportunity to shape things to come. In today's blockchain sphere, it is our responsibility to make sure that the new society we are building is one of mutual trust and respect and fair and equal access for all, as it is easier to shape a social movement the right way from the beginning than try and change it after decades of existence.

Past innovations have increased wealth and comfort for a small subset of nations and individuals and have created a number of unsolved challenges. What we need now for tomorrow is a revolution of equality and sustainability to address the challenges:

Climate Change

🛰️ Today's greenhouse gas levels may be the highest in 3 million years, rising to 412 parts per million in May 2018.

🛰️ Changes in precipitation, extreme storms, rising sea levels, coastal inundation and heatwaves directly affect people's security, economic well-being and health. For instance, deaths caused by extreme heat in Europe are projected to rise to 150,000 a year by 2100.

Biodiversity and Conservation

🛰️ The Earth is losing its biodiversity at mass extinction rates. One in five species on Earth now faces eradication. This statistic will rise to 50% by the end of the 21st century unless we take urgent action.

🛰️ Current deforestation rates in the Amazon Basin could lead to an 8% drop in regional rainfall by 2050 which will in turn trigger a shift to a "savannah state" with wider consequences for the Earth's atmospheric circulatory systems. Biodiversity loss has a direct human impact – threatening energy, clean water and food supply.

Healthy Oceans

🛰️ The chemistry of the oceans is changing more rapidly than at any time in 300 million years, as the water absorbs anthropogenic greenhouse gases. The resulting ocean acidification and warming are leading to unprecedented damage to fish stocks and corals.

🛰️ Some 8 million tons of plastic are predicted to enter the oceans each year. Plastics – and the toxins they frequently carry – accumulate in the food chain and find their way back into humans. Estimates suggest around 6,400 microplastics per year are ingested by the average European shellfish consumer.

Water Security

🛰️ The world's demand for water has grown by around 1% per year. By 2030, we may fall 40% short of the amount of fresh water needed to support the global economy as pollution and climate change affect the global water cycle.

🛰️ For 1.9 billion people, water scarcity is already a reality – this number is expected to rise to 3 billion by 2050. Microplastic fibres were found in 83% of tap water samples around the world and more than 90% of bottled water analyzed.

Clean Air

🛰️ Around 91% of the worlds population live in places that fail to meet World Health Organization (WHO) air-quality guidelines.

🛰️ Around 7 million people die annually from exposure to air pollution – one death out of every eight globally.

Weather and Disaster Resilience

🛰️ In 2017, the world suffered 710 geophysical, meteorological, hydrological and climatological "natural-loss events" – almost triple the number it suffered in 1980.

🛰️ These events caused approximately $330 billion in damages, less than half of which was covered by insurance. In parallel, 23 million people were displaced.

"SovereignSky will beam electronic currency from space to modems connected to RUON AI phones; distributed to villages, orphanages, hospitals and people in need situated in the poorest and remotest parts of the world".

Timothy E. Burke
SovereignSky

The technologies of the 4IR, and blockchain technology in particular, are uniquely suited to addressing and solving these challenges. They provide the opportunity to create value while saving resources in an unprecedented manner, if deployed in the right way.

In the following section, we will discuss how exactly blockchain technology (see figure below) needs to be applied to solve today's challenges and how SovereignSky incorporates all the necessary characteristics for tomorrow's blockchain ecosystem.

Solving Tomorrow's Challenges with SovereignSky

There are a number of ways in which a sufficiently refined blockchain system like Sovereign Sky can help solve the challenges posed by current developments.

Climate Change

- Peer-to-peer renewable energy - trading systems.
- Crowdsale for renewable energy investment.
- Optimized distributed grid managment.
- Authentication of renewable energy certificates.

- Blockchain-based land, corporate, civil and asset registries.
- Citizen loyalty and reward platforms for climate action.
- Decentralized voting platforms for climate action.
- Secure paperiess transactions.
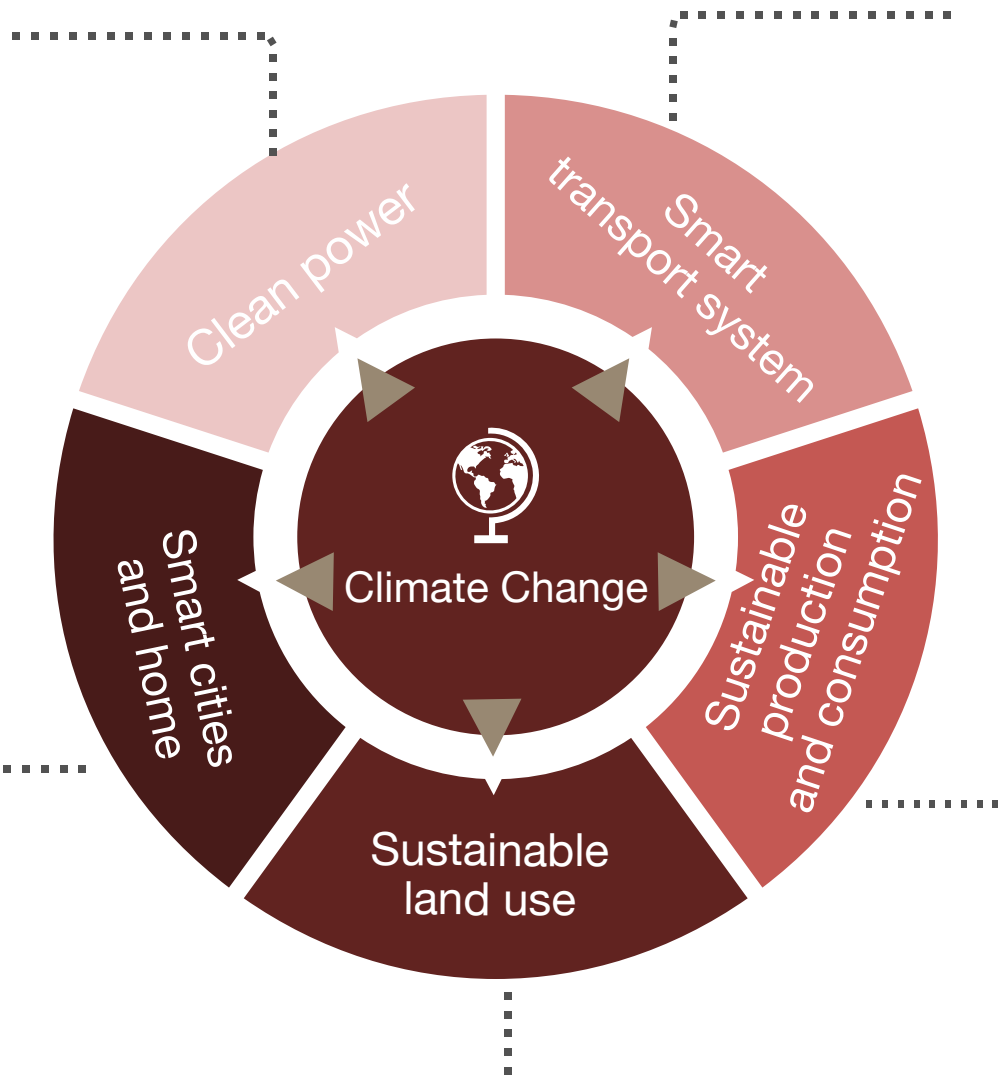
- Data leader for optimized transport logistics.
- Blockchain-based decentralized delivery networks.
- Peer-to-peer vehicle sharing.
- Smart parking system for optimized mobility management.

- Ledger for collection and verification of ESG data.
- Soil properties data collation from distributed sensors.
- Blockchain-powered platform for carbon offsetting.
- Waste-to-energy blackchain solutions.

- Blockchain-enabled sustainable mining.
- Automotion of data collection and management accounting.
- Financing sustainable land use.

Biodiversity and Conservation

- Electronic currency for investment in habitat restoration and species conservation.
- Tracking geographic reach and movement of endangerred species.
- Incentivization for farmers to protect habitats.

- Timber and other natural resources provenance tracking.
- A decentrarized natural asset exchange platform
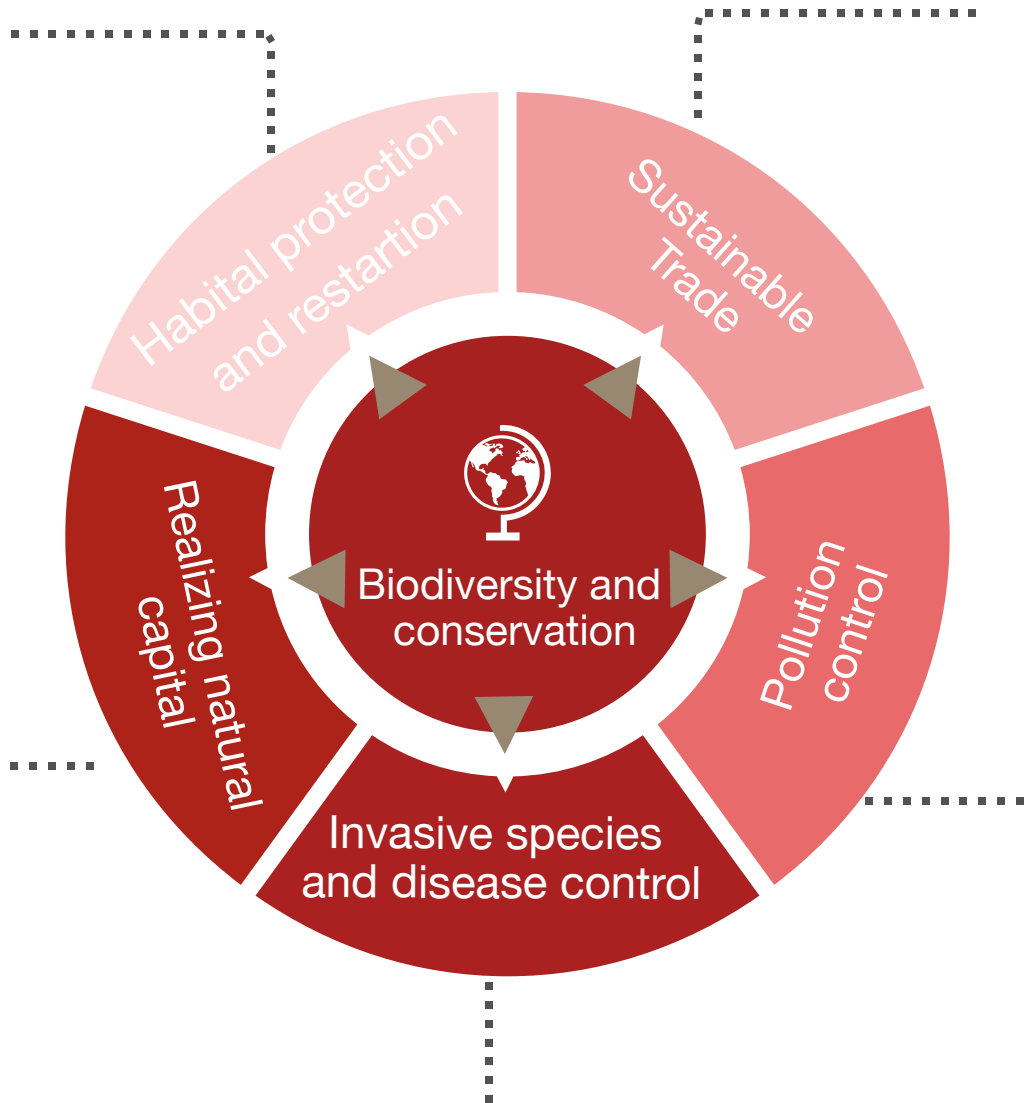
- Transparent monitoring of supply chain transactions.
- Real-time traceability of supply chairs.

- Recording of pesticide use on agricultural land.
- Incentivized system for responsible waste management

- Digital data platform for species tracking and disease control.

Healthy Oceans

- Tracking fish provenance.
- Monitoring of illegal fishing activities.

- Incentivized ocean plastic recycling initiatives.
- Transparent ledger for faster, safer and more efficient shipping.
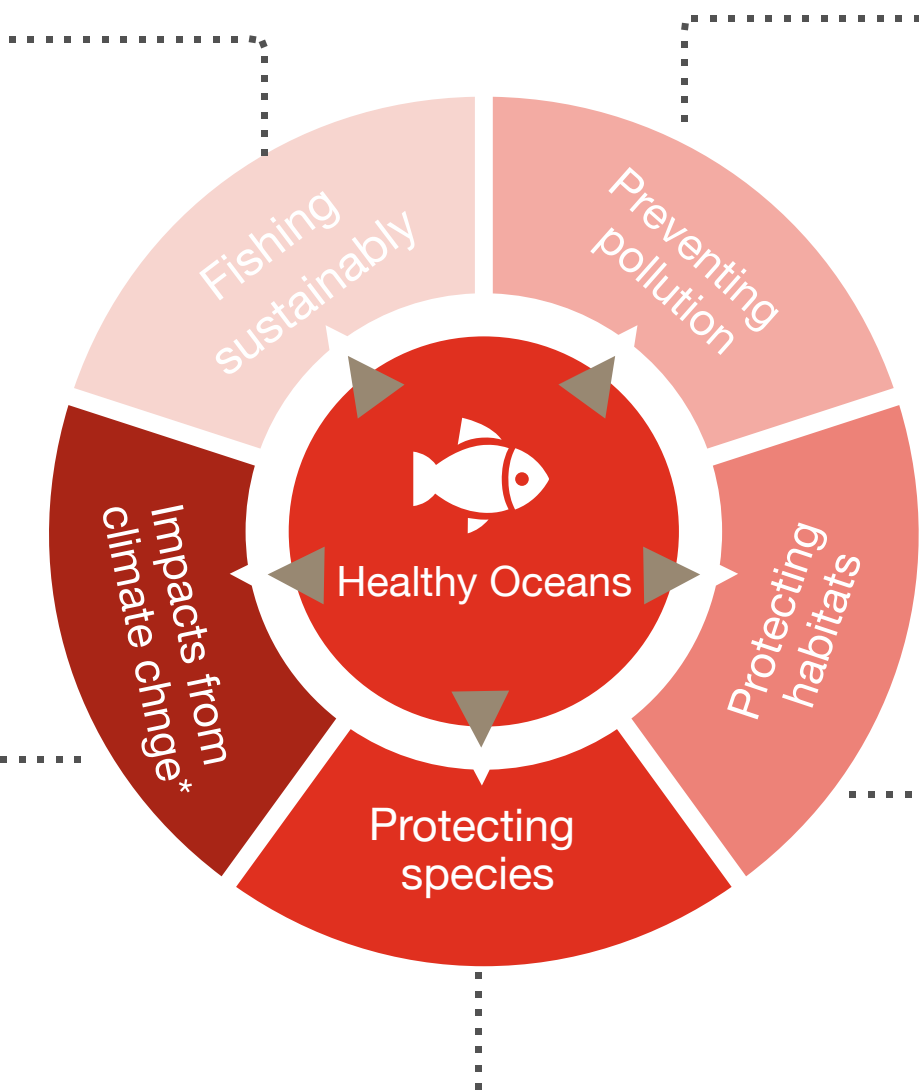
- Real-time monitoring of ocean temperature and pH.
- Incentivized collection of data on ocean conditions.

- Decentralized and open-source ledger of ocean data.

Fishing sustainably

Preventing pollution

Impacts from climate chnge*

Healthy Oceans

Protecting habitats

Protecting species

- Fundraising for marine wildlife conservation.

Water Security

- Water monitoring and management.
- Micropayments for water meter donations.

- Deecentralized, catchment-based approach to improving water quality.
- Water quality control in catchment areas.
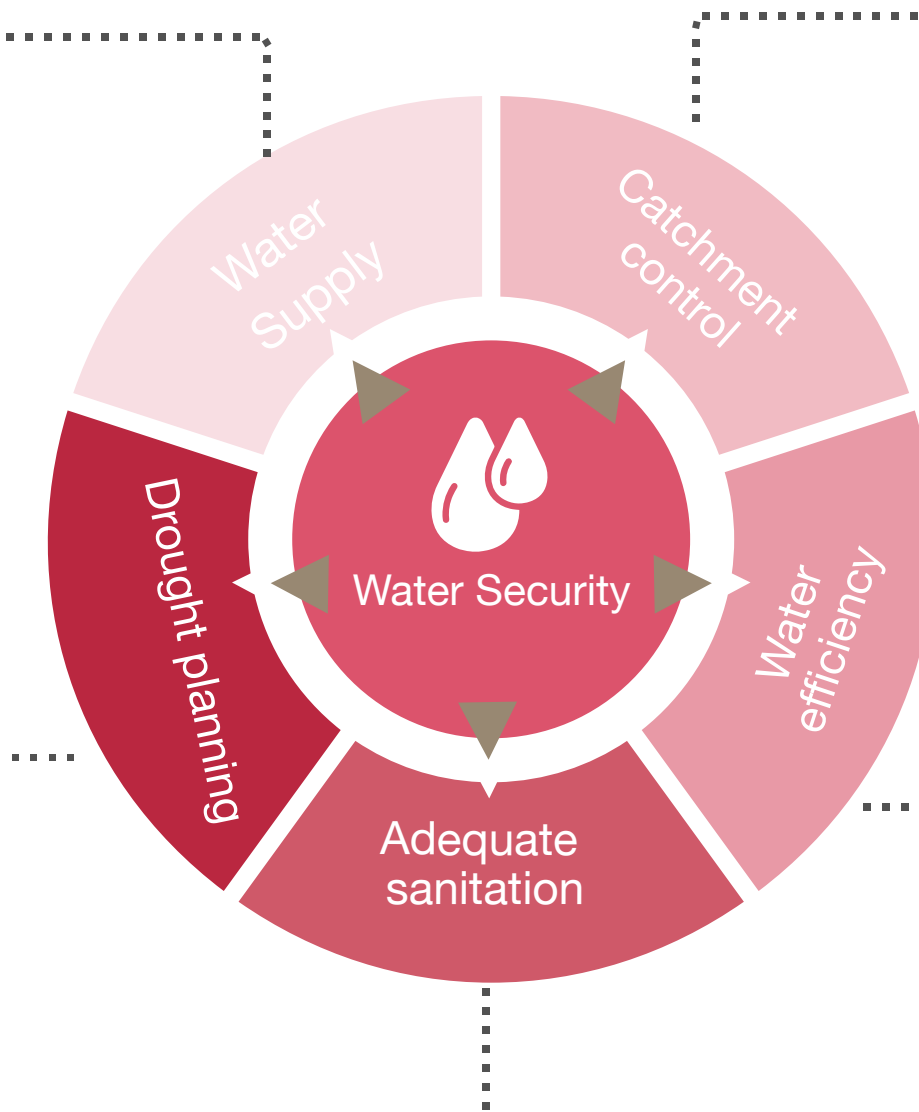
- Precipitation intensity monitoring and forecasting.
- Automated crop insurance for drought periods.

Water Supply

Catchment control

Drought planning

Water Security

Water efficiency

Adequate sanitation

- Blockchain-enabled peer-to-peer trading of excess water resources.
- Electronic currency-enabled smart meters.

- Asset-backed token system for clean, accessible drinking water.
- Hyperlocal water data for monitoring water quality.
- Efficient water treatment systems

Clean Air

- Air Pollution data collection from distributed sources
- Automated activation of air-filtration devices

- Local and real-time monitoring of particulates and NO2
- Intelligent methane monitoring systems

- Electronic currency payments for EV public charging
- Enabling safe and realiable AV implementation

- Automated air-quality monitoring system
- Early detection of toxic chemical leaks

Filtering and capture

Monitoring and prevention

Clean Air

Clean Fuels

Early warning

Weather and Disaster Resilience

- Extreme weather impact analysis
- Ledger to identify, verify and transact weather data

- Real-time monitoring of natural hazards
- Decentralized weather sensors generating automated alerts

- Enhanced emergency disaster response

- Automatic rerouting of power to prevent blackouts
- Decentralized mini-grids improving disaster resilience

Prediction and forecasting

Early-warnning System

Resilience Planning

Weather and disaster resilience

Resilient Infrastructure

Financial Instrument

- Disaster recovery funding
- Decentralized disaster insurance platforms
- Management of transactions in response to extreme weather event
- Crowdsale for adaptation investments

In all of these instances, blockchain technology can be utilized to support and replace conventional and outdated technologies that are currently being used in addressing these challenges.

However, there is another, even more revolutionary way of applying blockchains for the world that enable processes that have never before been possible.

SovereignSky Mitigates Blockchain Risks

Blockchain technology is a significant step forward for a better tomorrow. However, results do not come without risk. PwC report "Block(chain)s for a better planet" points out several risks and disadvantages potentially associated with blockchain technology:

Adoption Challenges

User experience and usability.

Technology Barriers

Limited transaction capacity and scaling.

Security Risks

Data leaks and unintended data sharing.

Legal and Regulatory Challenges

Unclear legal jurisdictions and regulatory barriers.

Interoperability Risks

Lack of standards.

Energy Consumption Challenge

Energy-intensive PoW.
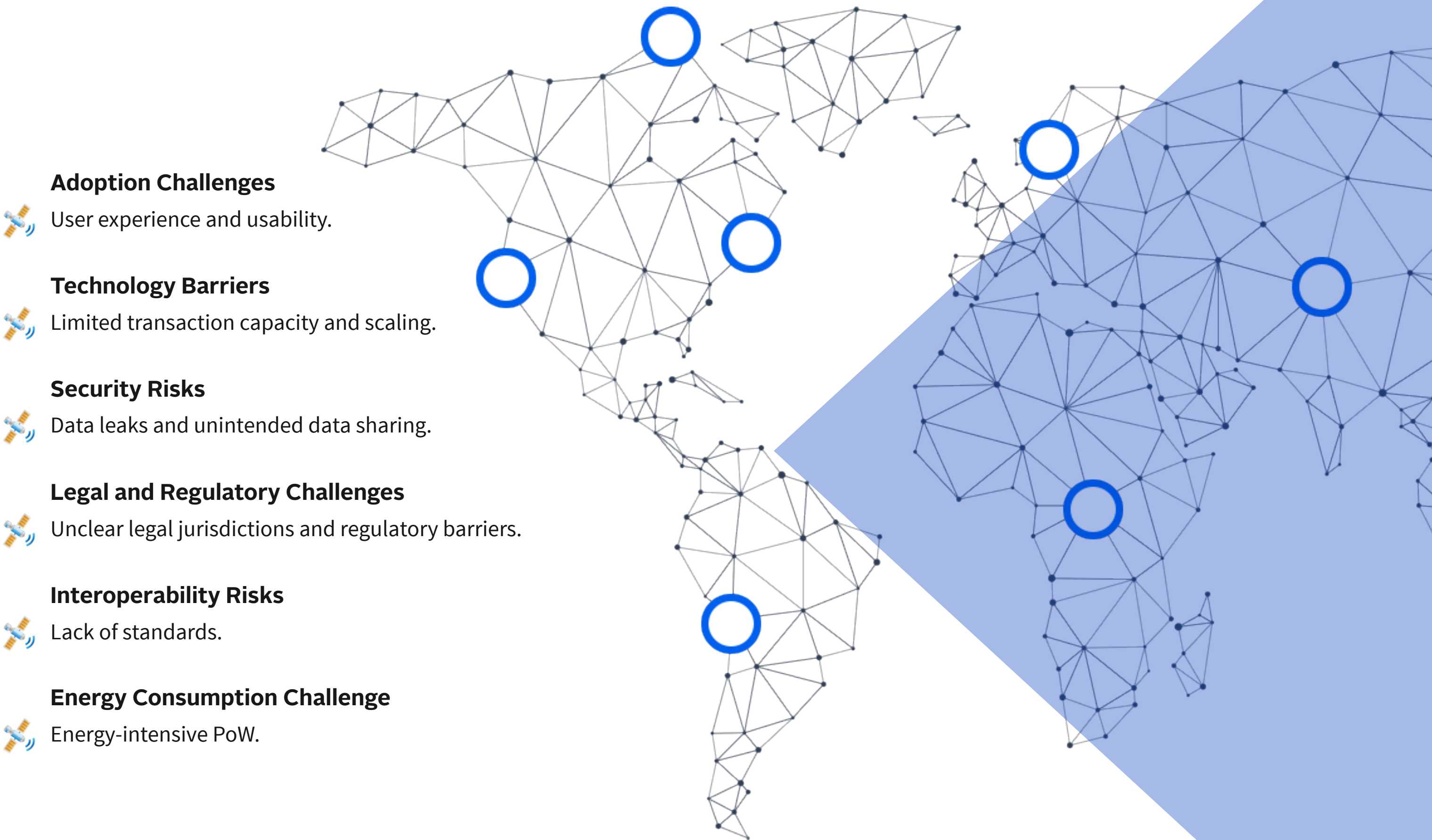
SovereignSky addresses several of these risks directly:

User-friendly application ecosystem that resolves adoption challenges.

Sufficient scalability to serve the blockchain ecosystem and power the economies of a whole planet due the basis in EOS technology.

Eliminates legal challenges of adaptation to different regulatory frameworks, as it is located in space.

Sets new standards and regulations.

And it utilizes EOS's energy-efficient consensus algorithm.

3. Freedom and Decentralization in Space

Most, if not all, of the jurisdictions on earth suffer from hyperregulation.

Although blockchain technology was originally conceived to put an end to inefficient regulation and the arbitrariness of central authorities and their laws, today's reality looks different: innovators and founders in the blockchain world are constantly on the lookout for places that will permit them to pursue their visions freely, without prosecution based on obsolete laws of earlier centuries. Much of founders' resources, be it money, time or brainpower, is nowadays wasted on such trivial issues as finding a suitable headquarters for their operations.

SovereignSky is attempting to put an end to this waste and inefficiency: Space is the final frontier and haven for innovators and inventors, for entrepreneurs and business people, from developing and developed countries alike. It is the ultimate conquest of traditional central authority – it replaces centralized dependence with decentralized and evenly distributed independence.

Before blockchains... Bank 1 Bank 2 Bank 3 Bank 4 Data 3rd Party "You don't trust each other, so trust me instead ☺"

With blockchains... Bank 1 Bank 2 Bank 3 Bank 4 Data 3rd Party "We don't need you: we use a blockchain! ☺"
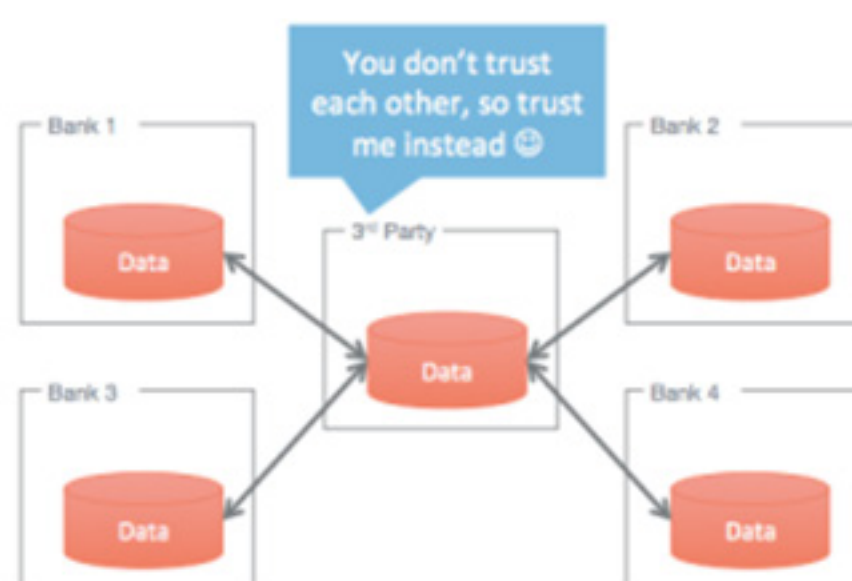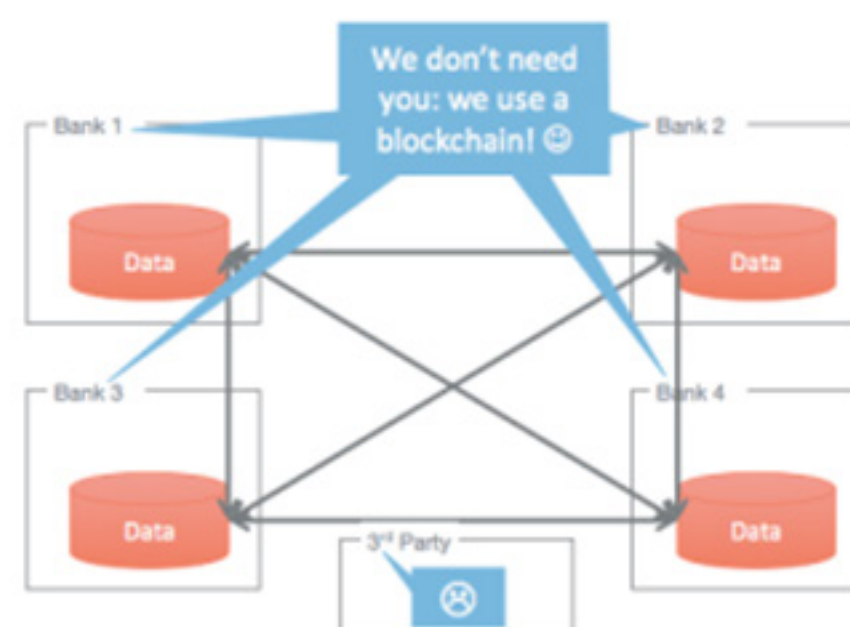
4. Solid Foundations: The Technological Basis of SovereignSky

SovereignSky is based on two of the most revolutionary blockchains of recent years: Bitshares and EOS, both based on the Graphene blockchain implementation and part of the Cryptonomex family of companies.

Exchange (Dex)

Payment/Processing

Marketplace

Social network
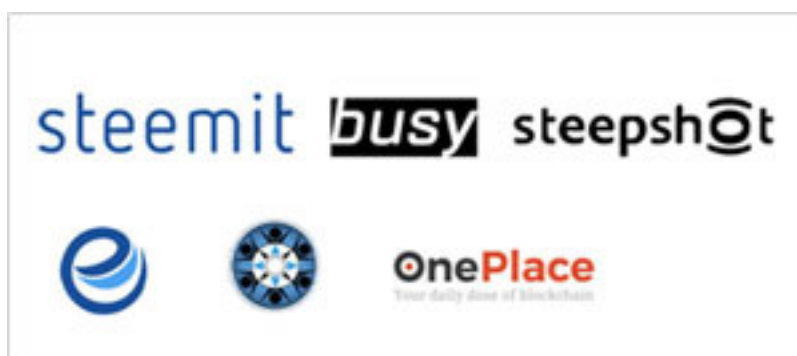
Asset Peg/Funds

Remittance
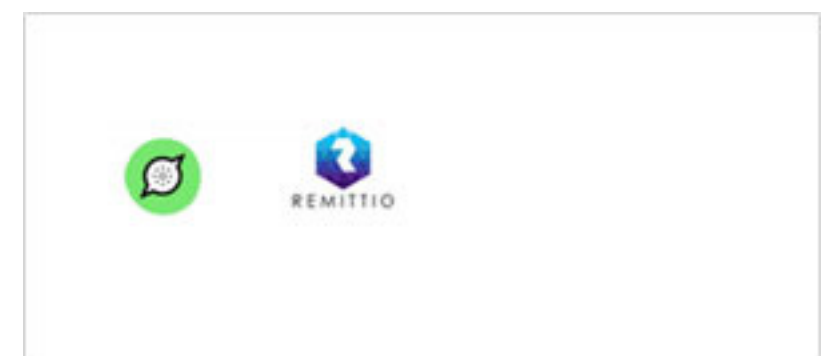
Entertainment
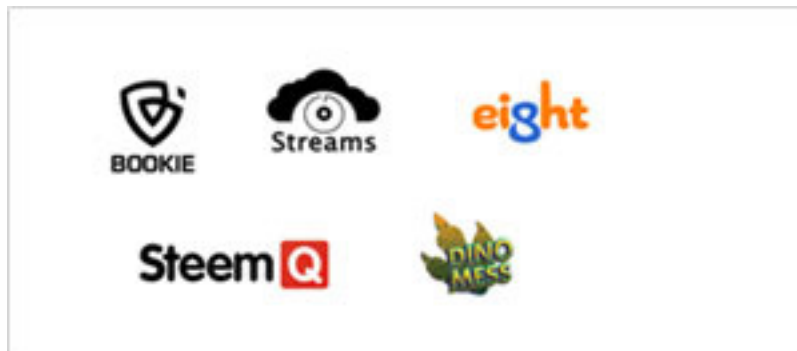
Data/APi

Gateway/Bridge

Registry
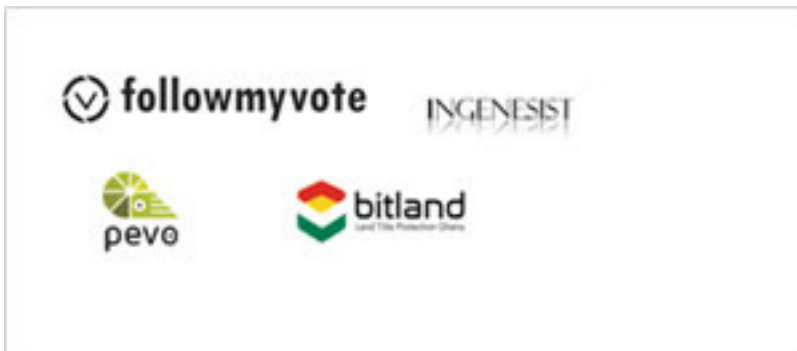
Graphene Blockchains

- 3000+ Trx/sec
- 3 sec Blocktime
- Delegated PoS

Graphene technology
Blockchain Development ToolKit

- Performance
- Scalabilty
- Economic

Bitshares In Short

Bitshares is a blockchain-based real-time financial platform and the most powerful blockchain ecosystem of its time, an industrial-grade crypto-equity peer-to-peer distributed ledger and network using a Delegated Proof of Stake (DPoS) consensus algorithm.

It offers market participants the opportunity to create decentralized autonomous companies (DACs), based on smart contracts. These companies, as their name suggests, are run automatically, without human intervention, and can for example sell shares and distribute profits between their shareholders. Bitshares's token, BTS, is more than a traditional electronic currency it functions as equity and collateral for decentralized financial services – such as so-called smart coins or stable bitAssets which track the movements of real-world market assets (for example, bitUSD), which are more stable and predictable and less volatile than commonly traded electronic currency assets.

One of Bitshares most attractive and revolutionary features is its decentralized exchange, Bitshares DEX, which is also based upon Bitshares original technology, and is resilient against the hacks that have plagued electronic currency exchanges in the past (like, for example, the notorious Mt. Gox).

Furthermore, the Bitshares network is exceedingly fast, with an average block time of 1.5 seconds and a potential throughput of 100,000 transactions per second.

EOS In Short

The EOS protocol is designed to facilitate the development, hosting, and execution of industry-scale dapps on its smart contract platform.

EOS has solved the issues that have been hampering progress and blockchain adoption in Ethereum, the pioneer of smart contract execution. In contrast to Ethereum, EOS provides many crucial functions that smart contract and dapp developers need again and again in their applications, and it introduces role-based permissions into the blockchain landscape. Furthermore, it provides a mechanism by which broken applications may be fixed without resorting to a hard fork.

Being developed by the same leading team as the Bitshares technology, it shares some of Bitshares's features: first, it runs on the Graphene blockchain implementation and thus employs a Delegated Proof of Stake (DPoS) consensus algorithm, which is a favorable choice for blockchains that seek commercial scalability. In fact, it has a similarly impressive scalability as the Bitshares network described above. EOS has a legally binding framework that defines a common jurisdiction for dispute resolution, and thus addresses the often-faced problem of jurisdictional uncertainty in blockchain businesses. EOS is destined to become the smart contract platform of the future not least due to its superior economic model: while in Ethereum and similar implementations, the network's computing power can merely be rented by the user, and paid for in gas, in EOS token holders become owners of a certain percentage of the network's computational power, bandwidth and storage. This enables them to rely on steady and predictable access to a certain amount of resources, independently of any market movements and price changes.

5. Solution

SovereignSky is a hybrid blockchain, based upon the technological paradigms that were pioneered by Bitshares and EOS. Both of them were revolutionary developments in recent times– as described in the background section of this paper – and will now serve as fertile grounds for a new and ground breaking blockchain in space.

The overarching goal of SovereignSky is to create a satellite network that will deliver not only wi-fi connectivity, but direct access to an extremely powerful blockchain network to Africa, India, South America, and in the long-term to developed countries as well. This will enable Sovereign's electronic currency to be sent to mobile phones distributed to regions in need, which have been distributed by the Sovereign team.

Stan Larimer presenting SovereignSky

Recipients of the RUON smartphone thus will be able to gain direct access to a network that gives them vast opportunities for entrepreneurial action.

In order to achieve this, SovereignSky will build its own blockchain, modelled after the co-founder's previous successes of Bitshares and EOS. It will distribute mobile phones with pre-installed RUON in developing countries to accelerate adoption and ultimately the resolution of poverty.

SovereignSky Specifications: Blockchain

SovereignSky will eventually place the majority of nodes on the BEOS blockchain in orbit where they can operate safely in international space, away from unnecessary innovation-stifling regulation. BitShares EOS (BEOS) is a clone and optimization for business of the EOS blockchain with interfaces to the powerful BitShares decentralized exchange and smart coin factory. BEOS serves as a middle chain between the BitShares DEX (bitshares.org) and the EOS.IO universe.

BitShares, BEOS, and EOS, as well as other blockchains derived the Cryptonomex technology base, are powered by the Graphene blockchain implementation and thus the 'Delegate Proof of Stake' (DPoS) consensus mechanism. This system avoids the centralized, power wasting characteristics of mining-based Proof of Work (POW) blockchains. These and other features relevant to the SovereignSky blockchain are outlined below.

Collectively this family of DPOS (Delegated Proof of Stake) graphene-based technology blockchains (including BitShares, Steem, BEOS, WAX, TLOS and EOS) processes over 85% of the entire world's blockchain transactions. This is compared to mining-based blockchains such as Bitcoin and Etherum and which together only process 3.5% of the world's transactions.

And these mining-based chains are saturated with no room to grow to handle more transactions while the DPOS chains barely move their sweat-o-meters off zero (see blocktivity.info). More importantly for Space-based applications, DPOS nodes only sip power while mining based chains are huge wasters of power that would require an orbiting coal power plant to run them. This makes DPOS uniquely well suited for space-based applications.

Operations on the most active Blockchains (7 Day average)

'Delegate Proof of Stake' (DPoS) has been developed by Dan Larimer, son of SovereignSky's Co-founder Stan Larimer. His objective in the development of this novel consensus mechanism was to re-establish true decentralization in the blockchain sphere. Concerns were growing that existing consensus schemes, such as 'Proof of Work' (PoW) and Proof of Stake (PoS) were developing towards consolidation of resources and thus an increasingly centralized distribution of power, at odds with Satoshi Nakamoto's original vision for blockchains and with the vast majority of the blockchain community's expectations and aspirations.

ETH: 1.6 %
BTC: 1.9 %
Rest: 2.7 %
STEEM: 2.8 %
BTS: 4.1 %
TRX: 6.6 %
EOS: 53.1 %
TLOS: 12.7 %
WAX: 14.6%
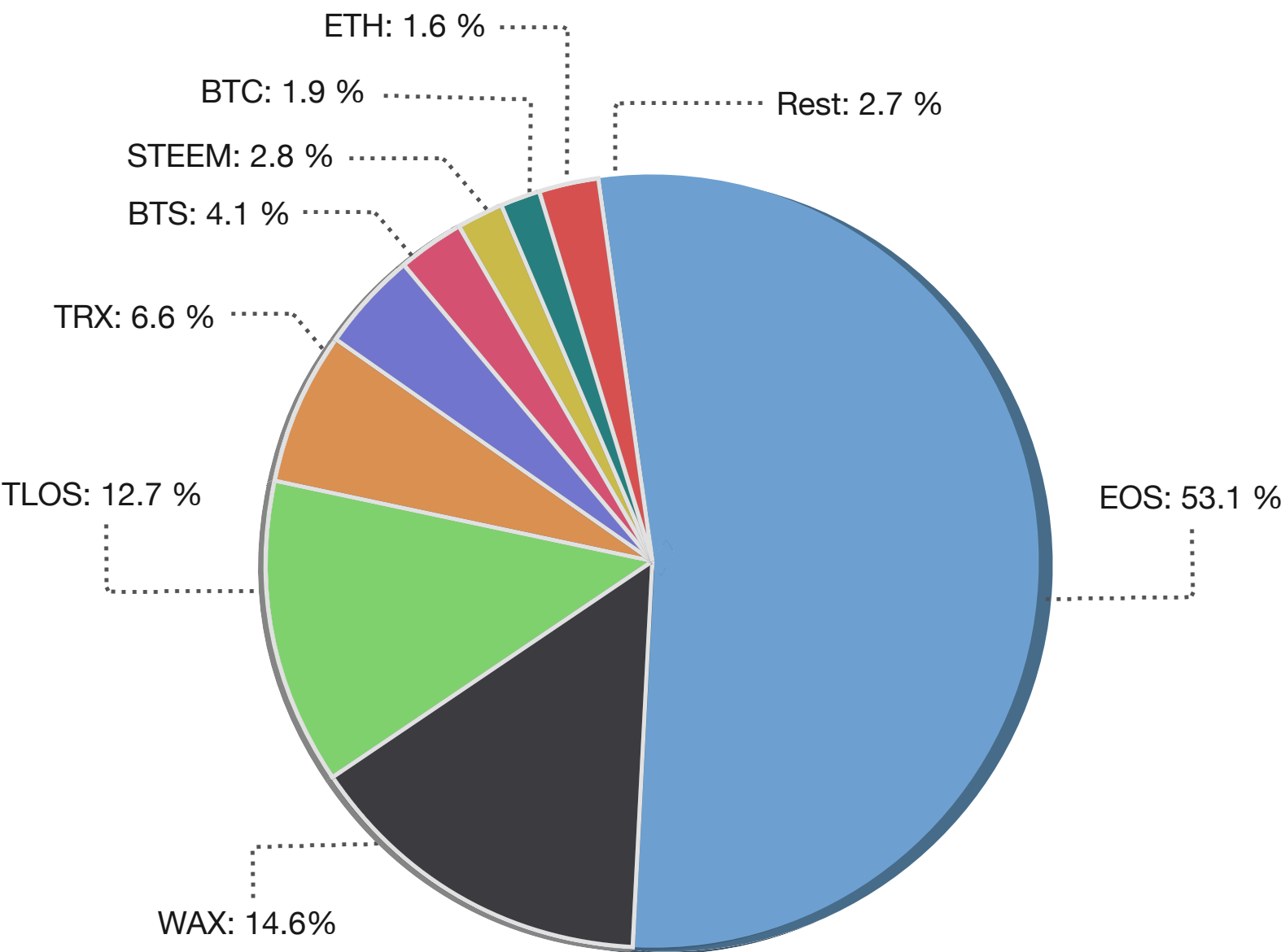
Due to the limited number of elected representatives who are responsible for transaction validation, DPoS consensus schemes are not only fairer and more equal than other consensus mechanisms, but more efficient and faster as well. Bitcoin can take hours or even days to complete a transaction. BitShares completes transactions in an average of 1.5 seconds and BEOS operates with half-second block times. Thus, SovereignSky's BEOS blockchain will operate in real time.

Nodes

Signing nodes are responsible for the decentralized integrity of the integrated BitShares and BEOS blockchains. They are elected by the blockchain's base token holders. Space, sea, and ground based hardware will be provided by SovereignSky to those who get elected to operate them.

Enterprise nodes are processors that perform BEOS-extending functions (e.g. mining, interfacing, escrow, smart contracts, etc.) in the sovereignty of space, or at sea in international waters, and thereby produce revenue for their owners. SovereignSky plans to grow to a total of 63 of these nodes over time. The actual number of total Enterprise nodes may vary due to several factors, including the number of satellites and space borne processors available to SovereignSky as the platform grows and evolves.

Identity and Permission

Similar to most blockchain protocols, the SovereignSky blockchain uses public/private key cryptography to solve the problem of access and permission. However, in contrast to other blockchains, its permission policy is not cryptography-based but account-based: every account can be controlled by a weighted combination of other accounts, i.e., keys. In this scheme, each public/private key pair is assigned a weight, and once the combined weight of key pairs exceed a certain value, permission to access the account and execute transactions is granted. Usability of this protocol is further enhanced by having active keys for everyday use, and owner keys which may serve to restore access as a backup.

Usability

Developers building Dapps for the SovereignSky platform may do so with a user-friendly and accessible web toolkit and a fully-serviced framework provided by the well-funded developers of EOS.IO. Important and frequently used functions such as those for account administration, permissioning and communication, are part of the framework to allow for efficient development in high-level languages.

Coming Advanced Features

The SovereignSky BEOS network will make BitShares smart coin factory tokens portable across the family of EOS powered blockchains. Each node will log its GPS location at every block and only execute transactions that are allowed in its jurisdiction. Nodes located on moving platforms such as cruise ships will execute smart contracts in international waters but not when the ship is docked in a port with unfavorable regulations affecting those contracts.

SovereignSky Specifications: Hardware 17 SovereignSky:

Mesh Network

The earth-bound part of the SovereignSky network and platform is a truly distributed mesh network, which is extremely resistant towards failure of single nodes and towards malicious attacks due to its architecture (see figure).
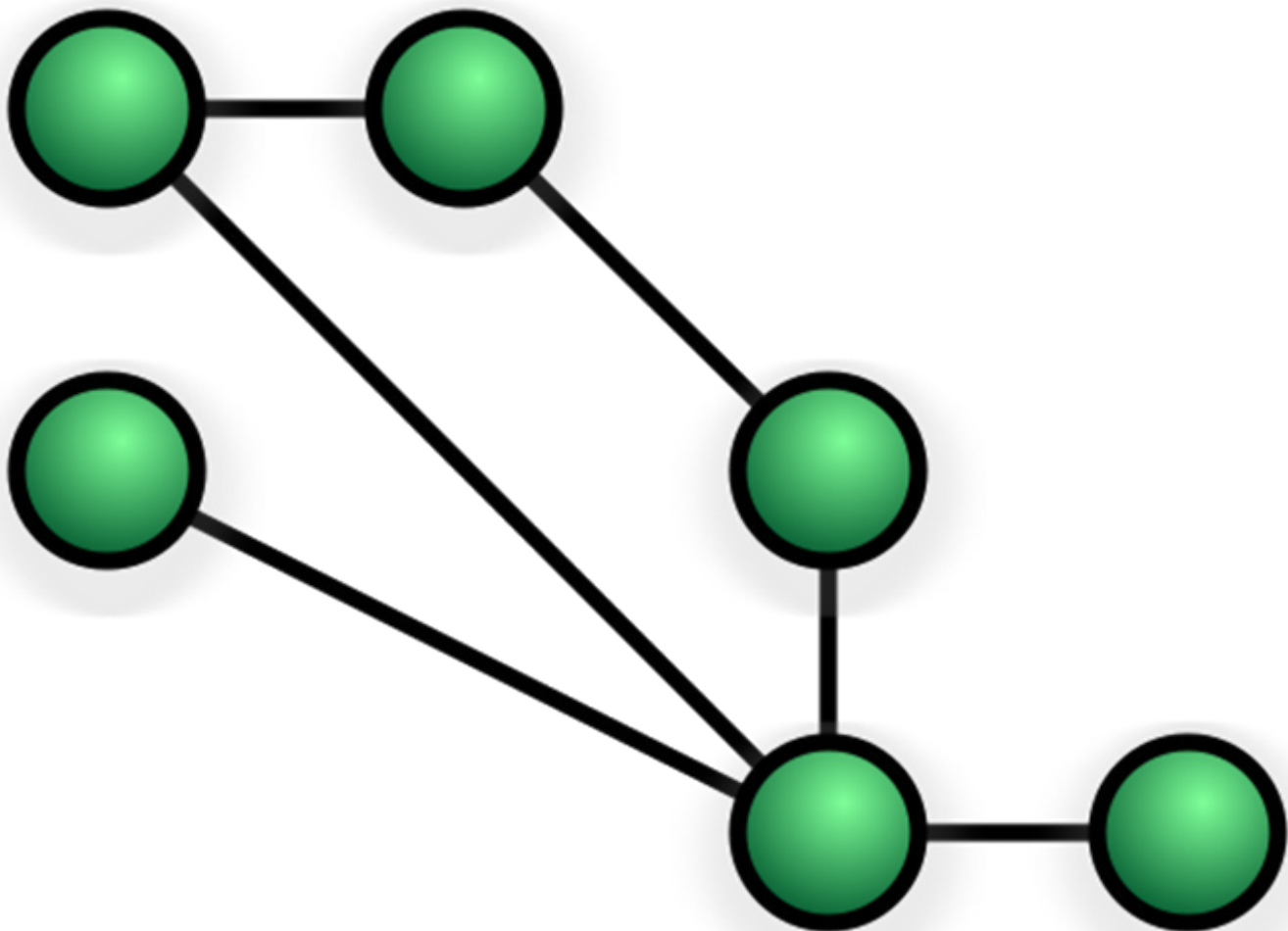
The network will be propagated with specialized antennas, made availble to the population by SovereignSky.

Cube Satellites and Ground Stations

A mesh network alone cannot be the solution to the challenges outlined above: it is subject to national regulations, and its range is limited by geophysical features. Therefore, a crucial element of the SovereignSky ecosystem is its satellites, developed and deployed by SpaceQuest, Ltd. (see Partner section below).

Stan Larimer presenting one of SovereignSky's satellites The earth-bound network, which takes Sovereign Sky through the last mile to the user and customer, is connected to the satellite network through ground stations, which are deployed and maintained by SovereignSky and its local and regional partners.

By connecting satellites to custom inexpensive user terminals, the final step of completing the initialequatorial constellation of eight satellites with crosslinks along with adapting a standard smart phone to communicate with the satellites will be attained.

80% of all Blockchain traffic touches a creation by the Larimer name.

SSO-A
SmallSat Express

Cube Satellites and Ground Stations

SovereignSky will employ the SmallSat Express service of its trusted partner Spaceflight Industries.

Spaceflight Industries' SSO-A SmallSat Express was launched in December 2018 aboard a SpaceX Falcon 9 out of Vandenberg Air Force Base in California.

Size of the SmallSat Express (human for scale)

Not only does it represent the company's first purchase of an entire Falcon 9 to accommodate the growing number of customers seeking affordable rideshare options to launch their spacecraft into orbit, it's also an historic launch: it's the largest single rideshare mission from a US-based launch vehicle to date.
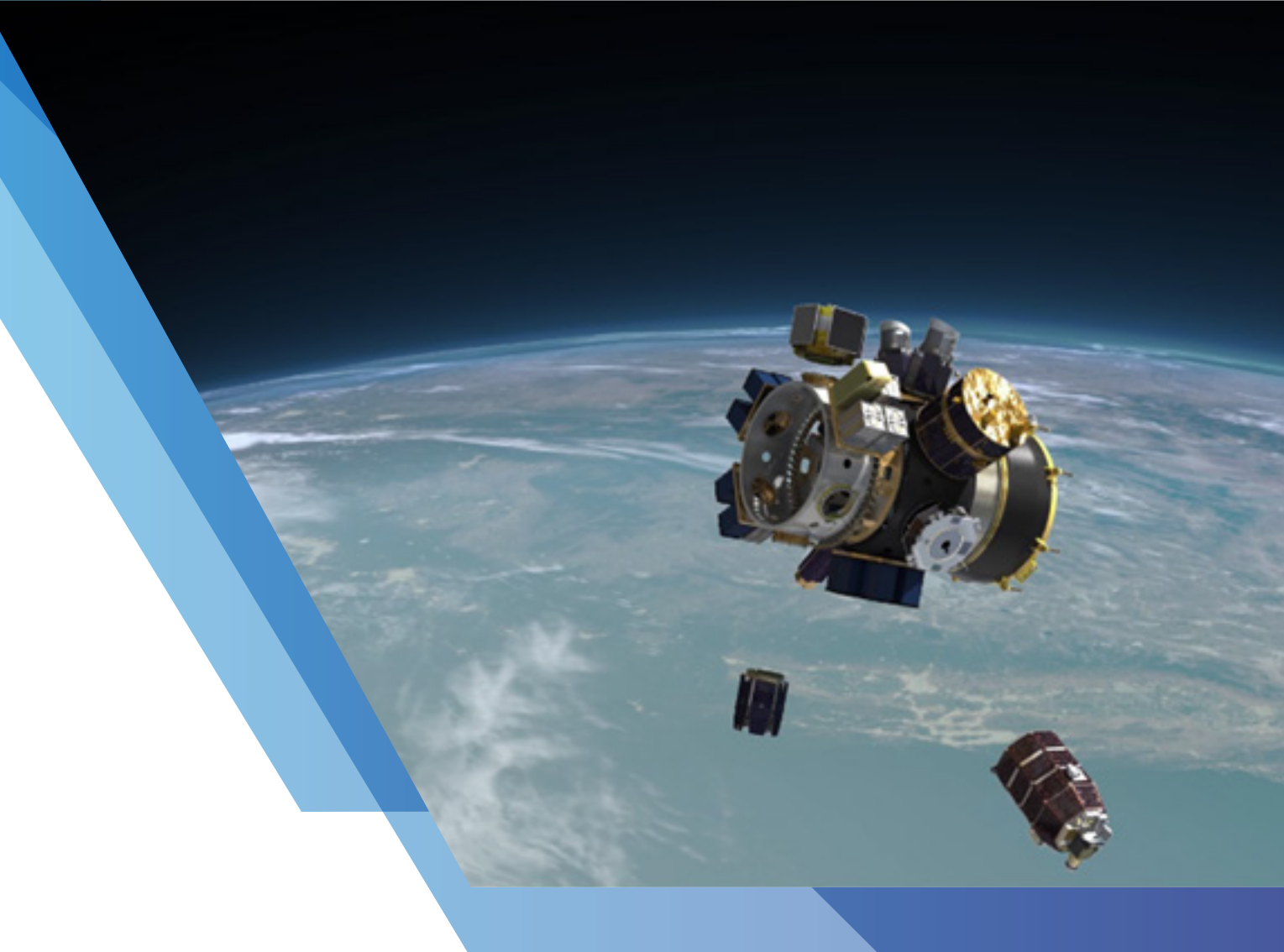
Deployment of micro- and nanosats from the SmallSat Express

Spaceflight has contracted with more than 70 spacecraft from approximately 35 different organizations for the mission to a Sun-Synchronous Low Earth Orbit. It includes 15 microsats and 56 cubesats from both commercial and government entities, of which more than 30 are from international organizations from 18 countries, including United States, Australia, Italy, Netherlands, Finland, South Korea, Spain, Switzerland, UK, Germany, Jordan,
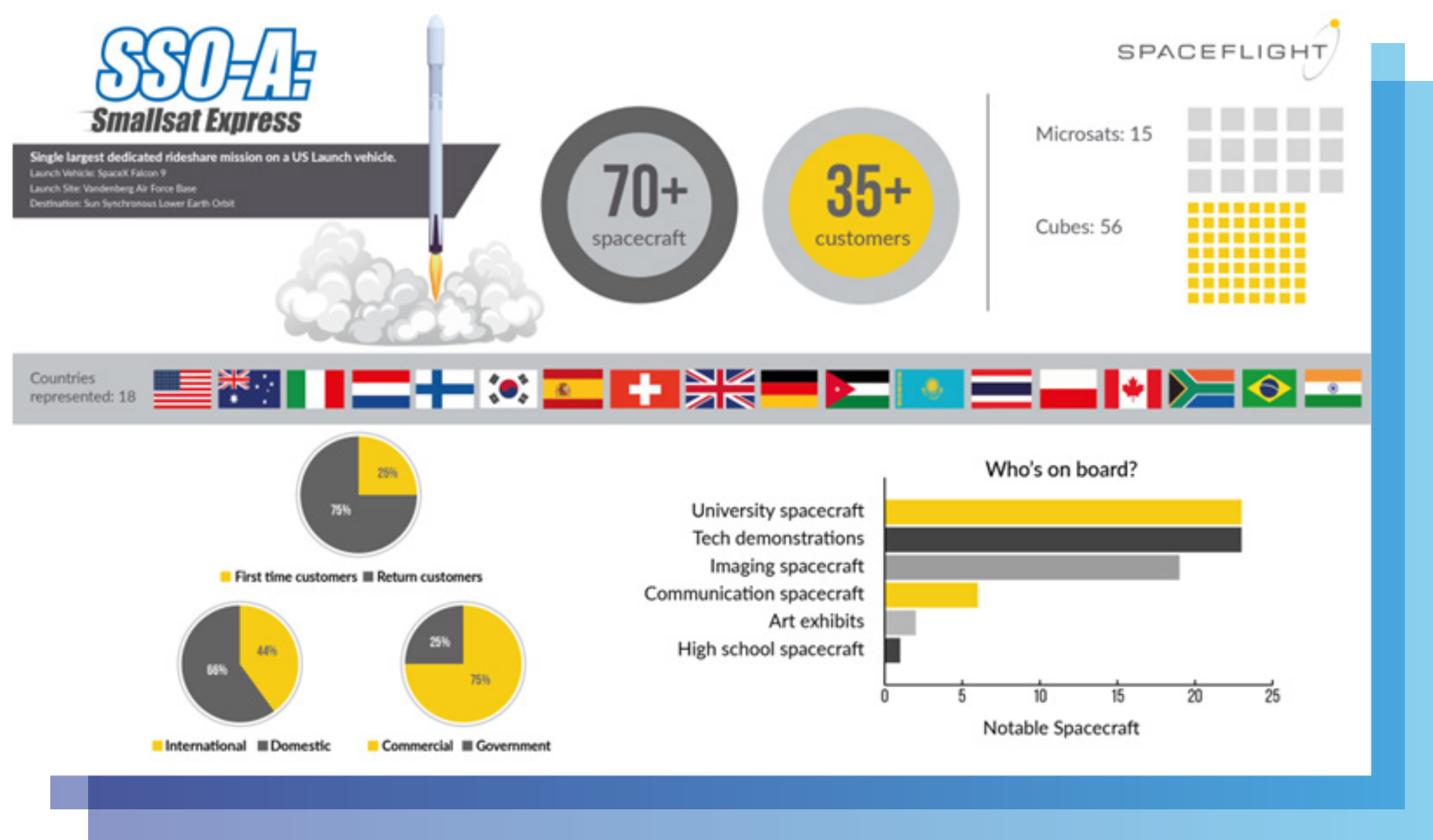
6. SovereignSky Space Network

The overarching goal of SovereignSky is to create a satellite network that will deliver not only wi-fi connectivity, but direct access to an extremely powerful blockchain network to Africa, India, South America, and in the long-term to developed countries as well. This will enable Sovereign's electronic currency to be sent to mobile phones distributed to regions in need. Recipients of the RUON smartphone thus will be able to gain direct access to a network that gives them vast opportunities for entrepreneurial action.

The space segment of the SovereignSky program will be developed and deployed in **Five Phases.**

Phase One: is to port the current blockchain software to flight processor hardware that can be used in space. This will be done to confirm the technical approach, power consumption, computer processing requirement and communication parameters. The ground blockchain processor will then be configured as an operational blockchain Node.

Phase Two: is to upload the blockchain firmware to **SovereignSky's THEA and AS-5** current orbiting satellites to validate operation of a blockchain node in space and to implement the necessary ground station antennas and software to be able to send and process transactions in space. This critical step will insure that the deployment of a constellation of blockchain satellite will be successful. Once we are confident that the satellite and on-board flight processor (managed by SpaceQuest) can successfully execute the world's first blockchain transaction in space, we will be able to move into the next program phase.

In Phase Three: SpaceQuest will complete the construction and testing of **Three 3U CubeSats** similar to the one shown here. These CubeSats will be launched into an Equatorial Orbit, where each satellite will circle the Earth's Equator every 100 minutes. As a result, all of the regions highlighted on the map below will have access to a SovereignSky satellite for 10 minutes every 30 minutes. The red circle areas show the ground coverage of each satellite as it travels over the Equator from west to east.

Ground Segment Antenna nodes deployed in central Africa will provide reliable and secure direct access to the SovereignSky satellites. Initial operations will be carried out using local Antenna nodes that comprise a satellite antenna, software-defined radio modem, a power amplifier and a computer server. SovereignSky customers will be able to log into a nearby Antenna Node via wi-fi to conduct a financial or business transaction using their smart phone with a SovereignSky Application. The transaction data will be sent to the SovereignSky satellites as they pass over the Antenna nodes, and relayed to the other ground Antenna nodes. These Antenna nodes can be deployed in other locations in South America and Southeast Asia to extend network coverage to clients in other nations.

Phase Four: will expand the equatorial satellite constellation to **eight satellites,** which will provide continuous satellite connectivity to all regions in the equatorial belt as shown on the map below. This satellite configuration will ensure complete continuous satellite coverage to the poorest people in the world who will benefit the most from secure blockchain transactions. The Phase Four satellites will contain crosslink communication radios that will allow them to share all transaction information with neighboring satellites. All eight satellites will process and store the transaction data. At least three master antenna nodes will be deployed in non-jurisdictional locations to command, control and maintain the satellites in orbit. An archival copy of all satellite blockchain transaction will be stored at these locations to insure that no client data is ever compromised or lost.
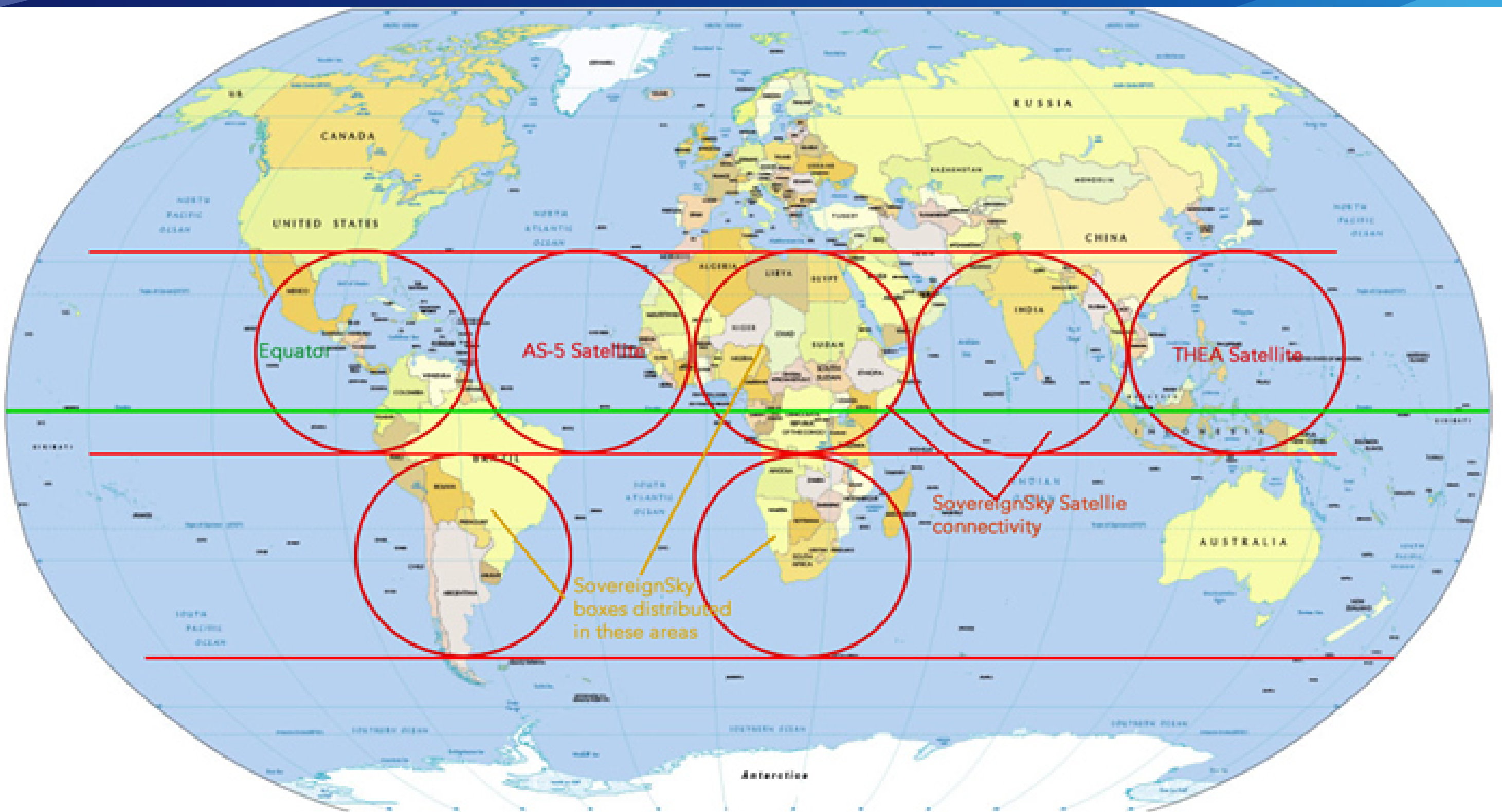
In parallel with the satellite development, and most important, is the development and testing of a portable satellite modem that communicates with a smart phone and can relay the transaction information to the blockchain nodes in space. The ground segment will shrink from a small, fixed, centrally-located Antenna Node to a hand held satellite modem about the size of a smart phone, similar to the one shown here. Once the smart phone application and compact modem are tested and certified, SovereignSky clients will be able to execute a blockchain transaction via satellite from any place in the equatorial belt. Using their SovereignSky app, they will connect to the satellite modem via Bluetooth or wi-fi. The only requirement is that the satellite modem have clear access to the sky. The satellite modem can be shared by multiple users who are in the general vicinity and have the appropriate login credentials
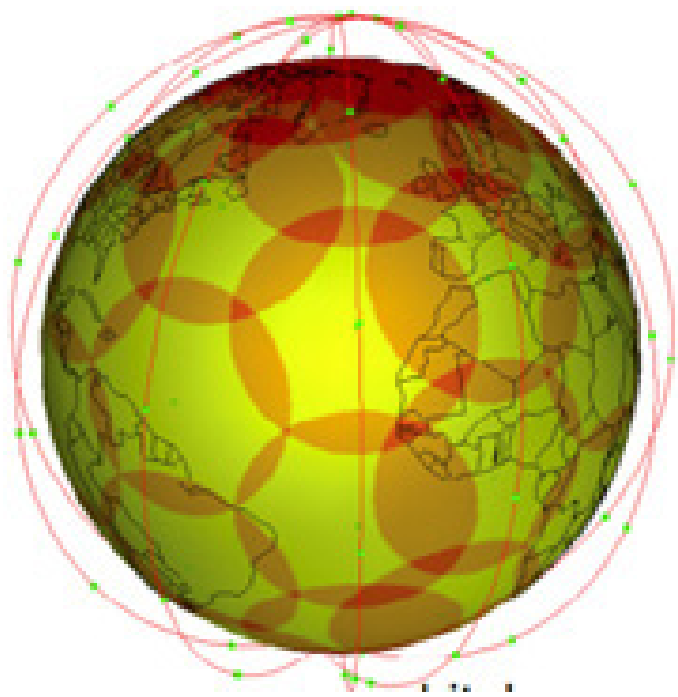
During Phase Five, the SovereignSky satellite constellation will be expanded to cover the globe as shown here. The size of these satellite will be increased to accommodate additional battery power, satellite crosslink communication radios and antennas, an advanced computer processor, and a small propulsion system. The 6U CubeSat structure may be similar to that shown below:

A total of **thirty-six satellites** will be launched using four small dedicated launch vehicles that can place multiple satellites into specific orbital planes.

The Rocket Lab Electron rocket shown below, can place 150kg of satellite payloads into low Earth orbit. Each satellite will contain a small propulsion device to maintain their orbital position with respect to the other satellites.
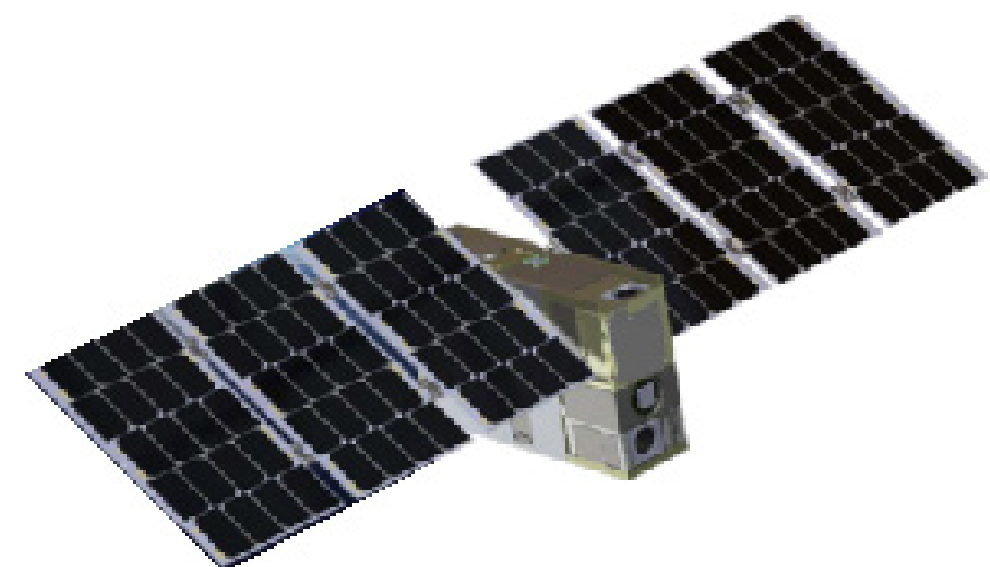
7. SovereignSky Program Schedule

The overall SovereignSky technology development and program deployment schedule is shown in the chart below. Following ground test of the blockchain software on a flight computer, SpaceQuest will begin porting the software to one of its existing CubeSats in orbit. This important proof of concept and feasibility demonstration is essential to the development of firm requirements for the initial SovereignSky satellite space segment. The construction, test and launch cycle for the first three satellites will take approximately twelve months, at which time the full equatorial system of eight satellites with crosslinks and propulsion can be constructed. This will take another 18-months to complete.

Depending on the success and growth of the customer base, SovereignSky will begin the deployment of a full global constellation. This space infrastructure will permit full-time connections to the satellite network everywhere in the world at any time. The timing and extent of Phase Five implementation will depend on the development of an advance personal satellite modem that can be distributed freely or at a very affordable cost.

In summary, SovereignSky plans to develop and perfect the space infrastructure and personal user modems needed to create a global blockchain network that provides a universal digital currency exchange for everyone on Earth, which is independent of national policies, interference and legal restrictions.

Sovereign Sky Program Schedule

	1/1/19	1/1/20	12/31/20	12/31/21	12/31/22	12/31/23	12/30/24	12/30/25
Phase One	Ground Test							
Phase Two	Space Test							
Phase Three		Initial System						
Phase Four			Equatorial System					
Phase Five				Global Constellation				
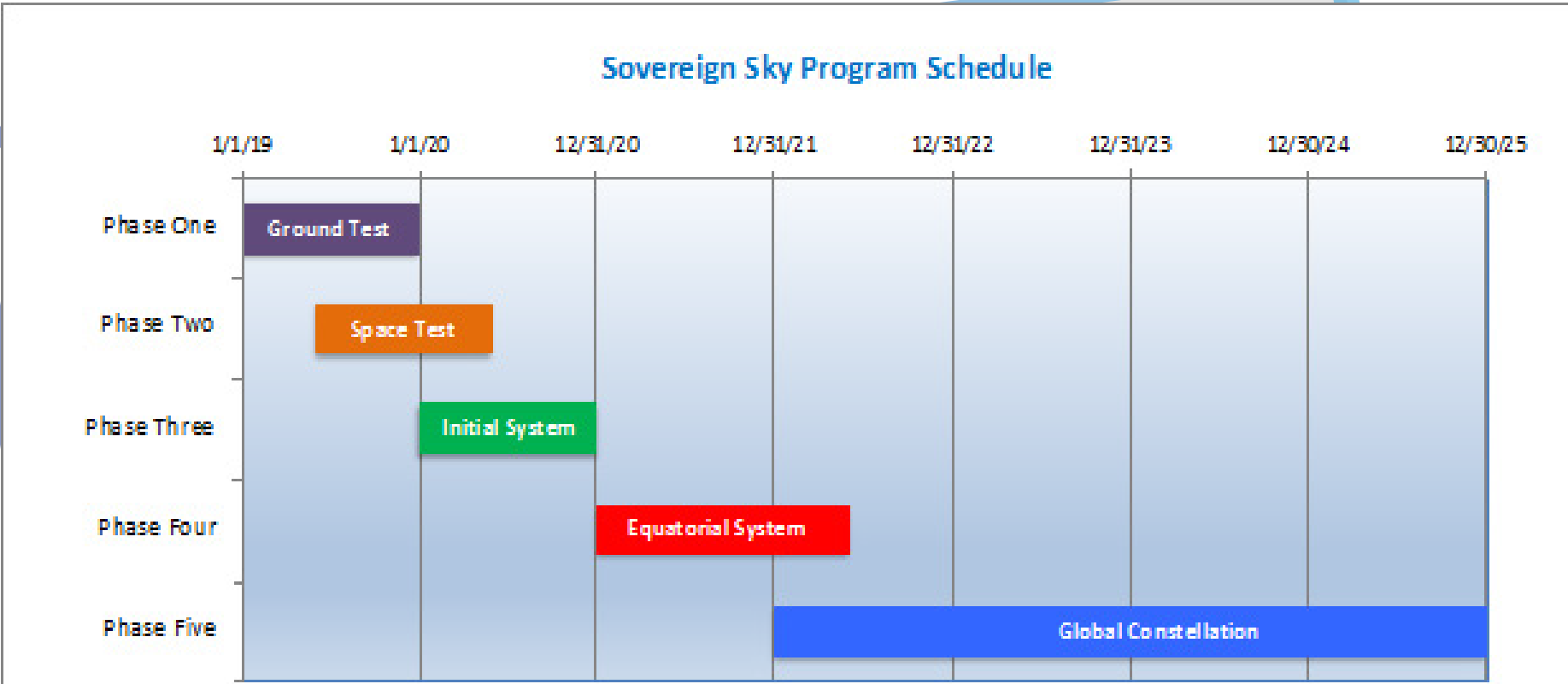
Partners

SovereignSky is proud to announce its partnership with SpaceQuest, Ltd. (www.spacequest.com),the pioneering company in the field of advanced satellite and spacecraft technology, in particular microsatellites. SpaceQuest specializes in the design, development, testing and manufacture of spacecraft as well as space and ground components for operation with low-Earth orbiting satellites.

Over the last 20 years, the SpaceQuest team have successfully built and flown 18 satellites on 9 launch campaigns. Their microsatellite bus has flown 15 times in academic, commercial, and government projects. Thus, they are uniquely suited to providing the technological basis for the revolutionary infrastructure and platform of SovereignSky.

8. Sovereign Coin

Token Pricing and Market Capitalization: Explanatory Notes Prepared by ARQ Economic & Business Intelligence Ltd. Confidential

Introduction

The purpose of this section is to provide direction on key metrics related to the Sovereign Coin Initial Coin Offering (ICO), including token pricing, market capitalization and quantity of tokens issued. This document will also outline the methodology and conceptual approach behind the metrics, as well as potential scenarios based on different market realizations. The aim is to develop a flexible and transparent framework to facilitate understanding of the tokenomics behind the numbers to enable Sovereign Coin to fully capitalize on the opportunities provided by this ICO and any future endeavours in this regard.

Conceptual Framework

2.1 The Dual Utility Principle
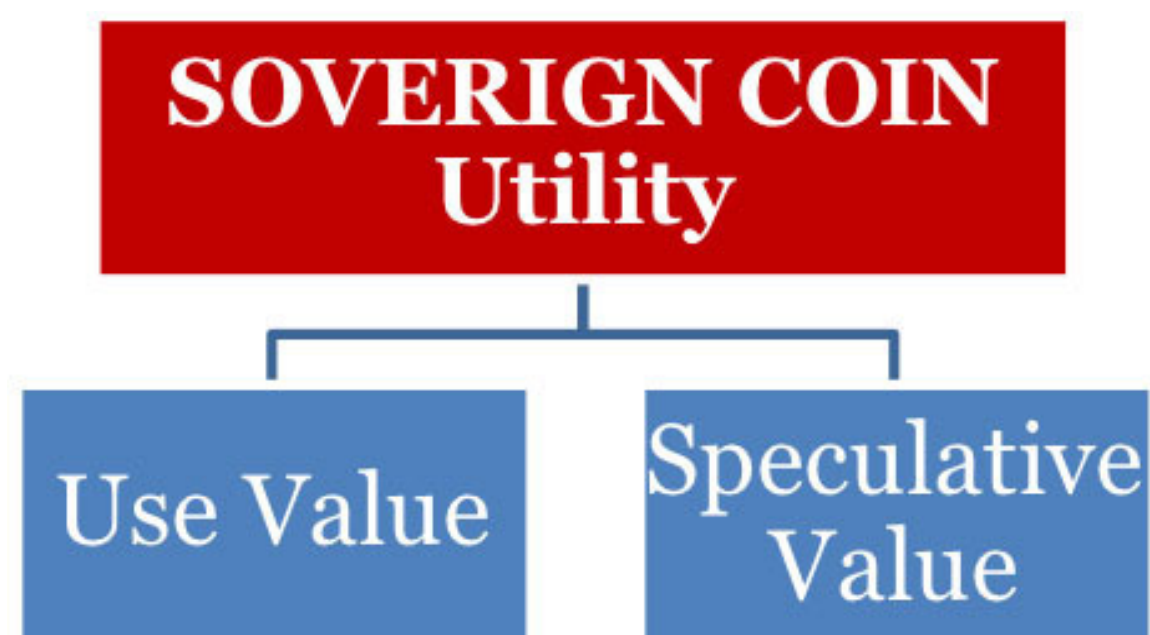
We denote this as the "Dual Utility Principle" and is key to our understanding of how value is derived from tokens and thus the appropriate pricing/market capitalization to assign. Use value is the value obtained from using the token as a medium of exchange, in order to obtain goods or services that satisfy human needs or wants. In this regard, the token behaves exactly as any global currency, and indeed any form of money as defined by Laidler (1985). On the other hand, speculative value is the utility obtained from the token as an investment product or asset, which in turn is based on the (expected) returns derived from the asset as its market value increases over time (Merton, 1973). In this instance, speculative value would be derived as Sovereign Coin's token price relative to other electronic currency or fiat money increases, resulting in increased token-holder wealth.

These two sources of utility are often ignored when calculating the various token metrics for ICOs, in favour of a single approach that typically focuses on speculative value. Each value has its own drivers and market levers which in turn will affect the Sovereign Coin token's desirability and hence price/market cap in different ways. By considering the two in tandem, together with the underlying microeconomics that govern each type of value, the aim is to obtain token metrics that are more reflective of their true market fundamentals and value proposition. Thus, we can rewrite the Dual Utility Principle more compactly as:

$$U(RUON) = f\{u_1(Use), u_2(Speculation)\}$$

Throughout the rest of this document, for tractability we shall assume that preferences are stable, convex and continuous, and that the above utility function is quasi-concave in the quantity of tokens purchased. The total utility derived from Sovereign Coin will thus govern the demand for Sovereign Coin tokens, in line with the neo-classical theory of demand (Samuelson, 1938). It therefore follows that there shall be two distinct strands of demand for Sovereign Coin tokens, namely demand to satisfy use values, and demand to satisfy speculative values. In broad terms, the determinants of demand for Sovereign Coin tokens in each case can be summarised as follows in Figure 2:

2.2 Use Demand

As seen above, use demand hinges on the value of the Sovereign Coin economy, given that end-users will ultimately derive use value based on their ability to utilise the token to satisfy current and future needs or wants. Thus, apart from the existing value proposition of the Sovereign Coin economy in terms of the goods and services that can be purchased, use demand also depends on consumers' perception regarding:

- The ability of Sovereign Coin to maintain and continue to increase its value proposition;
- The accessibility of the Sovereign Coin economy;
- The stability of the Sovereign Coin ecosystem from a technological perspective;
- The risk that services may be discontinued in the future.

Thus, it is important to analyse each one of these factors in order to ascertain the total value of the Sovereign Coin economy to end-users. This is also important since this value will also have a bearing on the value of Sovereign Coin tokens, and thus future returns from a speculative perspective. Clearly, analysing the putative value of the Sovereign Coin economy is fraught with difficulties and subjective assessments – an issue that has plagued economists for several years in different contexts (e.g. Hammond, 1998). Nonetheless, we have sought to develop a tractable, comprehensive framework in order to assess the overall value of the Sovereign Coin economy based on a systematic assessment of Sovereign Coin across various criteria.

Our approach to building a systematic assessment of the Sovereign Coin ecosystem is to adopt a nested-environmental approach of the eco-system. We tackle various elements as we believe that the token lives and survives within a whole ecosystem which is tun determined by a number of different elements. These include:

🛰 The total market

🛰 The Sovereign Coin economy

🛰 The Sovereign Coin token

🛰 The entity behind Sovereign Coin.

The Market

The Ecosystem

The Token

The Entity
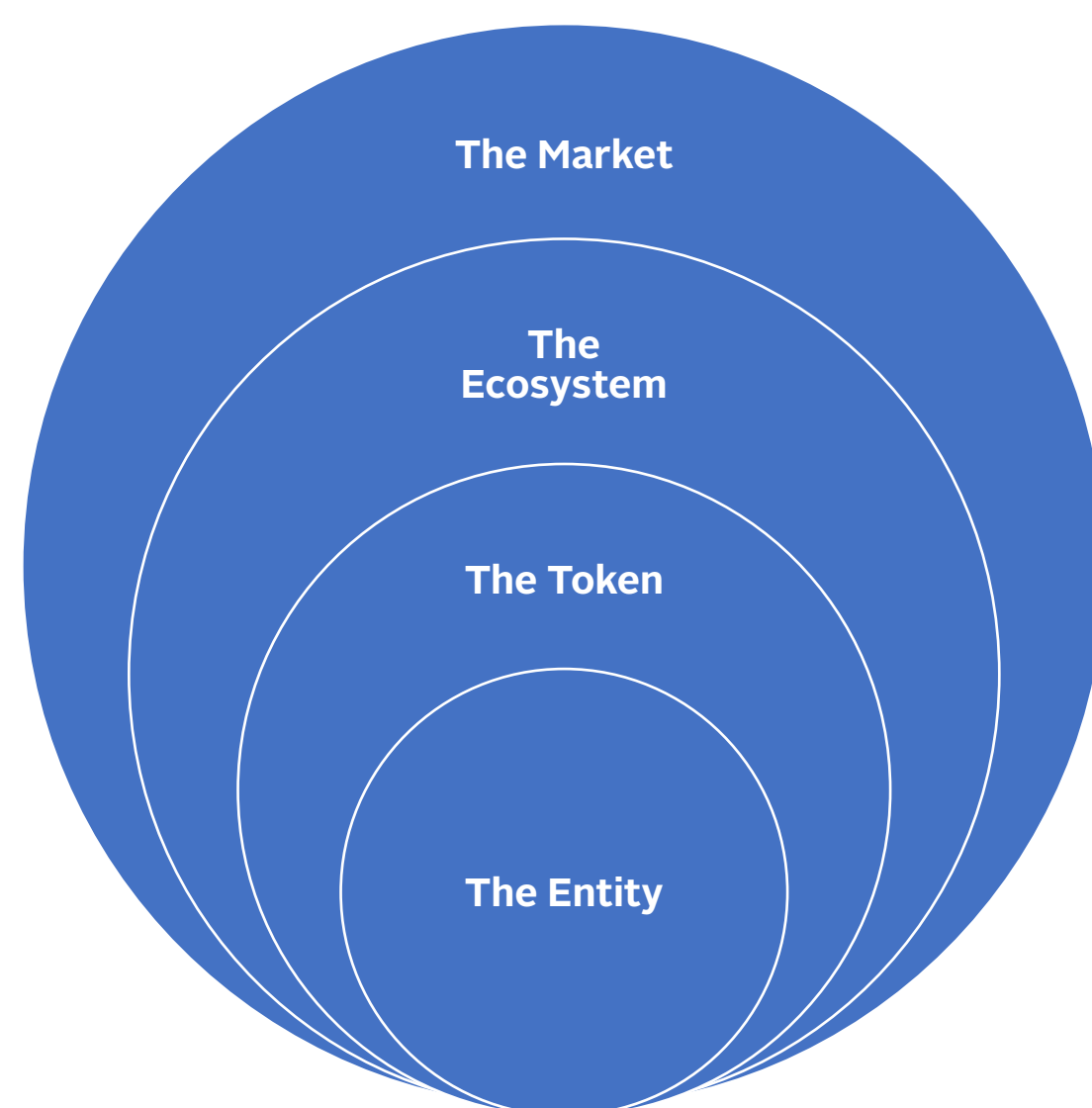
2.2.1 The total market

The market that Sovereign Coin seeks to target is multiple. It is essentially a Space-based satellite-powered blockchain system. This will target some of the main pain-points of existing systems. Using Porter's Five Forces we can say that there is currently very few companies in this sector which are planning to do a Space-based blockchain system. The Sovereign system will also look at facilitating international transfer payments through the use of the Sovereign satellites. The market for remittances is growing and as more people join in the financial system through the use of blockchain, it is expected that the market for this type of service will continue to increase.

2.2.2 The Sovereign Coin economy

The Sovereign Coin economy is made up of numerous users. The Sovereign Coin will facilitate a whole system composed of satellites, blockchain architecture, the RUON app users and blockchain developers. Given that Sovereign is a platform, it is expected that a number of dapps will also be created. We believe that having such a platform which intrinsically answers most of the pain points of the current blockchain platforms, will be a key element of the Sovereign economy.

2.2.3 The Sovereign Coin token

The token that Sovereign Coin is offering is offers all the security features necessary to end itself as a robust technology and digital asset. Given the experience and system architecture we believe that the token itself reflects a very strong technological set-up and network.

2.2.4 The entity

The project promoters have a demonstrated track record and experience in delivering various projects. There is a strong leadership and management team which is well placed to deliver business execution. Also, there is specific expertise to space and satellites to get this project through. There is also a clear strategy on delivering Sovereign Coin and there has also been significant private investment. Also, the entity is also actively seeking to be regulated in Malta which has provided the most holistic legal framework in this respect. From the analysis of use demand and a complete risk assessment, we believe that the Sovereign Coin economy offers great potential in this respect.

2.3 Speculative Demand

Demand for financial assets is governed by a different set of propositions than use demand (Frankel & Engel, 1984), and is mainly driven by expected returns from the asset. In this case, given that Sovereign Coin is not an interest or dividend-bearing asset, the expected returns from a speculative perspective would be derived entirely from expected increases in the price of Sovereign Coin tokens over time, since token-holders would be able to sell their holdings at a higher price than that initially paid out. Thus, speculative demand for tokens will largely depend on two factors, namely:

- The speculator's subjective assessment of the Sovereign Coin economy;

- The expected returns derived from other comparable assets

The first factor is practically identical to the one described earlier for use demand, and as such the framework developed therein shall also be used for this purpose. The second factor is related to the idea of optimal asset pricing in finance, whereby an investor will compare the risk-weighted returns derived from one asset against returns obtained from other assets within this class in order to determine whether to acquire the asset or not (Fama & French, 2004). In brief, a high-risk asset will require a larger return to induce investors to purchase it, while higher returns from competing assets within the same broad class will also require higher returns from the asset in question in order to remain competitive (Brennan, 1989). Therefore, the speculative demand for Sovereign Coin will incorporate both the systematic assessment of the value of the Sovereign Coin economy and the comparative asset pricing element based on market returns and risk, based on the seminal capital asset pricing model (e.g. Perold, 2004).

2.4 Market Capitalization and Token Pricing

Having determined the level of expected demand for Sovereign Coin tokens based on the "Dual Utility Principle" we can now use this information to derive the putative price per token. This price will be equivalent to the equilibrium or market-clearing level whereby the demand for tokens will equal the supply of tokens. We start by first considering the supply of tokens. In this case, "the Quantity Theory of Money" (Friedman, 2017) specifies that money supply (M), which in this case translates to market capitalization, must be equal to the total value of goods and services produced within an economy at a given point in time (PY), divided by the velocity or speed at which money changes hands (V).

$$M = \frac{PY}{v}$$

Thus, in our case, PY is equivalent to the value of all revenue that Sovereign Coin can generate within a given year, while v denotes the average number of times that Sovereign Coin tokens are expected to change hands, which in turn is related to the number of Sovereign Coin transactions. In turn, market capitalization M can also be expressed as the total quantity of tokens issued (S) multiplied by the price per token (T). Re-arranging the terms, we obtain:

$$S = \frac{M}{T}$$

For market clearing, demand must be equal to supply; therefore, we can find the token price (T) that leads to equilibrium in the market for tokens. Finally, given the above expression, we can derive the total number of tokens that should be issued (S).

Token Metrics

3.1 Estimates for Market Capitalization, Token Price and Quantity Issued

In the previous section, we sought to propose a simple, tractable framework rooted in microeconomic and finance theory in order to derive key token metrics that better reflect the utility derived from Sovereign Coin tokens and market movements. We now turn to the actual calculations for the proposed market capitalization, token price and token quantity issued for Sovereign Coin.

Key to these calculations is our estimate of the total value of the Sovereign Coin economy (PY), based on the systematic assessment described in the previous section. This in turn hinges on the proportion of total charitable giving that shall be processed via the Sovereign Coin system. Estimates on a global scale vary significantly, although for example the U.S. donates around US$410 billion to charitable causes each year (Giving USA, 2018). These donations figures must be weighted according to the risk assessment, which in our case was calculated to be equal to a medium risk. Thus, the expected value of the Sovereign Coin economy is estimated at US$300-900 million. This enables us to derive three scenarios – a conservative scenario where PY=US$800 million, a neutral scenario where PY=US$2 billion, and an optimistic scenario where PY=US$8 billion. We assume a velocity of money (v) equal to 1.5, which is comparable to other currencies and is considered to be reasonable given the nature of SOVEREIGNCOIN. Thus, we derive the following estimates for total market capitalization (M) using the Quantity Theory of Money (MV=PY):

🛰️ The speculator's subjective assessment of the Sovereign Coin economy;

🛰️ The expected returns derived from other comparable assets

The first factor is practically identical to the one described earlier for use demand, and as such the framework developed therein shall also be used for this purpose. The second factor is related to the idea of optimal asset pricing in finance, whereby an investor will compare the risk-weighted returns derived from one asset against returns obtained from other assets within this class in order to determine whether to acquire the asset or not (Fama & French, 2004). In brief, a high-risk asset will require a larger return to induce investors to purchase it, while higher returns from competing assets within the same broad class will also require higher returns from the asset in question in order to remain competitive (Brennan, 1989). Therefore, the speculative demand for Sovereign Coin will incorporate both the systematic assessment of the value of the Sovereign Coin economy and the comparative asset pricing element based on market returns and risk, based on the seminal capital asset pricing model (e.g. Perold, 2004).

	Conservative Scenario	Neutral Scenario	Optimistic Scenario
Market Capitalization	US $530 million	US $1.3 billion	US $5.3 billion

The next step is to calculate the issue price per Sovereign Coin token (in US$) together with the total quantity of tokens to be issued. In addition to using our estimates for the total value of the Sovereign Coin economy and market capitalization as key inputs, these figures also rely heavily on average market returns for electronic currencys well as returns from riskless assets, since these constitute competing investment products from a speculative perspective. An analysis of current electronic currency returns suggests that the average rate of return over the last 6 months for electronic currency of comparable utility is equal to 3.5% (Bayati, 2018). Similarly, if we consider U.S. Federal Reserve Treasury Bills as our risk-free asset, average returns from these securities over the last 6 months is equal to 2.15% (Federal Reserve, 2018). On the basis of these values, we can derive our estimates for the price per token and total token quantity under each of the three scenarios introduced earlier:

	Conservative Scenario	Neutral Scenario	Optimistic Scenario
Price per SOVEREIGNCOIN token	US $0.79	US $0.82	US $0.87
Quantity of SOVEREIGNCOIN tokens	673 million tokens	1.6 billion tokens	6.15 billion tokens

SovereignCoin has been created to handle large-scale transactions in the hundreds of millions from pension funds to hedge funds and central bank payment solutions and a currency which a national fiat currency could underline. The currency will specialize in large scale B2B transactions of the highest level, but will also provide a framework for person-to-person instant transactions.

Sovereign's infrastructure is an open protocol-Single Inter-Ledger Protocol (SLIP)-that brings new efficiency by enabling real-time settlement, ensuring transaction certainty and removing settlement risk, as well as data-rich messaging between all transacting parties-delivering a real-time payment experience to end users.

1.2 Sensitivity Analysis

In this section, we take a look at how shocks and movements to a number of key variables can influence our token metrics. The purpose of this analysis is to anticipate the likely impact of any future changes on the Sovereign Coin token's value, which in turn can assist in devising appropriate responses to exploit any new opportunities while mitigating against possible threats or risks.

We start by considering the most fundamental relationship, namely that between the value of the Sovereign Coin economy and the token price. As seen from Table 2, this relationship appears to be positive, with higher levels of value associated with higher token prices as both use and speculative demand increase.

Figure 3 below simulates this relationship over an interval of possible Sovereign Coin economy values. As seen below, there is a logarithmic correlation between value and price, in that as the value of the economy increases, price per token will at first increase at a significant rate, before slowing down as the economy grows further, which is typical of most assets. This graph thus serves to highlight two important factors, namely that (a) there are diminishing returns from investing in improvements to the Sovereign Coin ecosystem and value proposition as the economy grows; and (b) the Sovereign Coin token will rapidly lose value eventually, if the underlying ecosystem and economy are allowed to fall unfettered in the absence of investment and good governance.
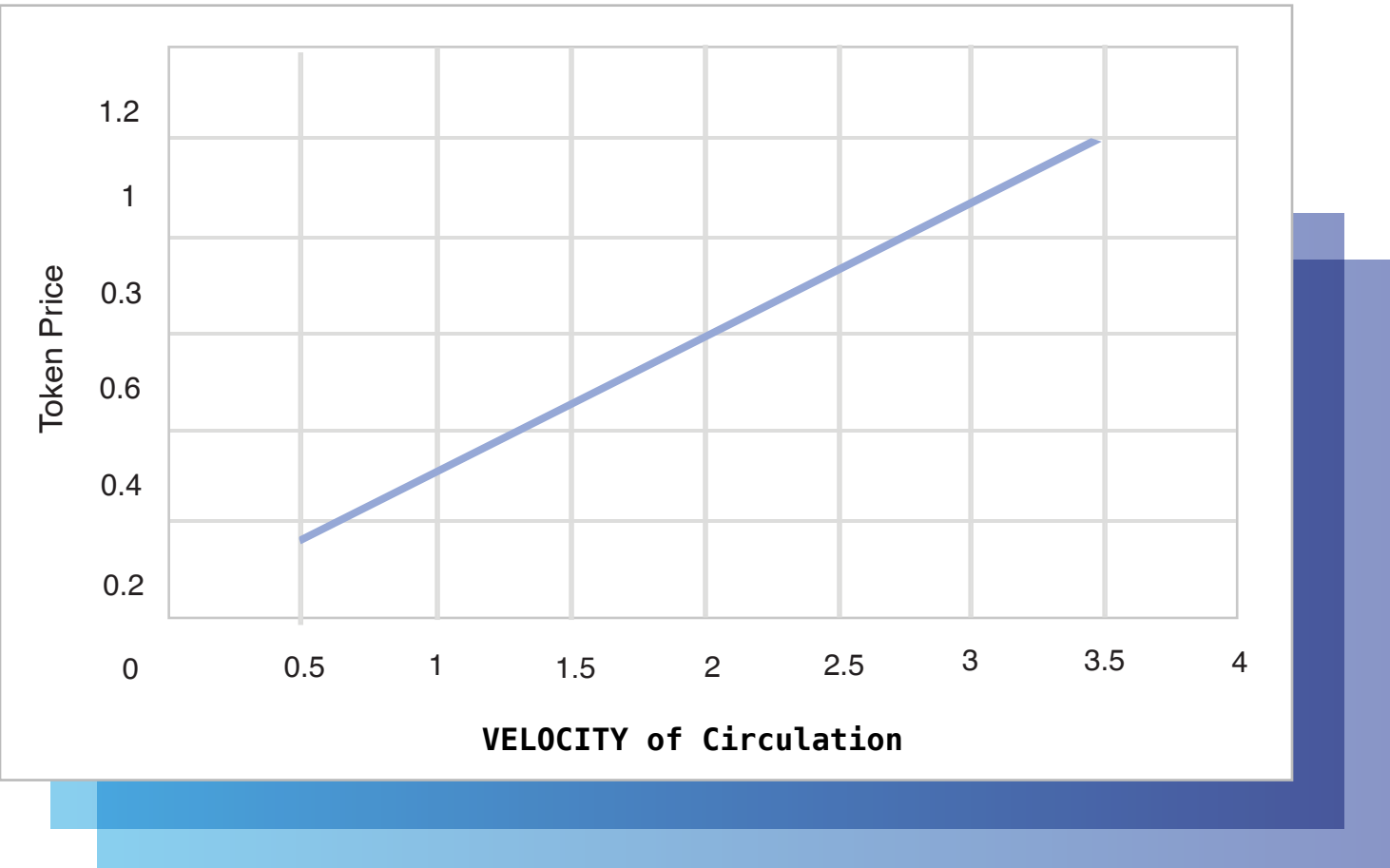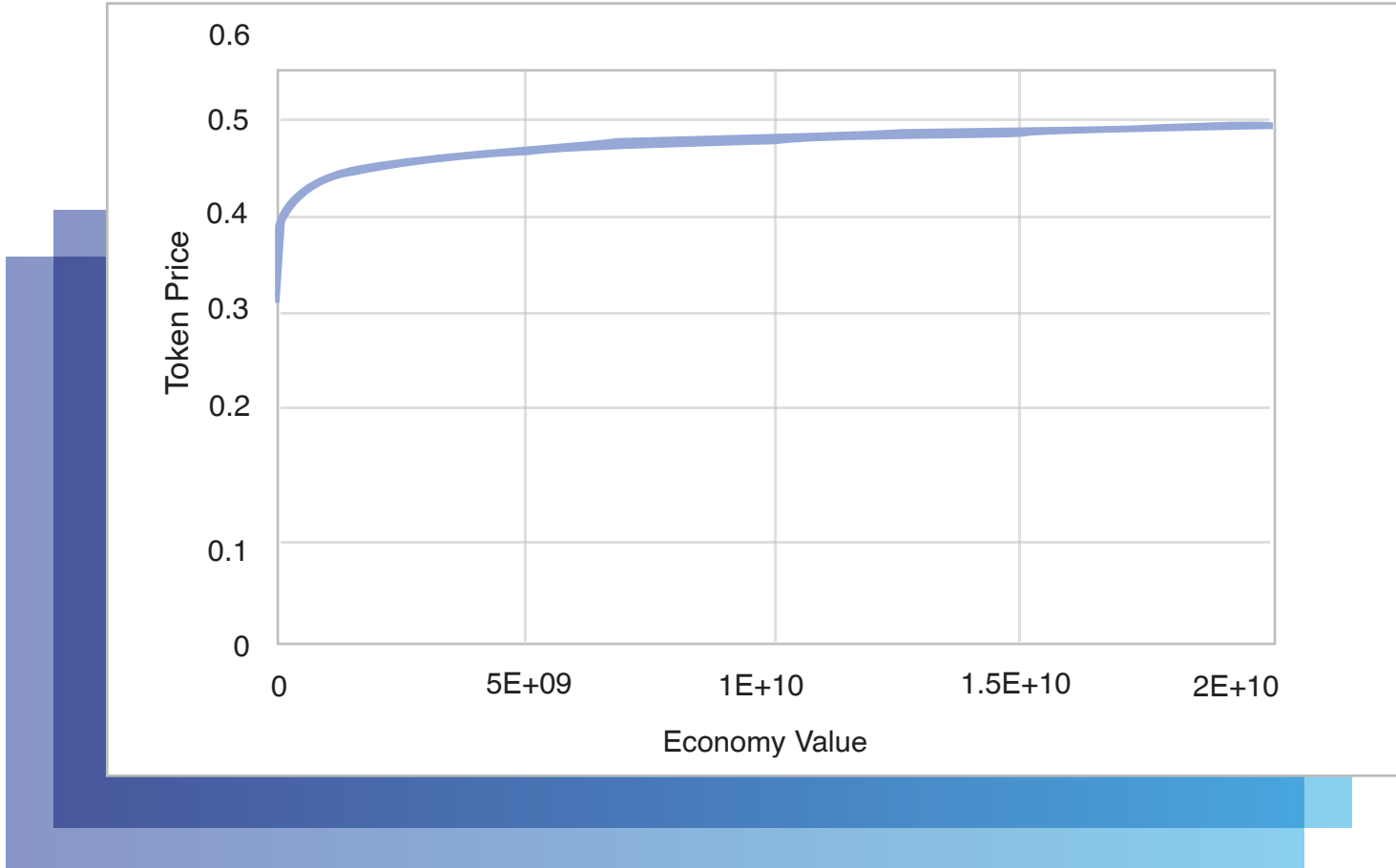
The second thing to consider is the sensitivity of token price to changes in the velocity of circulation, or the rate at which tokens change hands. This is important to analyse given that it is natural to expect that as the Sovereign Coin platform gains traction and popularity, more and more people will start using the Sovereign Coin tokens for a variety of transactions, thus increasing the velocity of circulation, which in turn may impact on the price per token. Figure 4 simulates the relationship between velocity and token price. As seen below, we find a linear positive correlation between the two, implying that as Sovereign Coin-based transactions increase, demand for Sovereign Coin will also increase, thus fuelling the increase in token price. This is, however, a double-edged sword, since just as increased velocity will lead to higher token prices, lower transaction volumes in Sovereign Coinwill lead to a decrease in the price per token.

9. SovereignSky Space Network

This analysis has sought to develop a tractable, robust framework for analysing various token metrics, rooted in mainstream economic thought. In turn, based on this modelling framework, we provided estimates for market capitalization, token price and quantity of tokens under different scenarios which reflect market fundamentals as well as the intrinsic use value of Sovereign Coin tokens. We also provided guidance on the relationship between token price and two key variables, namely the value of the Sovereign Coin economy and velocity of token circulation.

10. Ecosystem and Business Model

In Sovereign Sky, similar to EOS, token holders become owners of a certain percentage of the network's computational power, bandwidth and storage. As such, they can rent out the resources owned by them to Dapps developers and providers, and thus earn money in a completely safe and passive way.

Dapps

The SovereignSky ecosystem will allow other smart contracts, such as the tokens of the partner blockchains RUON, Sovereign and SovereignAid, to be incorporated as Dapps onto the Sovereign Sky platform.

SovereignSky's website will permit users to vote on the inclusion of Dapps, and any community member, individuals and companies alike, may upload their dapps to the site.

The VC fund created by selling Sovereign tokens will help finance these Dapps built on the Sovereign blockchain.

The main dapps RUON, Sovereign and SovereignAid are described below.

RUON AI

RUON is a holistic blockchain and social media app and ecosystem that provides social interaction as well as shopping, marketing and investment features, including electronic currency wallets.

RUON also provides thedigital wallet for Sovereign funds (see below), and the verification methods by which the legitimacy of any user is checked.

Furthermore, RUON features a smart card for easier use of the electronic currency wallets available to SovereignSky users. Smart cards will also be distributed to villages and communities that are recipients of charity funds from Sovereign Sky, and will enable the communities to buy food and other necessities out of these funds.

The RUON App in SovereignSky will feature an emergency button that permits individuals and communities in poor regions to request donations in case of adverse events - for example fires, floods or droughts. This is not restricted to developing countries, but may be used by individuals and groups in need in developed countries as well.

SovereignAid

SovereignCoin interfaces with SovereignAid, a means of payment for charity purposes. SovereignAid will be used to acquire, in partnership with mobile manufacturers, millions and eventually hundreds of millions of smartphones. Each of these will be loaded with RUON's digital wallet and smart card, to be given to missionaries, orphanages and the unbanked in developing countries.

The founders are already in discussions with the head sisters of Missionaries of Charity, established by Mother Teresa, to help distribute the smart phones worldwide.

Team

JC Oliver
CEO

JC Oliver is an award winning digital creative, strategist, evangelist, futurist, investor & advisor with over 25 years global media experience.

He was Global Innovation Head of Microsoft & AOL before becoming new CEO of RUON AI & SovereignSky. He recently launched his own innovation agency 31Flavas which he runs alongside his roles as Global Chief Creative Officer of Unlockd & EdisonX.

His passion is across both Digital Marketing/Transformation, Business Strategy & Innovation. His ideal drop off is the intersection of creativity & business fused with tech & science which he defines as the next big growth marketing opportunity. JC has spent his career in variety of roles crafting ideas & munging them together with emerging tech to amplify & translate brand comms into immersive audience centric experiences.In 2016 he left his role as Global Chief Creative Officer at Verizon/AOL/Microsoft/Yahoo! Network (now Oath) after spending the previous 9 years as Microsoft's Global Head of Innovation. He delivers myriad thought leading presentations at industry conferences, digital schools and to clients & agencies on how the next creative revolution is upon us and ready to transform everything.

Stan Larimer
CO-FOUNDER and CTO

This pioneering team includes Stan Larimer, The 'Godfather of Bitshares'. Stan Larimer is a prolific Blogger, Keynote Speaker and expert Consultant on real-time industrial grade digital currencies. He is CEO of Cryptonomex, which currently processes over half of all public blockchain transactions in the world. These include BitShares, Steemit, Peerplays, Muse, Golos, and next year EOS. BitShares and Steemit each exceed Bitcoin and Ethereum combined records for daily transactions and together they surpass the rest of the industry. Stan has used his MSEE degree to teach rocket science at the US Air Force Academy and to develop unmanned air, ground, sea and space 'drones' for 40 years with aerospace giants such as Lockheed Martin, Northrup Grumman, Boeing, General Dynamics, and SAIC. Stan has led engineering deployments from Cape Canaveral in 1998 to Western test ranges in 2001 and Fallujah, Iraq in 2008 and parking lots of Duke University and the Durham Bulls in 2011. "He Co-founded Invictus Innovations in 2013, Cryptonomex in 2015, Steemit in 2016, and Heronomex, and Hypernomex in 2017, Quintric, Sovereign Sky, Ruon, Biquitous, Terradacs, BEOS Limited Cooperative Association, and Mission Space in 2018." Stan has over 40 years experience in software, hardware, and systems engineering, program management, business development and even teaching rocket science at the US Air Force Academy. Contributing to 17 different R&D programs for air, ground, sea and space systems, Stan is now building a new industry to develop unmanned companies that produce smart currencies and other decentralized financial services.

Timothy E. Burke
CO-FOUNDER, Creative Director

Tim is our Founding Father! He is the visionary Inventor of RUON & SovereignSky, the concept of SovereignAid, Founder of Hollywood's now famous MovieFund, Writer and Co-Director on Planet X and most recently executive producer on Lionsgate's "Killers Anonymous" which stars 2018 Oscar winner Gary Oldman and Jessica Alba. He and Marvel's Jeff Hadderstad - (Doctor Strange, Iron Man 3, Captain Marvel, Antman and the Wasp) Ancient Alien epic; "Planet X" (which has been described in the Huffington Post as like "Star Wars on Steroids"). The very concept of SovereignSky and beaming cryptocurrency from space, in fact came from - and will make up - part of the currency in the Planet X Movie. His vision is clear. Like no other social media, banking and shopping platform on the planet, RUON is set to completely revolutionize life online. Tim sums up RUON in five words. Post. Stream. Earn. Spend. Give.

Brandon West
RUON Technology Director

Brandon is a Graduate of the University of Florida with a degree in Finance and Entrepreneurship. Brandon began his career in finance at Walt Disney World where he taught himself how to program, leading to the development of many applications automating various business area tasks. Brandon went on to serve in an IT role at Royal Caribbean and became an integral part of project development and deployment of the new 'Smart Ship' initiative. These projects included working internationally to build the largest and smartest ships in the world that currently sail the seas today. By building finance and technology skill sets, Brandon has won multiple hackathons/startup events and naturally transitioned into cryptocurrency. Brandon is now pursuing blockchain full-time as a Smart Contracts Developer, Consultant, and Miner.

Sean Worthington
Advisor

Sean is President of CloudCoin Consortium, Author of 'Beyond Bitcoin: The Future of Digital Currency' and Inventor of Digital Currency based on RAIDA (Redundant Array of Independent Detection Agents), provisional patent. Sean is also a Candidate PhD, Computer Information Systems and Computer Science Instructor tenured at Butte College, Oroville, California. He is a candidate for a PHD in Computer Information Systems. Sean also has a patent pending on a counterfeit detection system and he is the Creator of CloudCoin, which is the world's first cloud based currency and a Tenured Computer Science Instructor at Butte College in Northern California.

Angus McGlynn
CO-FOUNDER

As the Co-Founder and CEO of Mission Space, Angus has led the rollout of this project since 2016. For more than 28 years, Angus has worked with technology companies worldwide developing their business and providing project management, design, marketing and media relations' services. His academic background is in product design and innovation management. He currently acts as an advisor to Greenwall Environmental Innovation, which is part funded by UK's Aerospace Cornwall to further their R&D into the world's first bespoke portable asbestos in materials analyser and it set to be located at the Space Aerohub in Spring 2019.

Thomas Carter
DIGITAL SECURITIES ADVISOR

Thomas is at the forefront of the smart securities revolution. He is a 30-year fintech innovator and CEO of DealBox and is pioneering the trillion-dollar digital transformation of capital markets. He has successfuly raised funding for diverse range of businesses including green and clean technologies, healthcare, sports, media, entertainment, finance, technology and more. Thomas, together with Dealbox, has strategized and is leading the capital funding for Mission Space.

Michael Taggart
STRATEGIC DEV & BLOCKCHAIN ADVISOR

Michael is director, co-founder and advisor to many successful blockchain based businesses such as Quintric, Biquitous and Eristica and is also President of Cryptonomex, the company that authored the Graphene blockchain, originally developed as the foundation of Bitshares. Michael, is a writer and member of the Forbes Technology Council.

Michael is also co-founder of Quint, a revolutionary new cryptocurrency that can be used as specie legal tender and is backed by gold and silver.

Michael Taggart gained an interest in Bitcoin during 2012, later developing a multi-exchange trading software in 2013. After meeting Daniel and Stan Larimer, Michael became fascinated by blockchain technology and it's disruptive nature. Michael is President of Cryptonomex, developer of Graphene technology and author of DPOS.

As an advocate of DPOS technology, Michael is an international speaker that travels the world educating businesses, legislators, and developers on the features and benefits of Graphene technology. Michael is also cofounder of Quintric, the world's first legal tender cryptocurrency that brings back the concept of sound monetary policy. Michael also currently advises several blockchain based projects such as Mission Space, Biquitous, and Sovereign Sky.

https://www.linkedin.com/in/michaelxmarketing

Gerard Clutterbuck
SENIOR RESEARCHER

Gerard has been involved with Mission Space since its inception. With his background in Industial Design, Gerard will oversea our research division, keeping abreast of the latest technology advances with the aim of ensuring our space telescopes, future space exploration product development and R&D remain both current and leading edge technologies.

Colin Doughan
FOUNDER & CEO

Colin's sixteen-year career at Fortune 100 Aerospace firms has focused on implementing the Cost and Schedule management for two separate Billion plus Dollar US Air Force space development programs with 200-500 engineers each. Colin is experienced in executing the complexities of development programs with multi-thousand line schedules and multiple vendors. Colin received his MBA from the University of Nebraska and is creator of the Space Business Blog where he discusses the business opportunities of the final frontier.

David Forman
CEO of Cascade Systems, Founder of SpaceBridge Logistics

David is a visionary entrepreneur who brings groups of people together to accomplish incredible things, and believes that blockchains will fundamentally change the way the world does business.

David is the founder and CEO of Cascade Systems (CascadeSystems.io), an algorithmic trading company that supplies liquidity to emerging exchanges and projects. Cascade's core technology is a flexible trading system and portfolio management framework, enabling a broad range of algorithmic trading strategies, liquidity provision, and payment processing services. Cascade is currently a premier market maker in the decentralized exchange space.

David is also a co-founder of SpaceBridge Logistics (SpaceBridge.io), which is building a blockchain-enabled marketplace for space services. SpaceBridge is working directly with a variety of launch and satellite companies, with a focus on creating protocols for moving, repairing, and deorbiting satellites. David is passionate about leveraging blockchain technology to increase connectivity across the aerospace industry and help humanity become a space faring civilization.

Previously, David co-founded the game studio Serenity Forge, built his own algorithmic trading operation and obtained degrees in Physics and Music Composition.

Jonathan Bahai

Jonathan Baha'i is an entrepreneur with over 25+ years of experience in the high performance server hosting and telecommunications industry, and is the founder of a number of tech related companies which today focus primarily on blockchain technology.

From as early as 1997, he has worked independently to bring innovation and vision to all his ventures. This has included the establishment a regional ISP, and founding Hiccup Data Solutions, a SMB remote backup data protection service provider. In 2003 he worked to bring wireless mesh network infrastructure to western Africa. In 2006, he founded Serverbalance Data Solutions, an early pioneer and active cont[...]eloper of Xen virtualization.

In 2012, he acquired a Nuclear Bunker data center in Nova Scotia, Canada, and founded Data Security Node Inc. For nearly five years he was dedicated to developing the nuclear hardened data center and building blockchain-based solutions. Primary networks he worked with included Bitshares, and Steem, while also mining various altcoins. In early 2016 he conceived and founded the Peerplays blockchain and has successfully lead its development and launch. He successfully raised a significant amount of Bitcoin funding for its ongoing development and has become the foremost authority in the space of provable fair blockchain gaming often sought after for speaking engagements and quotes on matters related to blockchain gaming.

In July 2017 he founded eXeBlock Technology Inc. through Numus Financial, a pure play blockchain company which went public in November of 2017 trading on the Canadian Stock Exchange (XBLK:CSE). As Founder, he successfully built and lead a team of 23 developers both locally and overseas to develop the first ever 5050 draw dapp, as well as a Bitcoin sidechain that could run on the high performance Peerplays Blockchain.

He continues to support the Peerplays in its development by leading new features that provide value to gamers, developers, and regulators.

Paul Martello
Blockchain enthusiast since early 2011

Paul Martello has been a blockchain enthusiast since early 2011 and first hearing about bitcoin. Later, when the Larimers, father and son, began to theorize on the necessity of a decentralized exchange, and subsequently on the many advantages of DPOS over proof-of-work technology, Paul began doing everything in his power to assist in the implementation of their visions. Now another technological innovation in DPOS, called BEOS and likely to rock the business world, has been theorized by Stan Larimer. Once again Paul takes a leading role to bring this from idea to manifestation. Paul's motto is "There at the beginning of the stories you love".

Paul Martello was born in Toronto, Canada. Upon finishing high school he moved to the Himalayas of northern India while still a teenager. There he was involved in expedition outfitting and ran guest houses and restaurants for visiting adventure tourists. After returning to the West, Paul worked in the mining industry in remote areas of the Yukon Territory of Canada. Subsequently his trajectory has included such stints as a performing musician, a printing and design company entrepreneur, acquiring a degree in Monetary Economics and Business Management, and several years as an auditor and special investigator for the Federal Government.

Paul first became interested in bitcoin and the possibilities of crypto currencies and blockchain technology in early 2011. He attended the London Bitcoin Conference in 2012 in London, England and subsequently traveled to university Economics departments distributing physical Casascius bitcoins to post graduated Ph.D. students and professors. Paul early recognized the limiting weaknesses of proof of stake mining for cryptos and the dangers inherent in centralized exchanges. He was therefore a very early and enthusiastic supporter of the decentralized exchange and distributed proof of stake movement birthed by the Larimers, father Stan and son Dan. Currently Paul lives in Greece. He is the CEO of Terradacs LTD, a software development company which has licensed its proprietary technology to the BEOS Limited Cooperative Association of Utah (BLCA). That enabled the BLCA to lauunch the "BEOS" blockchain, an enhanced clone of EOS that can be thought of as "middle chain" between BitShares and EOS and as "EOS for business". Paul also serves as a director of the BLCA.

Dino Lorenzi
RUON, Space Agency Partner

Dino Lorenzi is President at SpaceQuest, Ltd. the leading developer of advanced satellite technology for government, university and commercial use since 1994, specializing in the design, development, testing and manufacture of spacecraft as well as space and ground components for operation with low-Earth orbiting satellites.

Through innovative designs and the latest electronic technology, SpaceQuest is building satellites and satellite components faster and more cost effectively than ever before.

Through innovative designs and the latest electronic technology, SpaceQuest is building satellites and satellite components faster and more cost effectively than ever before.

SpaceQuest specializes in Microsatellite RF and Power Components, Comms Enables Microsatellites, Earth Station Equipment, and S-AIS Data and Payloads.

Larry Castro
RUON App Development, blockchain phone, operating systems & encryption

Larry is the CEO of Stealth Grid™.

Following Larry's vision, Stealth Grid™ has embarked on developing, testing and eventually releasing the very first, entirely encrypted mobile phone. Larry is a recognized leader in cyber security, with more than 30 years' experience. Larry is a polished Business Strategist and Visionary who has been successful in identifying opportunities, developing corporate strategy, licensing, digital platforms, mergers & acquisitions, startups, and capitalization strategy. He recently served as an Executive for a cross platform technology that was brought to the public market through his strategies and execution. He serves as an active Advisor to several technology and sports entertainment companies and has served as the Director and Founding CEO at multiple companies including his latest venture Stealth Grid™.

Stealth Grid™ is establishing itself as a leading provider of cyber security solutions. It's unique combination of cutting edge technology and vast expertise in cyber security are essential in dealing with the complexities of today's cyber attacks. Larry, Stealth Grid's CEO and Technical Founder, brings together his team's experience in enterprise security, fraud prevention and IoT technology to help develop Stealth Grid's innovative solutions. STEALTHGRID INC. (including STEALTHCLOUDTM, STEALTHCRYPTOTM, AND STEALTH IoTTM) provides leading edge solutions to guard against cyber theft ($ & IP), cybercrime, cyber fraud, cyber terrorism and IoT data breeches. With groundbreaking technology and unparalleled manageability, Stealth Grid™ is enabling consumers and businesses to rapidly protect their data in the cloud, on their devices, as well as email, phone, video chat and the IoT communications.

Mark Jeffrey
RUON/SovereignAid Advisor

Mark Jeffrey is an accomplished CTO/CPO/CEO with 25 years of experience and three exits. He is an award-winning serial entrepreneur of innovative technology companies backed by Tier One investors. These include The Palace (sold to Communities.com in 1998), Zero Degrees (sold to InterActive Corp/IAC in 2004), TargetClose, Mahalo (now Inside.com), ThisWeekIn, and Guardian Circle. He has authored eight books, including the Max Quickseries (Harper Collins). Mark consults as CTO / CPO for hire to a portfolio of companies in e-commerce, mobile, digital media, social, crypto-currency and digital publishing. Most recently, Mark built a massively scalable e-commerce multi-variant testing platform used by AARP, Tile, Zillow, Nestle, Time-Life and others. This included a radical new kind of A/B testable cart in a fully PCI-complenvironment.

He also created Guardian Circle, a personal safety network app variously characterized as 'mobile messaging for emergencies' or 'peer-to-peer protection'. By providing a real time intelligence grid of where trusted help is, Guardian Circle provides flash coordination of resources to render assistance.

Mark was the founding CTO of Mahalo.com (now Inside.com), a human-powered search and learning site, backed by Sequoia Capital (Google, Youtube, Yahoo), CBS, Newscorp, and Elon Musk (Paypal, Tesla, SpaceX). He also co-founded and served as founding CEO of the web television network ThisWeekIn with Jason Calacanis and Kevin Pollak. Mark was Co-Founder and VP Product & Technology for the early business social networking company, ZeroDegrees. Founded in 2002, Mark sold the company to Barry Diller's IAC/InteractiveCorp in 2004, with more than one millionregistered users. Mark also consulted for several years with Travis Kalanick (now CEO of Uber) on his first company, Red Swoosh (sold to Akamai 2007).

Mark's first company, The Palace, was backed by Time Warner, Intel and Softbank, and sold to Communities.com in 1998. The Palace was a popular avatar virtual world environment that grew to 10 million users at its peak. The Palace was selected 'The Best of 1996' by Entertainment Weekly, and received numerous awards and coverage including: a Webby Award nomination; "Cool Innovation of the Year" nomination; and was selected as the Chicago SUN-Times' Best Website in 1998.Mark has been named one of '50 to Watch' by Variety magazine, a 'Hero of Multimedia' by Entertainment Weekly and presented at the very first Harvard Conference on The Internet and Society in 1996.

Mark is the author of six books of fiction, published both traditionally and as an audiobook podcast. His first novel, MAX QUICK: THE POCKET AND THE PENDANT is published by HarperCollins. Mark was one of the first three people ever to podcast a novel: MAX QUICK originally received over 2.5 million downloads in 2005. Mark is also the author of BITCOIN EXPLAINED SIMPLY (2013) and THE CASE FOR BITCOIN (2016).

Mark continues to consult and to increase his portfolio of technology ventures and his fiction publications.

Tim Bichara
RUON AI Charity Partners

Tim Bichara, co-founder of Giftcoin Tim is an entrepreneur and CPO. He was the co-founder of fintech start up Q App (Acquired by Yoyo wallet in 2016), as well as product consultancy Nimble Mobile. His awards include Times 2015 top 10 disrupters to watch, Startups 100 two years running and two interactive BAFTAs.

BEOS White Paper Supplement

DISCLAIMER: The following represents current thinking of the BEOS team and is subject to change without notice. Nothing should be interpreted as a statement of fact or promise to do anything. It is released here for community discussion purposes only.

Abstract: BEOS is a straight clone of EOS.IO software and as such shares a common white paper with a few key differences. These differences primarily relate to the number of tokens, how they are initially distributed, support for gateway interfaces to BitShares making tokens portable across the two chains, and issues of governance. Future planned differences will make block signing nodes aware of their jurisdictions and smart contracts able to specify which jurisdictions may execute them. Additional planned changes will optimize the software for operation on satellites in international space and separate providers of hardware from operators of node software into separately elected roles. Most importantly, BEOS is a middle chain that we can modify freely to interface BitShares with the EOS main chain and the greater EOS ecosystem.
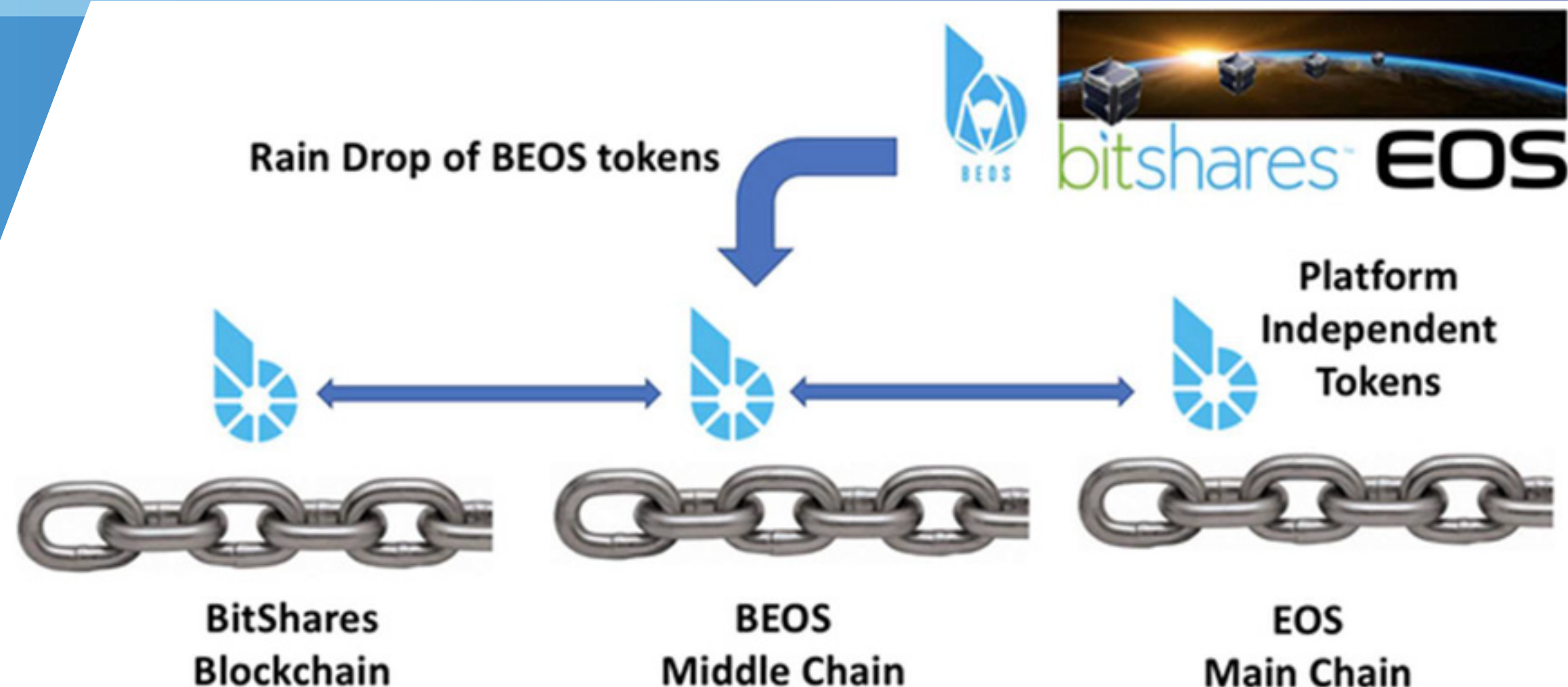
EOS.IO introduces a new blockchain architecture designed to enable vertical and horizontal scaling of decentralized applications. This is achieved by creating an operating system-like construct upon which applications can be built. The software provides accounts, authentication, databases, asynchronous communication, and the scheduling of applications across many of CPU cores or clusters. The resulting technology is a blockchain architecture that may ultimately scale to millions of transactions per second, eliminates user fees, and allows for quick and easy deployment and maintenance of decentralized applications, in the context of a governed blockchain.

PLEASE NOTE: CRYPTOGRAPHIC TOKENS REFERRED TO IN THIS WHITE PAPER REFER TO CRYPTOGRAPHIC TOKENS ON A NEW BEOS BLOCKCHAIN THAT ADOPTS THE EOS.IO SOFTWARE. THEY DO NOT REFER TO THE ERC-20 COMPATIBLE TOKENS BEING DISTRIBUTED ON THE ETHEREUM BLOCKCHAIN IN CONNECTION WITH THE EOS TOKEN DISTRIBUTION.

BEOS is a unique opportunity for BitShares holders to partake in and benefit from the advanced technology that EOS provides, particularly with regard to smart contracts. The primary ways BEOS will differ from the EOS main chain will be token distribution, governance, and an entirely new approach to censorship resistance.

BEOS tokens will only be available to a Targeted Demographic consisting of BitShares and BROWNIE.PTS holders that stake their tokens to earn BEOS during the "rainfall" period and a BEOS Endowment Fund which serves in place of the BitShares Reserve fund to support growth and defense of the BEOS ecosystem. In this way, BEOS can be seen as a way to bring the benefits of a smart contract platform to BitShares without needing to buy EOS tokens or give up their BTS.

BitShares EOS tokens will be known as BEOS and work almost exactly like EOS tokens. They will be allocated to members of the Targeted Demographic that stake their tokens according to the process outlined here. 100% of these tokens will be distributed to members of the Targeted Demographic who wish to claim them over a previously prophesied period of Seven Weeks, Forty Days and Forty Fortnights (i.e. 89 days for BEOS and 80 weeks for RAM).

BEOS will have an unapologetic blend of public/private, compliant/iconoclast, centralized/decentralized, and open/closed features. We have not let ideological purity get in the way of seizing new territory others have neglected in the name of traditional blockchain dogma. BEOS will break from blockchain tradition, embrace new thinking about censorship resistance, and pursue a radically new approach to achieve mainstream adoption
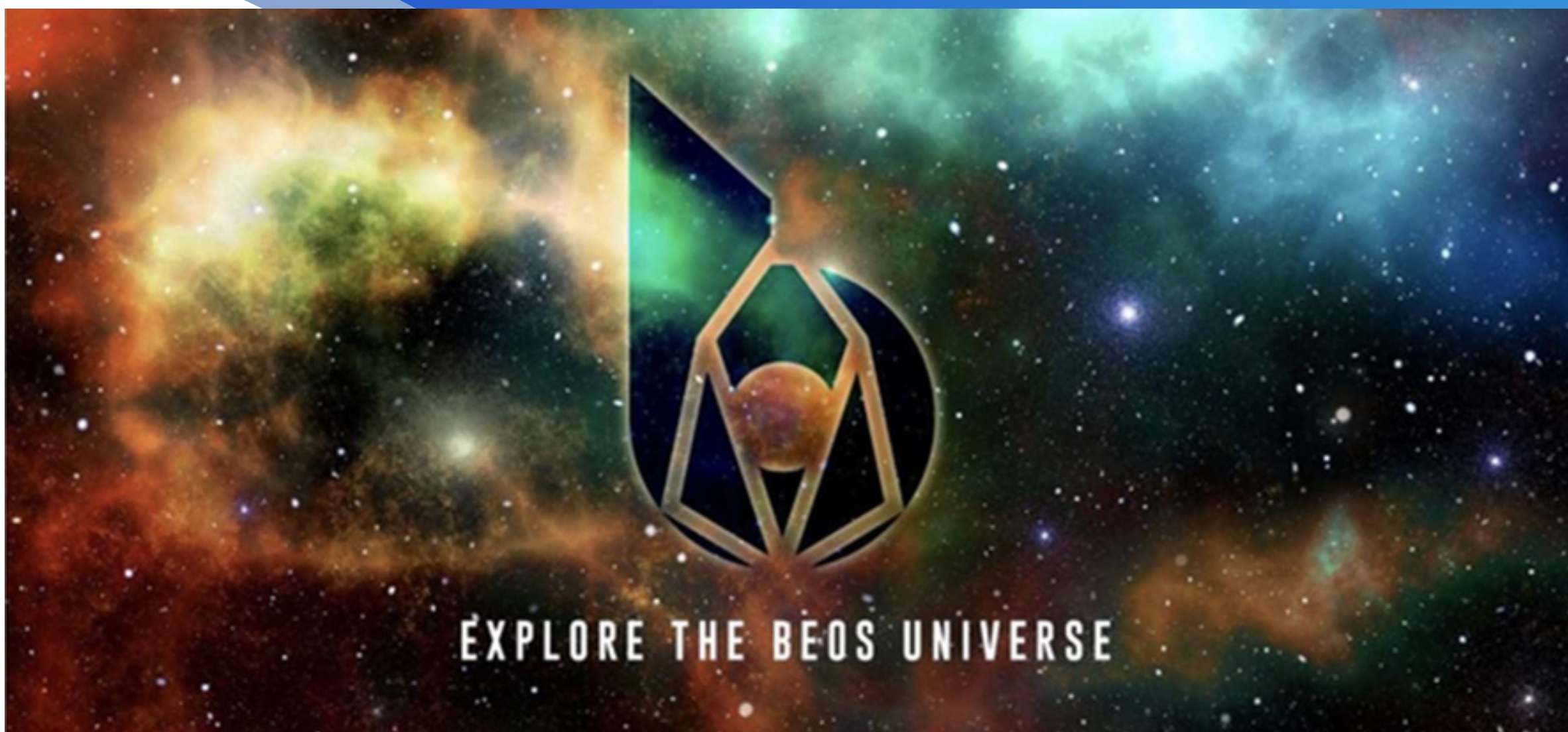
15. BEOS Development Team

BEOS is being developed by Dan Notestein of blocktrades.us fame under contract to Terradacs, Limited, a privately-funded development company based in Malta. Dan has been a contractor from the beginning of BitShares, working for Invictus Innovations, Cryptonomex, and a multitude of other graphene projects. Terradacs is directed by CEO Paul Martello. Funding to put BEOS into space is being provided by Sovereign Sky, a joint venture between Terradacs and Ruon led by Tim Burke. Satellite technology is being provided by SpaceQuest.

16. Evolution: From Bitcoin to BEOS

Blockchain and distributed ledger technology is truly revolutionary and has the potential to change our economic system, the way humans interact with each other, and the Internet itself. Indeed, we are witnessing something massive beginning to take its rightful place in the world and in our lives.

Bitcoin was the revolution that changed everything. It is excellent for highly secure and highly censorship resistant transfer of value. It was the first technology that enabled two individuals to exchange funds without the need for a trusted third-party. While revolutionary and the best at what it does, its functionality is limited. On-chain transactions are slow, and sophisticated smart contracts simply are not possible on the Bitcoin network.

BitShares was the beginning of the evolution. It showed that complex unmanned companies could be hosted on the blockchain with highly-optimized embedded smart contracts used to implement smart coins and other services.

Ethereum followed a year later, demonstrating how complex decentralized applications could be deployed and run on a blockchain. It demonstrated that a blockchain could do far more than simply process transactions. Developers flocked to develop on the Ethereum network and thousands of projects launched tokens of their own. Like many things, Ethereum became the victim of its own success. The world wants to use a platform for decentralized applications, but Ethereum could not handle the load. One successful project on Ethereum can and has brought the network to its knees. The blockchain has become so bloated that a normal user would have a difficult time running a full node.

Graphene (the tech behind BitShares 2.0 and a year later Steemit) was the next major evolution of blockchain technology. They were the first demonstrations of at least two extremely important leaps that made mainstream adoption viable. First, they showed the world that using a blockchain could make a user feel like they are using intuitive software and not something complicated only for the technically savvy. Second, these projects demonstrated that decentralized applications could scale far beyond what anybody thought was possible. The importance of graphene technology cannot be overstated in the world of blockchain. Today, BitShares and Steemit remain vibrant communities that taken together, comprise a commanding majority of all transactions across all blockchains.

EOS is the most recent important evolution in blockchain. The creator of graphene technology (BitShares and Steem), built upon the underlying technologies in BitShares and Steem to create a platform where anybody could develop and deploy scalable decentralized applications. EOS is still in its infancy but is already handling more transactions than any other blockchain. EOS is the first real blockchain contender that is capable of supporting user-defined decentralized applications that can scale.

Operations on the most active blockchains (7 day average)

KIN: 0.7 %
ETH: 1.1 %
BTC: 1.3 %
STEEM: 1.8 %
BTS: 4.2 %
WAX: 10.7 %
EOS: 79.5 %
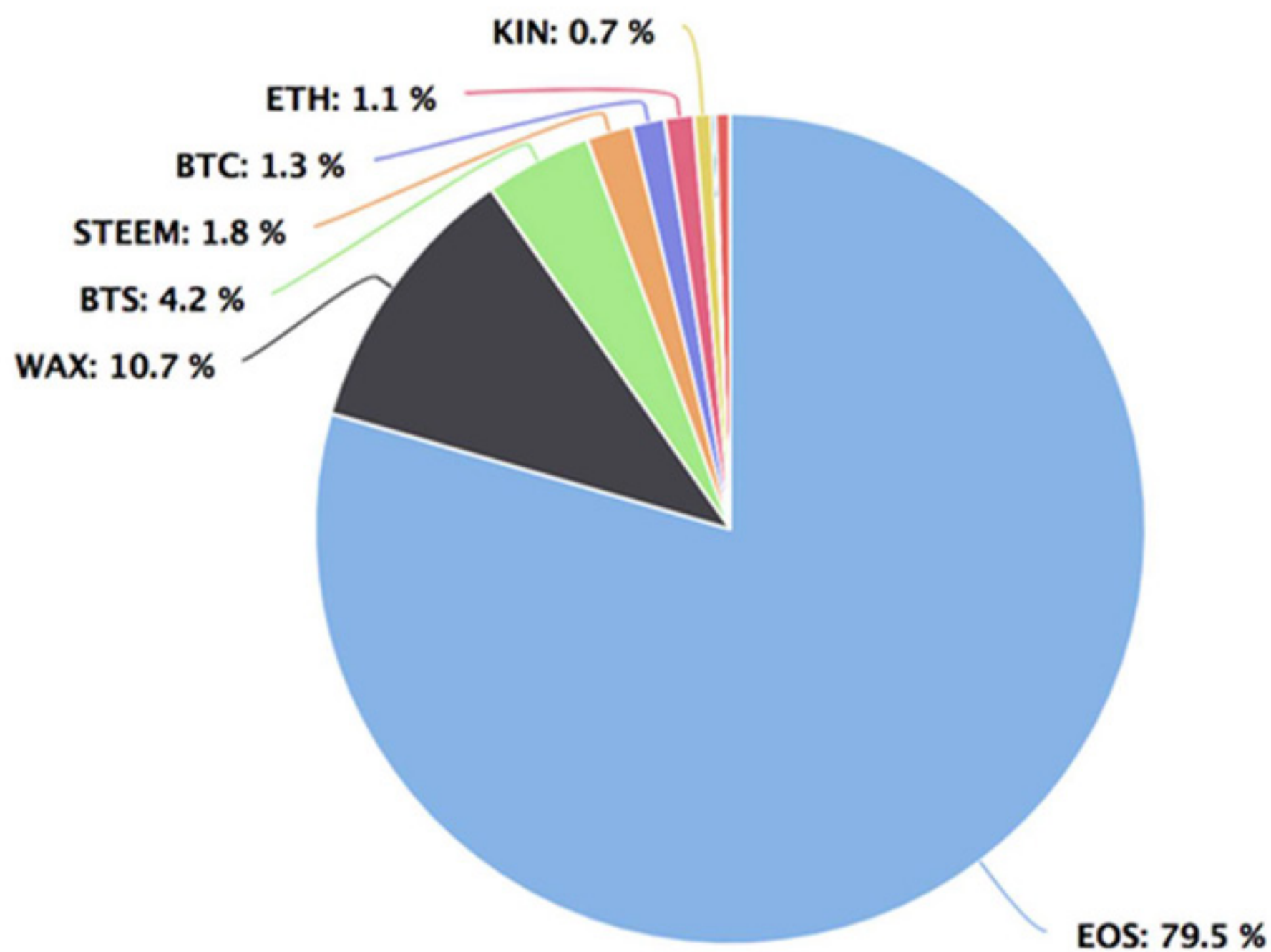
Unfortunately, cryptocurrency enthusiasts that supported the first implementation of graphene technology (which led to EOS), BitShares, have been provided no way to participate in the new EOS ecosystem apart from buying tokens. **BEOS will bring the BitShares and EOS worlds together to ensure that they benefit one another. Perhaps of equal importance, BEOS seeks to evolve the entire concept of censorship resistance so that companies can operate on the blockchain with total regulatory certainty**.

We consider all graphene technology to be part of the same family and BEOS will provide the link between EOS and BitShares. It will connect these distinct ecosystems so that the products and services can flow freely between them. BEOS can be viewed as an optional free upgrade to both BitShares and EOS. Those who do not want to benefit from these improvements are free to ignore the upgrade and both universes will remain unchanged to them.

17. EOS is the Baseline

BEOS will utilize the EOS software as developed by Block.one as its default with some key differences that are outlined in this document. An important design consideration is to keep BEOS as compatible as possible with EOS so that it can enjoy the never-ending flow of new technology from the EOS developers as soon as it is released as open source. Meanwhile, BitShares will continue to offer its unique advantages to the EOS ecosystem, unconstrained by some of the philosophical design decisions made by that community. This means that BitShares and EOS holders can enjoy the best of both worlds and continue to evolve together. In this way, there is no real advantage to building an alternative to BitShares on top of EOS, though no doubt some will still seek to do so.

When accessing BEOS via the forthcoming BEOS API, BitShares and EOS chains will ultimately appear as a single "braided" blockchain with a nearly seamless fusion of all features. This may become more seamless over time to the extent that BitShares holders vote to extend their software to support side chain functionality, but it is not necessary for BEOS to function.

18. Block Production: The Evolution of Censorship Resistance

Bitcoin, Ethereum, BitShares, Steem, EOS, and most blockchains are designed to be inter-jurisdictional, spread out over many jurisdictions, under the theory that if some government shuts down nodes in one jurisdiction, the network will simply heal itself with nodes in the remaining jurisdictions. This is much like the Internet itself which was designed to survive nuclear war by routing around smoking craters. **However, this jurisdictional unpredictability presents a major problem for companies that require regulatory certainty.**

While inter-jurisdictional blockchains make it virtually impossible to stop a particular transaction, they provide no protection to the person or group conducting the transaction. When considered from this perspective, blockchain transactions can be easily censored after the fact. People can be arrested, property can be seized, and organizations can be fined or shut down. BEOS seeks to develop a new kind of censorship resistance by designing the blockchain to be "intra-jurisdictional" (confined to one jurisdiction) and ultimately "jurisdictionally agile" (able to control which operations take place in explicitly designated jurisdictions). To be clear, this is not an attempt to limit the kinds of transactions that can be conducted on BEOS. Instead, it is intended to provide certainty for individuals and groups that want the protection of blockchain-friendly jurisdictions. If a company has to wonder if their transaction or operation will take place in a jurisdiction where they are violating the law, censorship resistance has little practical value.

Beyond the desire to integrate BitShares into the well-funded and rapidly evolving EOS dominated ecosystem, a desire to implement a stronger capability to confine a class of transactions to the jurisdictions that permit them has guided the design of BEOS. **The belief is that adoption by many industrial and institutional players will be encouraged if they can be assured of regulatory simplicity, clarity and compliance for their business processes.**

Block producing equipment will be highly specialized and located in specific predetermined locations. Elected block producers will have control over the software running on this equipment but not necessarily control over the machines physically unless they happen to be in the same location. This will ensure that nodes are run in specific jurisdictions and that the best possible equipment is being used. For example, nodes may eventually run in the following locations: on a satellite in space, on a ship at sea, in Utah, and in Ireland. When elected to the role of block producer, that individual or organization will be issued control over a specific instance of node hosting hardware while remaining responsible for providing backup hardware of their own choice.

There are clear advantages to engineering a jurisdictionally-agile blockchain that can guarantee that specific actions and transactions take place completely inside permissive jurisdictions. More importantly, it removes all doubt about which laws may apply. This creates certainty for organizations of all types who find the current regulatory patchwork too risky and difficult to navigate. The legal viability of such a strategy is certainly untested, but the benefits of regulatory certainty are clear and very much needed. BEOS will blaze the trail on this area by guaranteeing to organizations that their transactions are taking place in a jurisdiction where they know themselves to be compliant. Being able to guarantee that there are no such vulnerabilities may be a highly sought feature by those capable of bringing a large volume of transactions to the BEOS platform. This would be a unique benefit and feature that no other blockchain has ever been able to offer its developers.

BEOS will be launched by an appointed group of block producers that are selected by a founding team. Once the network is launched and determined to be stable, BEOS holders will be able to elect the block producers according to the standard voting mechanism in the EOS software. The difference will be that block producers will run on specialized private equipment in particular jurisdictions. Simply put, BEOS separates equipment providers from elected node operators. Here is a tentative list of initial equipment providers subject to change without notice.

	Host Organization	Jurisdiction
1	Beosnick Satellite (SpaceQuest)	International Space'
2	Quintric Depository	State of Utah
3	Blocktrades.us	Germany
4	Sovereign Sky, Ltd.	Malta
5	Mission Space	Ireland
6	Cruise Ship (Cryptonomex)	International Waters
7	Quintric Depository	State of Utah
8	Blocktrades.us	Canada
9	Terradacs	Malta
10	Biquitous	State of Idaho
11	Cruise Ship (Cryptonomex)	International Waters
12	Data Security Node	Nova Scotia, Canada
13	Blocktrades.us	Finland
14	Sovereign Sky, Ltd.	Malta
15	Mission Space	Ireland
16	Cruise Ship (Cryptonomex)	International Waters
17	Quintric Depository	State of Utah
18	Blocktrades.us	Germany
19	Terradacs	Malta
20	Biquitous	State of Idaho
21	Cruise Ship (Cryptonomex)	International Waters

This is a different way of thinking about censorship resistance than conventional blockchain thinking would normally support. It may also be the major factor holding entire industries back from participating in the cryptocurrency space. It will be controversial among those trained in Bitcoin conventions but could open the floodgates for businesses that will never participate in the current blockchain environment due to regulatory uncertainty.

19. EOS is the Baseline

One of the key BEOS design objectives is to make all tokens on the BitShares network portable -- able to move freely from the BitShares blockchain onto the BEOS chain and from there out into the multi-chain universe of the EOS main chain and its side chains. In fact, the pairing of BitShares and BEOS will make BitShares appear to the rest of that EOS universe as just another EOS chain.

Ultimately, this vision will be accomplished with whatever atomic side chain communication mechanisms are developed by the greater EOS community. However, BEOS need not wait for those breakthroughs, and permission to implement it from BitShares voters, to begin operations. Instead, one or more service providers can provide gateway functions that will lock up a token on its home chain and reissue a surrogate token on one or more side chains. Users will simply send tokens to a gateway addressed to an account on another chain and the token will appear to vanish here and reappear there. Those familiar with blocktrades.us will find this very natural.

20. Token Distribution "Raindrop"

In order to obtain BEOS tokens, BitShares or BROWNIE.PTS tokens must be transferred from the BitShares chain to the BEOS chain using the cross-chain transfer gateway described above. While their tokens reside in an account there, that account will receive a steady "rainfall" of BEOS for the duration of the raindrop. BEOS rainfall will last for at least 89 days during which BEOS tokens will be continuously distributed at a preprogrammed rate. There will be a total of 2.5 billion BEOS tokens distributed, with all of them falling in the first 89 days. The Targeted Demographic will be able to begin participating at any point during the rainfall period. However, the longer tokens are staked, the more BEOS tokens can be accumulated. During the first 89 days of rainfall, all accumulated BEOS tokens will remain locked from spending or trading. This will ensure that no BEOS tokens are traded until all tokens for that period are distributed. The benefit of this method is to ensure that no tax liability is created (in relevant jurisdictions) for new BEOS token holders because the tokens will have no market value until they are unstaked and then tradable. After the 89 day locking period ends, the BEOS tokens may freely trade and thus take on a free market value that may become taxable as income in some jurisdictions.

Participating tokens from the Targeted Demographic transferred to the gateway accounts will be held until a user withdraws them, presumably at the end of the extended rainfall period. Therefore, it will not "cost" anything to obtain BEOS beyond the effort to move them between the two chains and the delegation of proxy voting power to the gateway operator entrusted to vote for BitShares policies and worker proposals favorable to deeper BEOS integration. Participation may be for any amount of time with distributions taking place at maintenance interval rates.
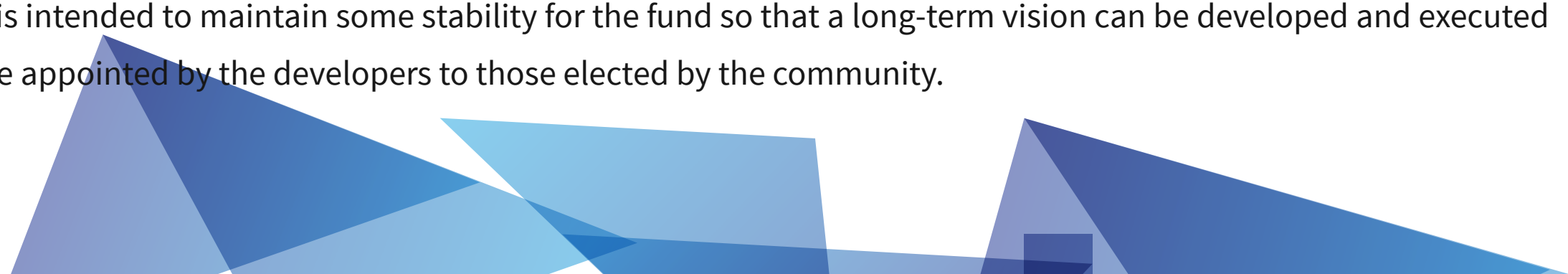
Note that the Targeted Demographic for BEOS token distribution does not include EOS holders according to EOS conventions in the same way that the distribution of EOS tokens or STM tokens does not include BTS holders. This is to keep these communities isolated from any regulatory entanglements they may individually encounter associated with token distribution. Instead, the precedence has been established by Steemit and EOS developers that all members of the graphene family will honor each other by freely using and sharing each other's publicly licensed open source code.

21. Governance

Block.one has no role in BEOS and we do not foresee any circumstances in which they will get involved. Therefore, we do not foresee them utilizing their own funds to help develop the BEOS ecosystem. BEOS will still benefit from upgrades and improvements Block.one develops and releases as freely-licensed open source software because the two chains will essentially be the same and it will be trivial to import any EOS upgrades to BEOS.

BEOS will need to fund certain important endeavors to protect the network. A BEOS Endowment Trust Fund will be created for this purpose, but it will not be managed on the blockchain like the existing BitShares Reserve Fund. Instead, it will be managed by a traditional legal trust fund, the BEOS Limited Cooperative Association("BLCA"). This is for pragmatic reasons. A conventional board of trustees is able to make contracts, act quickly, and maintain commitment to a plan longer than a purely democratic process can achieve. **This is another way where BEOS may be thought of as a hybrid chain built to be efficient and pragmatic, not ideologically pure**.

Initially, the Trustees of the fund will be selected by the founding BEOS team. After launch, trustees will be elected on a staggered basis much the way that Commissioners in the American SEC serve their terms. One trustee will rotate out and be replaced each year with another who will then serve a five-year term. This is intended to maintain some stability for the fund so that a long-term vision can be developed and executed while control transfers from those appointed by the developers to those elected by the community.

Initial BCLA Trustees and their term expiration dates

🛰️ Dec 31, 2019 Larry Hilton

🛰️ Dec 31, 2020 Angus McGlynn

🛰️ Dec 31, 2021 Tim Burke

🛰️ Dec 31, 2022 Michael Taggart

🛰️ Dec 31, 2023 Paul Martello

Elections will be conducted by the Trustees, perhaps using special tokens that are issued for the specific purpose of electing Trustees. Election tokens may be issued by the Trustees in direct proportion to the amount of BEOS held in each account over a period of time. In order to vote for a specific trustee candidate, the BEOS holder must simply send their election tokens to that candidate. At the end of the election period, the candidate with the most election tokens wins and will become a Trustee. This offers a fully transparent and simple method for token holders to participate in trustee elections. This process is subject to change by unanimous decision of the Trustees and may turn out differently in your particular universe.

The responsibilities of the fund will include rapid legal response to defend the network and its participants to make grants for the defense and welfare of the blockchain industry at the discretion of the trustees. It will be funded with 1 billion BEOS tokens to ensure that there are sufficient resources. The Trustees will hold the right to vote for block producers and participate in governance related votes. This results in a bicameral form of government, initially with 2/7ths (1B BEOS) of the voting power residing with the Trustees and 5/7ths (2.5B BEOS) residing with the holders of the circulating supply. If the Trustees gradually spend their fund into circulation their voting power will decrease, although the fund is envisioned to function like an endowment to be borrowed against or used to generate income for the Trust, ideally without touching the initial principle.

At the time the chain is first launched, a general-purpose worker proposal system will not yet exist and must be developed. Because of this, the chain will begin its life with a hard-coded Genesis Worker Account (GWA) to guarantee that the chain will have adequate initial funding for future needs. Block Producers will be paid from a small amount of inflation, not to exceed the max rate already established for EOS.

The GWA will be considered as automatically voted in as a side-effect of depositing funds to the rainfall gateway. In other words, BEOS users are implicitly voting that GWA and endowment will be spent on the maintenance and future development of the chain by claiming their tokens. This ensures that there will be a sufficient pool of BEOS to maintain and enhance the chain and that the costs of bug fixes and improvements are shared equally by all the participants in the network.

The GWA will stop accumulating funds after two years, but unused funds accumulated in the account will still be available to fund support of the blockchain until the account's balance is exhausted. If and when the blockchain has implemented a general-purpose worker proposal system, worker proposals can be created by any BEOS holder who wants to propose specific tasks they would like to see funded that they believe will be beneficial for the community.

22. Gateways Managed by Block Producers

As the bridge between BitShares and EOS, BEOS will enable any token running on the BitShares network to be easily moved to the BEOS blockchain and eventually to other EOS side chains. This will be accomplished in one of two ways, depending on how the BitShares community chooses to proceed. If the BitShares community votes to enable inter-blockchain capabilities, this will take place entirely on-chain, which would be ideal. Otherwise, this will be accomplished through gateways initially operated by the developers, but ultimately operated by the block producers.

23. Proxy of Staked BTS Voting to BCLA Trustees

While participants in the rainfall have their BTS locked up in escrow backing corresponding proxy tokens on the BEOS side, they are explicitly licensing the BCDT trustees to vote those BTS for the good of BEOS integration with BitShares. This should increase the value of the BEOS rainfall they are collecting, by supporting closer BTS integration.

24. Summary

BEOS will take a pragmatic approach using trust engineering techniques drawn from traditional human in the loop trust structures for governance combined with incorruptible blockchain technology for asset ownership and smart contracts. Depending upon willingness of the BitShares community to support tighter integration, this may change over time.

25. RAM Distribution

RAM and how it's distributed has been a major point of contention on the EOS main net. RAM speculation has led to hoarding which has driven the costs of deploying software far higher than it should be. RAM should be allowed to trade on the open market but the Bancor algorithm is not the open market. It can be easily gamed and has been to the detriment of developers and token holders. Decoupling EOS token ownership from ownership of RAM has had negative consequences for the entire EOS network and arguably, the price of EOS tokens. It has created a massive disparity between the cost of RAM and all other network resources.

Telos is proposing an alternative RAM distribution scheme where the Telos Foundation will attempt to control RAM prices through controlling supply. Both the EOS and Telos models have merit but neither is ideal. They have effectively removed the most valuable part of the network from token owners forcing them to spend their tokens simply to utilize the network. Network resources should be allocated to the token owners in proportion to their token ownership.

The BEOS network will distribute RAM to the Targeted Demographic in the same way BEOS tokens will be distributed except that the rainfall period will occur over a longer period of time. It will start when the BEOS rainfall begins and last for at least 40 fortnights (80 weeks). This will serve as a strong incentive for BTS holders to keep their tokens locked up, thus removing them from the general supply. This could have the added benefit of increasing the value of BTS tokens.

26. Summary of Distribution

2.5 billion BEOS tokens will be distributed to members of the Targeted Demographic that store their tokens on the BEOS platform over an 89-day period to be announced.

RAM will be distributed in a similar manner over a period of 80 weeks. 1 billion BEOS tokens will be rain dropped to the BCLA Trust.

27. The Code is the Law

Regardless of what may be stated in this White Paper Supplement, the only source of official information is contained in the source code that may or may not be an attempt to imperfectly implement its ideas. No one should rely on anything said herein for taking any actions whatsoever in the real world in which they are living.

This document is subject to change without notice.

28. Executive Summary

The Sovereign Doctrine

A concept or idea, however big, can be achieved by two things: the advancement of technology, and the *will* to solve problems.

The Sovereign Mission

Sovereign is setting out to:

🛰️ **M1: Eradicate extreme global poverty and protect all children & wildlife by 2032.**

🛰️ **M2: Become a currency for nations to interact with each other and power their state departments – called "SovereignNation".**

🛰️ **M3: Become the largest cryptocurrency in terms of transaction volume and connected companies.**

🛰️ **M4: Be the first 'stable' currency backed by assets from hedge funds, Fortune 500 companies and corporations who can 'Gold Label' Sovereign to create their own currency.**

The Sovereign Vision

Sovereign Coin will become one of the largest financial and digital infrastructures connecting hedge funds, central banks, family offices, pension funds, Fortune 500 companies, and sovereign funds for global trade and an alternative world payment system for the $155 trillion in cross-border transactions made each year.

SovereignSky aims to become the first 'stable' digital commercial currency by having its corporate clients back the currency and their transactions and trade with hard assets which are verified and integrated into SovereignSky's blockchain.

It is a payment and deposit solution in real time for banks, financial companies, corporate businesses and international companies specializing in large volume transactions from high value real estate deals, aerospace and defense contracts, tier one Mergers & Acquisitions and national debt processing to large-scale business transactions and international energy, commodity and oil trading.

Fortune 500 companies and large-scale corporations can also adopt SovereignSky as a white label solution called Sovereign Gold Label, providing these companies their own digital currency that can be used as their own stand alone solution or connected to Sovereign's main global currency.

SovereignSky will provide the premiere network for cross-border payment solutions from bank to bank, business to business, whilst providing a stable and real-time network for liquidating digital currency to fiat at international financial institutions and banks across the globe. SovereignSky can also be a solution for smaller nations wanting to open trading channels with large corporations and businesses within t h e SovereignSky International network. SovereignSky can stimulate economic growth by connecting to a nation's central bank and sovereign funds as well as treasuries and national monetary depositories, called the SovereignNation, that provides nation-to-nation settlement solutions within a digital financial framework at a fraction of the cost and time as traditional banking methods.

SovereignSky provides a global digital payment solution between central banks and corporations in seconds not days. Every stage of the payment cycle is reported on the blockchain ledger to provide total transparency and visibility through the whole transaction.

The currency will specialize in large scale B2B transactions of the highest level whilst also providing a micro framework for peer-to-peer instant transactions.

Welcome to the one world currency. Made by the people for the people.

Welcome to SovereignSky.

The Sovereign Gameplan

M1: Eradicate extreme global poverty and protect all children & wildlife by 2032.

M1: MISSION STATEMENT

How to eradicate global poverty?

This is not the first time this has been attempted. Currently, the World Bank and charities like the Red Cross and UNICEF are raising billions trying to solve the problem. However, like with many big problems, it takes a radical idea or concept to break through the traditional tried and tested methods to achieve its goal.

How can these two issues be solved?

This is not the first time this has been attempted. Currently, the World Bank and charities like the Red Cross and UNICEF are raising billions trying to solve the problem. However, like with many big problems, it takes a radical idea or concept to break through the traditional tried and tested methods to achieve its goal. How can these two issues be solved?

We at SovereignCoin feel that now with the capabilities of blockchain technology capabilities, mobile digital wallets, cryptocurrency smart cards and a global financial infrastructure that:

Mankind's biggest and most important mission can finally be achieved.
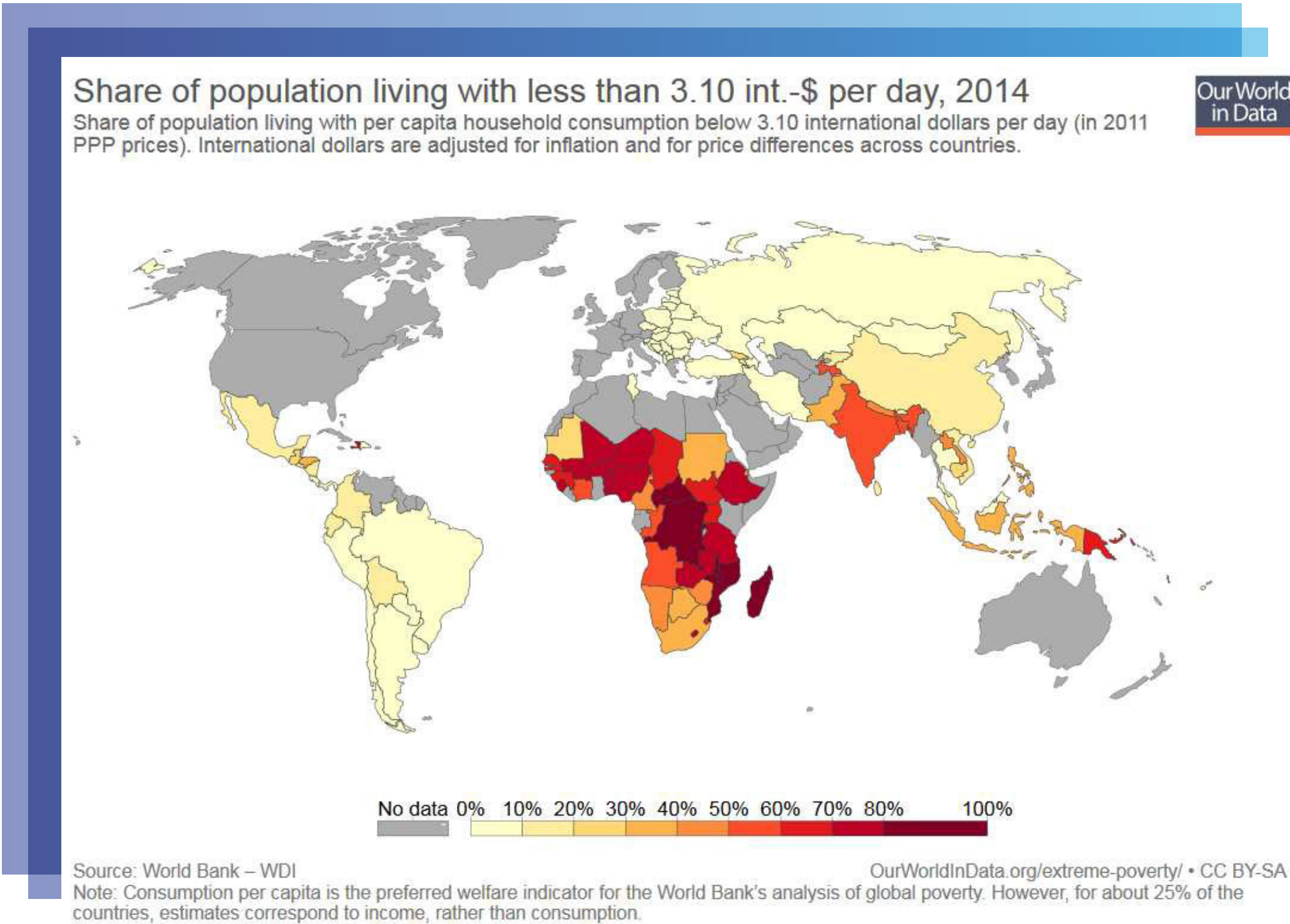
With Sovereign, we propose a holistic solution:

"A global cryptocurrency and financial digital network that is interchangeable with other blockchains and designed for use by central and individual banks, Fortune 500 Companies, hedge funds, family asset managers, pension funds, large corporations, financial institutions, national treasuries and state sovereign funds. These institutions connect to a Sovereign currency which can instantly distribute digital currency to hundreds of millions of digital wallets with smart cards which have been distributed to villages, charities, schools, churches, missionaries, orphanages, wildlife conservationists and people in need throughout the world."

29. Inefficiencies in the Global Economy

Poverty is defined as a per capita household consumption below 3.10 international dollars per day while extreme poverty is as low as 1.90 international dollars per day1. International dollars are the equivalent in purchase power to USD. Extreme poverty still affects about 10% of the world population and half of this population lives in Sub-Saharan Africa.

Figure 1 shows that in Africa and Asia, and to a lesser extent in South America, a sizable proportion of the population are still living in poverty. The causes for this are manifold and unequal access to the global markets is one of the most important.

Although statistics about poverty and extreme poverty by the World Bank are not available for many industrialized countries,

Share of population living with less than 3.10 int.-$ per day, 2014
Share of population living with per capita household consumption below 3.10 international dollars per day (in 2011 PPP prices). International dollars are adjusted for inflation and for price differences across countries.

No data 0% 10% 20% 30% 40% 50% 60% 70% 80% 100%

Source: World Bank – WDI
OurWorldInData.org/extreme-poverty/ • CC BY-SA
Note: Consumption per capita is the preferred welfare indicator for the World Bank's analysis of global poverty. However, for about 25% of the countries, estimates correspond to income, rather than consumption.

Although statistics about poverty and extreme poverty by the World Bank are not available for many industrialized countries, it cannot be inferred that poverty and extreme poverty are non-existent in these parts of the world. Rather, the same situation seen worldwide repeats itself on a smaller scale: rural areas that are disadvantaged in terms of education and technology, and thus in terms of access to national and global markets, suffer from higher poverty levels, in developed as well as in developing countries[2]. As the World Bank says[3]:

The vast majority of the global population living under the poverty line live in rural areas and have limited to no access to education. Most are employed in the agricultural sector and over half of the population is under the age of 18 years old.

However, poverty is not an intractable problem. Since 1990, nearly 1 billion people around the world have moved out of extreme poverty. This was due primarily to the economies of China, India and Indonesia – which all had significant technological progress and aggressively targeted global markets, demanding their share of opportunity.

Therefore, if market participation can be improved in other impoverished countries with weaker economies, it will be possible to move closer towards our goal of abolishing poverty worldwide.

People Living With Abuse

On average, nearly **20 people** per minute are physically abused by a domestic partner in the United States. In one year, this equates to more than 10 million women and men. 1 in 3 women and 1 in 4 men have been victims of [some form of] physical violence by a domestic partner within their lifetime.

Child Abuse

In 2012, 82.2% of child abuse perpetrators were found to be between the ages of 18-44, of which 39.6% were recorded to be between the ages of 25-34. In the United States, more than 4 children die from child abuse and neglect on a daily basis. Over 70% of these children are below the age of [3].

Globally in 2014, 1 billion children aged 2–17 years experienced physical, sexual, emotional or multiple types of violence. [1]

A quarter of all adults report having been physically abused as children. [2]

One in five women and one in 13 men report having been sexually abused as a child. [2]

In 2014, children comprised 28 percent of detected trafficking victims. [3]

Every year, there are an estimated 41,000 homicide deaths in children under 15 years of age. [2]

USD 7 trillion is lost due to violence against children each yea, equivalent to 8 percent of global GDP. [4]

Sources:

🛰️ Hillis S, Mercy J, Amobi A, et al. Global Prevalence of Past-year Violence Against Children: A Systematic Review and Minimum Estimates. Pediatrics. 2016;137(3):e20154079

🛰️ World Health Organization Media Centre Fact sheet N°150. Child Maltreatment, September 2016.

🛰️ UNODC, Global Report on Trafficking in Persons 2016 (United Nations publication, Sales No. E.16.IV.6).

🛰️ endviolenceagainstchildren.org

Based on the updated poverty line of $1.90 a day, World Bank projections suggest that global poverty may have reached 700 million, or 9.6 percent of global population, in 2015. [1]

The working poor, who work and live on less than $1.90 a day, accounted for 10 percent of workers worldwide in 2015. [6]

Sub-Saharan Africa is home to 43 percent of the global poor. [1]

On average, a child in our sponsorship program spends 4,000 hours in safe, nurturing programs, is at least 50 percent more likely to graduate college, is 14 to 18 percent more likely to have salaried employment and is 35 percent more likely to find white-collar employment as an adult.

Almost three-fifths of the world's extreme poor are concentrated in just five countries: Bangladesh, China, the Democratic Republic of Congo, India, and Nigeria. [3]

Eighty percent of the worldwide poor live in rural areas, 64 percent work in agriculture, 44 percent are 14 years old or younger and 39 percent have no formal education at all. [2]

Eleven children under age 5 die every minute, and 35 mothers die during childbirth every hour. [6] Every year nearly 45 percent of all child death under 5 are newborn infants, babies in their first 28 days of life or in the neonatal period. Three quarters of all newborn deaths occur in the first week of life. [4]

In developing countries nearly half of all mothers and newborns do not receive skilled care during and immediately after birth. [4]

Up to two thirds of newborn deaths can be prevented if effective health measures are provided at birth and during the first week of life. [4]

The global maternal mortality rate is 45 percent. [6]

Every day, 800 women die from causes related to pregnancy, childbirth, or postpartum. Most maternal deaths occur in developing countries. [3]

Lack Of Water

In 2015, 71 percent of the global population (5.2 billion people) used a safely managed drinking-water service – that is, one located on premises, available when needed, and free from contamination. [1]

Globally, at least 2 billion people use a drinking-water source contaminated with feces. [1]

By 2025, half of the world's population will be living in water-stressed areas. [1]

Since 2000, 1.4 billion people have gained access to basic drinking water services, such as piped water into the home or a protected dug well. [3]

Over 10 percent of the population still relies on untreated surface water in 22 countries. [4] At least 10 percent of the world's population is thought to consume food irrigated by waste water. [2] 2.3 billion people still do not have basic sanitation facilities such as toilets or latrines. Of these, 892 million still defecate in the open, for example in street gutters, behind bushes or into open bodies of water. [2]

The countries where open defecation is most widespread have the highest number of deaths of children aged under 5 years as well as the highest levels of malnutrition and poverty, and big disparities of wealth. [2]

The countries where open defecation is most widespread have the highest number of deaths of children aged under 5 years as well as the highest levels of malnutrition and poverty, and big disparities of wealth. [2]

Almost 60 percent of deaths due to diarrhea worldwide are attributable to unsafe drinking water and poor hygiene and sanitation. Hand washing with soap alone can cut the risk of mortality from diarrhea by at least 40 percent. [5]

Diarrhea caused by poor sanitation and unsafe water kills 315,000 children every year. [6]

Between 1901 and 1910 there were 82 recorded disasters, but between 2003 and 2012 there were more than 4,000. [1]

Every year natural disasters kill around 90,000 people and affect close to 160 million people worldwide. [9]

Economic losses attributed to weather-related natural disasters total $3.2 trillion since 1980. [2]

From 1995 through 2014, 89 percent of storm-related fatalities were in impoverished countries, even though these countries experienced just 26 percent of storms globally. [3]

An estimated 446 million people live in fragile and conflict-affected states. These states are poorer, with slower economic growth rates and higher population growth rates than other countries. [2]

Over 10 percent of the population still relies on untreated surface water in 22 countries. [8]

Based on the updated poverty line of $1.90 a day, World Bank projections suggest that global poverty may have reached 700 million, or 9.6 percent of global population, in 2015. [5]

Between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths per year, from malnutrition, malaria, diarrhea and heat stress. [6]
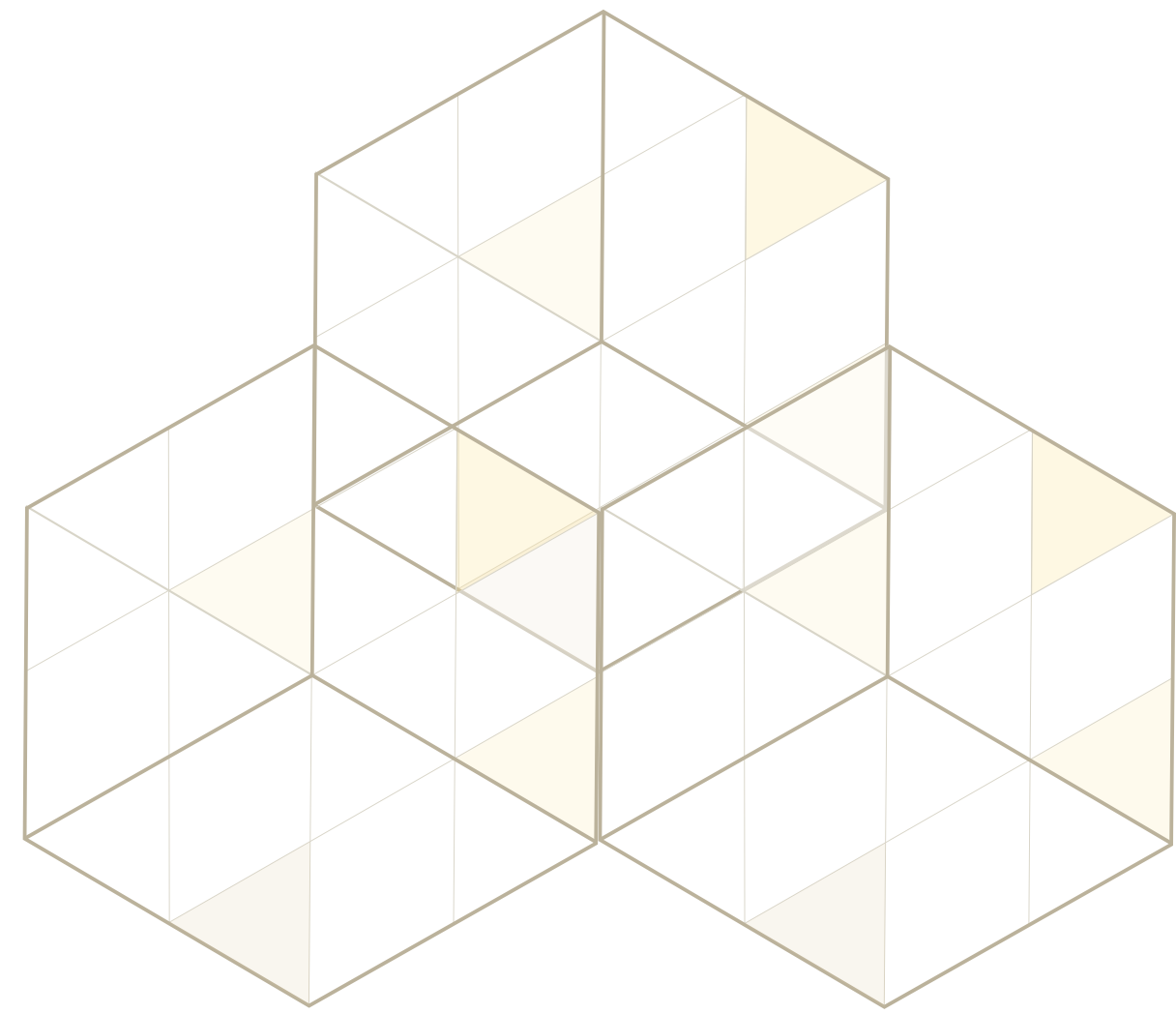
Child Labor

The facts about child labor show that it is a far-reaching problem, especially for children living in poverty around the world. Since children are still developing and impressionable they are extremely vulnerable to those who are looking to abuse and exploit them.

The International Labour Organization (ILO) defines child labor as work that is mentally, physically, socially or morally dangerous and harmful to children; and interferes with their schooling by: depriving them of the opportunity to attend school; obliging them to leave school prematurely; or requiring them to attempt to combine school attendance with excessively long and heavy work.

The Price of Child Labor

There are 168 million children worldwide trapped in child labor, which accounts for almost 11 percent of the overall child population: 100 million boys and 68 million girls. [1] Around half are working in hazardous work conditions. [2]

Nearly 60 percent of child labor takes place in agriculture. [1]

Forced labor is estimated to generate around $150 billion a year in illegal profits. [2]

There are 75 million young persons aged 15 to 24 years of age who are unemployed and many more who must settle for jobs that fail to offer a fair income, security in the workplace, social protection or other basic decent work attributes. [1]

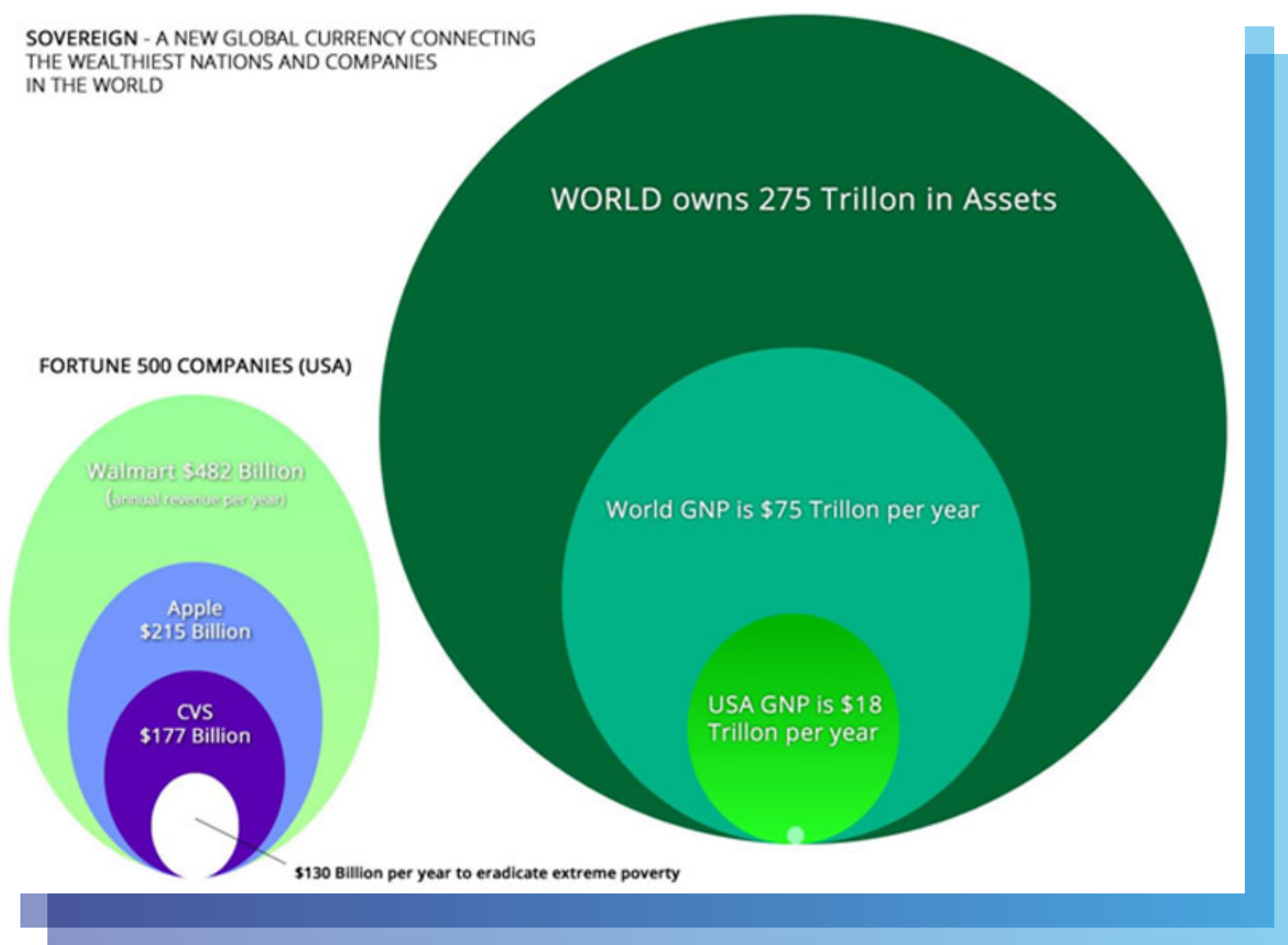Former child laborers are much more likely to have only primary education or less. [1]

Young persons who worked as children (up to the age of 15) are more likely to be in low-paying jobs. [1]

Children forced by their household circumstances or other factors to leave school prior to their fifteenth birthday are less likely to ever be employed. [1]

Children in hazardous work that directly harms their health, safety or moral development make up more than half of all child laborers, numbering 85 million in absolute terms. [1]

Making the change

The world and commerce sector has the money to achieve this goal. We believe that if a global movement was ignited and set up with infrastructure on the basis of extensively researched case studies and proven results - the commerce world would all come together joining the currency and helping achieve this goal.

SOVEREIGN - A NEW GLOBAL CURRENCY CONNECTING THE WEALTHIEST NATIONS AND COMPANIES IN THE WORLD

WORLD owns 275 Trillon in Assets

FORTUNE 500 COMPANIES (USA)

Walmart $482 Billion (annual revenue per year)

Apple $215 Billion

CVS $177 Billion

World GNP is $75 Trillon per year

USA GNP is $18 Trillon per year

$130 Billion per year to eradicate extreme poverty

Too little.Too late.

It's obvious from the list that corporate America gives too little to charity. Why is that? A few reasons. They aren't being pressured into giving. We feel if there was a global campaign fronted by celebrities then many charitable donors and large corporations would give more.

How much are the world's 100 biggest companies

With the current charity system, if each of these companies gave just 1% of their worth they would raise $160 Billion.

1. Gilead Sciences

Dr. Abhijit Chowdhury, co-founder of the Liver Foundation.

Gilead's 2015 cash contributions: $446.7 million

2. Walmart

Courtesy of Walmart

Walmart's 2015 cash contributions: $301 million

3. Wells Fargo

Courtesy of Wells Fargo

Wells Fargo's 2015 cash contributions: $281.3 million

4. Goldman Sachs Group

Goldman Sachs's 2015 cash contributions: $276.4 million

It gave away 3% of its pre-tax profits last year, compared with a median of 1% for Fortune 500 companies, according to Chronicle of Philanthropy data

5. ExxonMobil

ExxonMobil's 2015 cash contributions: $268 million

The oil and gas company (XOM, -0.16%) inched up its giving by 13.2% last year.

6. Chevron

Courtesy of Chevron

Chevron's 2015 cash contributions: $225 million

7. Courtesy of Chevron

JPMorgan Chase's 2015 cash contributions: $224 million

JPMorgan Chase (JPM, +0.03%) focuses its social investing on economic opportunity. In 2014, the financial-services firm pledged $100 million in loans and grants to aid economic recovery in Detroit.

8. Bank of America

Courtesy of Bank of America

Bank of America's 2015 cash contributions: $168.5 million

9. Alphabet (Google)

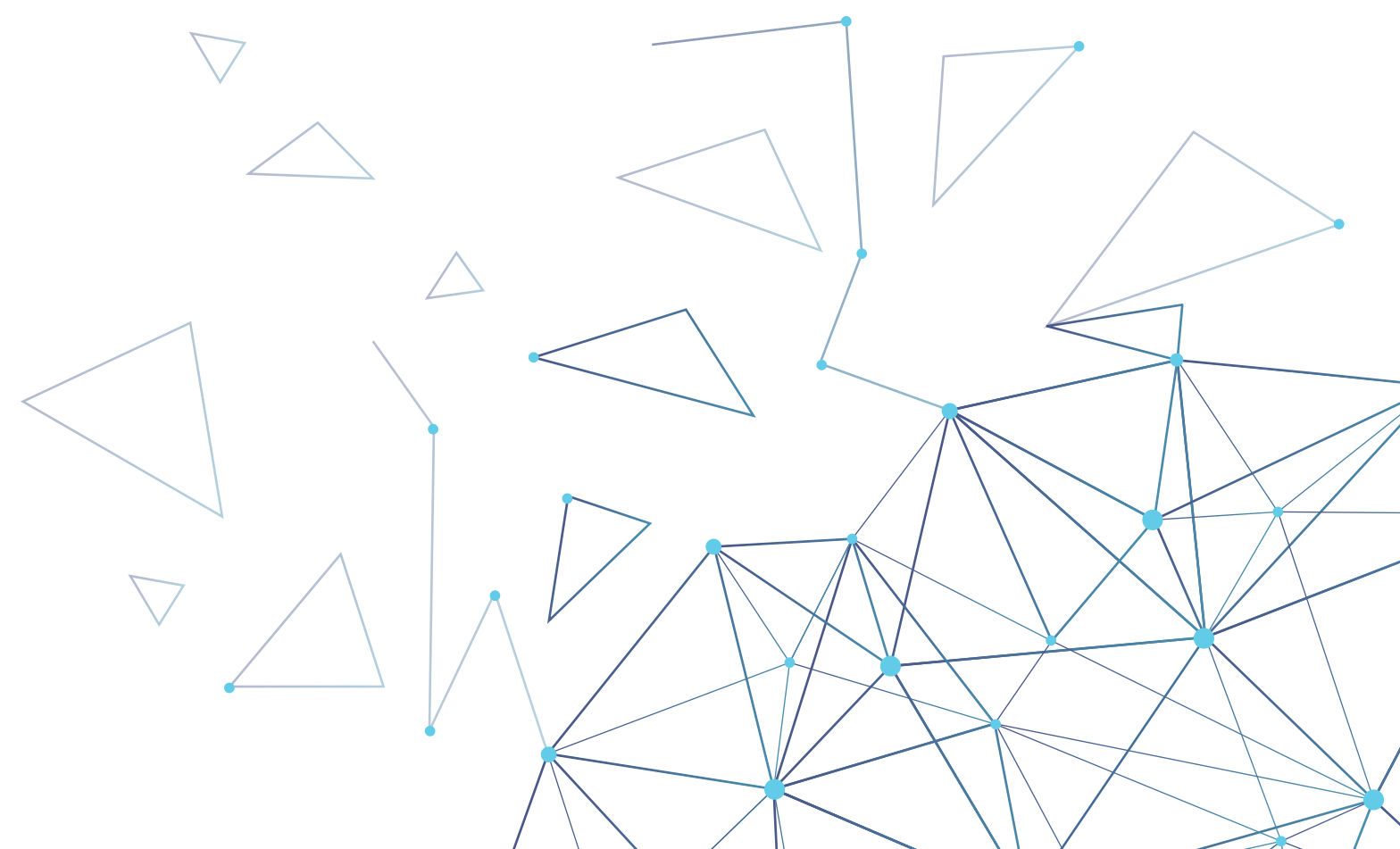*Google's 2015 cash contributions: $167.8 million*

10. Citigroup

Citigroup's 2015 cash contributions: $142.8 million

Citigroup's (C, +0.00%) philanthropy is integrated into its broader corporate citizenship strategy.

11. Microsoft

Microsoft's 2015 Cash contributions: $135.2 million

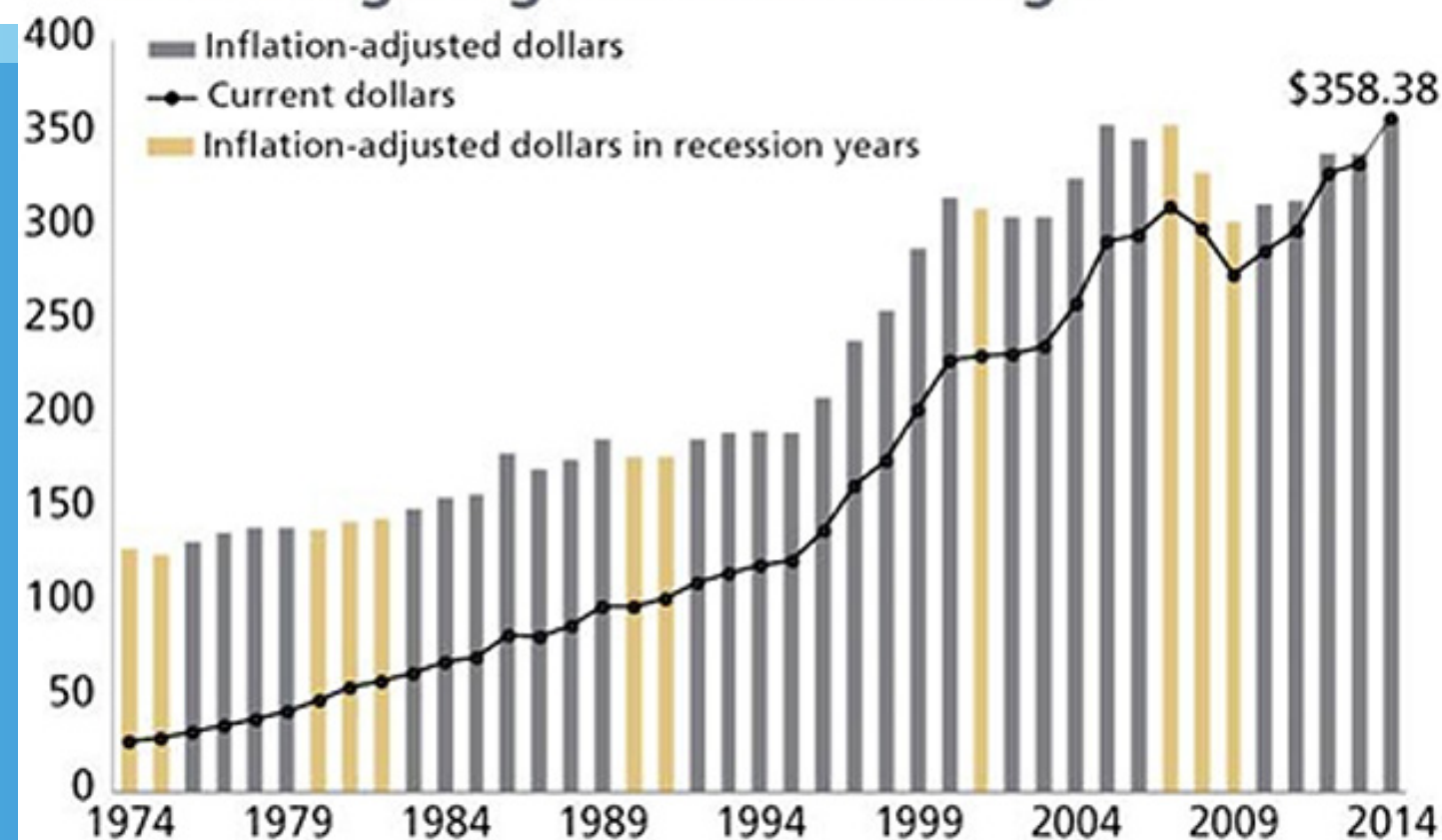Microsoft (**MSFT, +0.56%**) is aligning its giving around its business assets.

We are inherently generous.

Americans have set a new record for charitable giving. U.S. individuals, estates, foundations and companies donated **$373.3 billion** in 2015, according to the annual report *Giving USA*.

Many companies, institutions, and individuals are unclear, unaware, afraid and unsure of cryptocurrencies and blockchain. ICO's and cryptocurrency have received negative press which may affect a company's position on blockchain technology – even if it comprises of breakthrough technology can easily be tarnished by association of bad news generated by negative press from cryptocurrencies.

The IRS has a limit on charitable donations, but even an individual would like to make donations that exceed the IRS' maximum donation, they may still be able to donate. You may deduct a maximum of up to 50% of your adjusted gross income (AGI) (Line 36 on IRS Form 1040) for the tax year in which the **donation** was given.

Charitable giving hits a record high
SOURCE: Giving USA Foundation | *GIVING USA 2015*

Global middle class spending projected to reach **$63.5 TRILLION** by 2030

Giving just **0.5%** of that is **$319 BILLION**

GLOBAL GIVING

Charitable donations are decreasing across the globe.

The CAF World Giving Index shows that there has been a decrease in global charitable donations since the last report. This follows a high point recorded by last year's Index, in particular for helping a stranger. The proportion of people across the world who reported donating money in 2016 – is the lowest seen in the past three years.

With as many as 2.4 billion people set to join the world's middle class by 2030, it is crucial that we ensure that the groundwork is put in place to support and encourage a mass engagement in philanthropic giving. We estimate that if the world's middle class were to give just 0.5% of their spending – less than the average UK household gives and about the same as households in the Republic of Korea – it could amount to $319 billion in resources for civil society organizations annually.
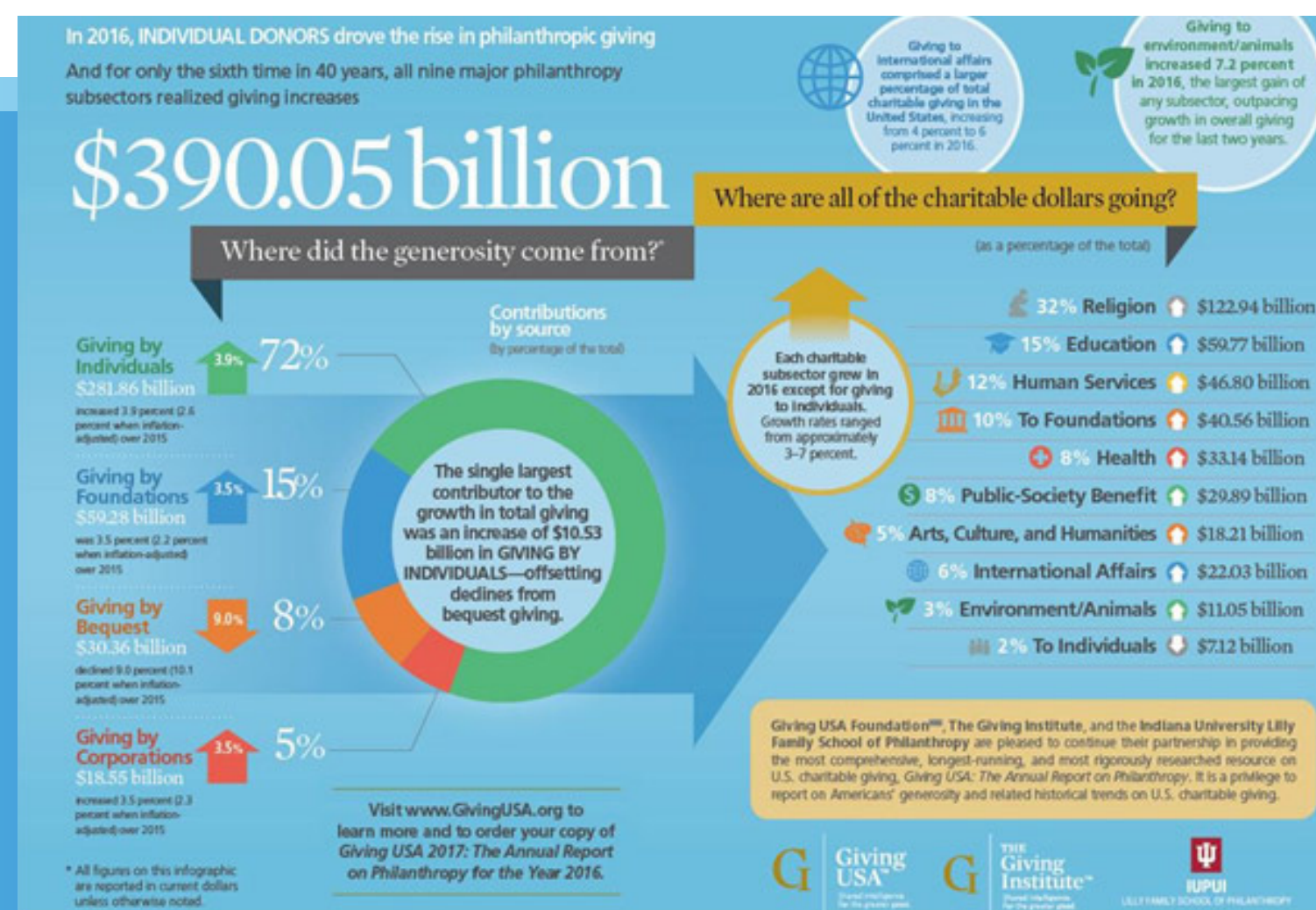
The facts about charitable giving

The average age of a donor in the U.S. is 62. [1]

Total giving to charitable organizations increased to $390.05 billion in 2016. [2]

Historically, charitable giving has risen about one-third as fast as the stock market. [3]

Almost half of U.S. donors (47 percent) give money to three to five organizations and 15 percent give to six or more. [4]

32 percent of all charitable dollars went to religion in 2016, which is more than double any other charitable sector. [2]

In 2016, the largest source of charitable giving came from individuals at $281.86 billion, or 72 percent of total giving, followed by foundations (15 percent), bequests (8 percent), and corporations (5 percent). [2]

About 7.2 percent of overall fundraising revenue, excluding grants, was raised online. [1]

Online giving grew 7.9 percent in 2016. [1]

The average online donation amount in 2016 was $128. [1]

Of all online donations in 2016, 10 percent were $1,000 or more. [1]

In 2016, 17 percent of online transactions were made using a mobile device. [1]

December remains the top grossing giving month of the year followed by June. [1]

Online giving in December increased for the second consecutive year and represented 21.8% of all online giving. [1]

Top five reasons why people give:

- To meet critical, basic human needs
- To give back to society and make the world a better place
- The belief that those with more should help those with less
- To bring about a desired impact or result
- A request for money was made

Table 2. Top 20 countries in the 5 year CAF World Giving Index, with score and participation in giving behaviours.

	CAF World Giving Index 5 year ranking	CAF World Giving Index 5 year score (%)	Helping a stranger 5 year average (%)	Donating money 5 year average (%)	Volunteering time 5 year average (%)	CAF World Giving Index 1 year score (%)	Difference between 1 and 5 year score (%)
Myanmar	1	64	53	90	50	65	1
United States of America	2	61	76	62	44	56	-4
New Zealand	3	59	66	68	43	57	-2
Canada	4	58	66	66	41	54	-3
Australia	5	57	66	68	38	56	-1
Ireland	6	56	61	67	39	53	-3
United Kingdom	7	54	62	71	30	50	-4
Sri Lanka	8	54	58	55	48	n/a	n/a
Netherlands	9	53	55	69	35	51	-2
Indonesia	10	52	42	70	42	60	9
United Arab Emirates	11	51	71	59	23	51	0
Kenya	12	51	71	41	40	60	9
Bhutan	13	50	53	58	40	n/a	n/a

Charitable giving accounted for 2.1% of gross domestic product in 2016.[1]

Historically, charitable giving rises about one-third as fast as the stock market.[2]

Approximately 91% of high net worth households give to charity.[3]

On average, high net worth donors gave $25,509 to charity in 2015. By comparison, households in the general population gave $2,520 on average.[3]

Volunteering (Individuals)

Approximately 63 million Americans — 25 percent of the adult population — volunteer their time, talents, and energy to making a difference.

Total giving rose 2.7 percent in current dollars (1.4 percent adjusted for inflation) from the revised estimate of $379.89 billion for total giving in 2015. (Please see below for a more detailed breakdown of the numbers for each philanthropic source and sector.)

The UK public donated £9.7 billion to charities last year, according to CAF's latest UK Giving report, with 61% of people donating money. Another way that generosity can be calculated is by looking at the percentage of GDP that each country gives.

This is led by Northern Europe. Sweden gives the most as a percentage of GDP, at 1.12%, followed by Norway (1.06%), Luxembourg (1.01%), Denmark (0.88%), and the Netherlands (0.82%). In fact, all of the top nine are in Northern Europe, with all the Scandinavian countries, Luxembourg, the Netherlands, Belgium, Finland, Ireland and the United Kingdom. The top non-European country in this list is Canada, which is only placed fourteenth, and donates less than one-third of a percent of their GPP (0.30%). Although the United States gives the most in terms of monetary amounts, they only give 0.20% of their GDP and are nineteenth on the list.
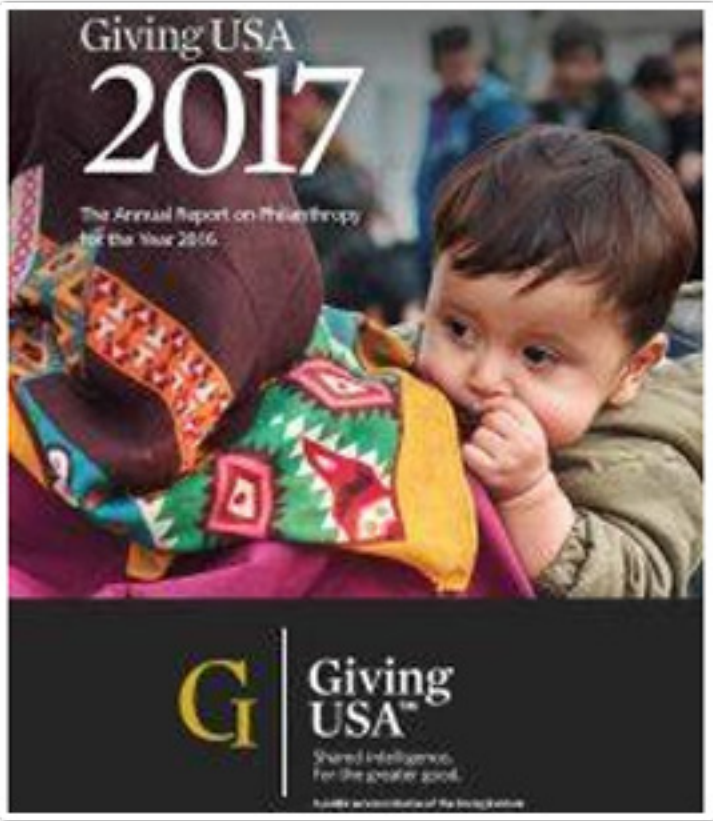
Donor-Advised Funds – WHY AREN'T THEY RELEASING THE

There were 284,965 donor-advised fund accounts in 2016.[7]

Donor-advised funds held $85.15 billion in assets in 2016.[7]

Annual contributions into donor-advised funds were $23.27 billion in 2016.[7]

Donors recommended grants from donor-advised funds totaling $15.75 billion to charities in 2016.[7]

"CharityWatch believes it is reasonable for a charity to set aside less than three years of its annual budget for financial stability and possible future needs. When a charity's available assets in reserve exceeds three years of its annual budget, CharityWatch downgrades its final letter grade rating. However, we continue to show what a charity's efficiency rating was prior to being downgraded for those donors who do not wish to factor a charity's high assets into their giving decisions.

Cost To Raise Funds

"CharityWatch believes it is reasonable for a charity to set aside less than three years of its annual budget for financial stability and possible future needs. When a charity's available assets in reserve exceeds three years of its annual budget, CharityWatch downgrades its final letter grade rating. However, we continue to show what a charity's efficiency rating was prior to being downgraded for those donors who do not wish to factor a charity's high assets into their giving decisions.

Program%	Cost to Raise $100	Efficiency Rating
90-100%	$0 - 4	A+
80 - 89%	$5 - 11	A
75 - 79%	$12 - 15	A-
72 - 74%	$16 - 19	B+
68 - 71%	$20 - 26	B
65 - 67%	$27 - 30	B-
61 - 64%	$31 - 33	C+
56 - 60%	$34 - 37	C
50 - 55%	$38 - 40	C-
36 - 49%	$41 - 59	D
0 - 35%	$60 - 100	F

SovereignSky will be extremely accessible to the public because all it costs us is an app update.

Treatment of High Assets

Giving is a fixed pie, remaining steady at about 2% of gross domestic product (GDP) for over four decades. Because charitable dollars are limited and society's needs are not, it is vital that charities do not hoard the funds they raise. When a charity sets aside excessive funds for possible, future needs that may or may not ever occur, this makes these funds unavailable for other charities to use to address more urgent needs. Charities that hoard donations are in some cases ignoring the intentions of donors who contributed in response to a solicitation for a charity's current programs, not programs that might be conducted five, eight, or even ten years in the future.

CharityWatch believes it is reasonable for a charity to set aside approximately three years of its annual budget for financial stability and possible future needs. When a charity's available assets in reserve exceed three years of its annual budget, CharityWatch downgrades its final letter grade rating. However, we continue to show what a charity's efficiency rating was prior to being downgraded for those donors who do not wish to factor a charity's high assets into their giving decisions.

Example: If a charity spends about one million dollars annually, CharityWatch will not downgrade the charity's rating for high assets as long as it has less than three million dollars of available assets in reserve. CharityWatch reduces the letter grade ratings of charities holding available assets in reserve equal to between 3 and 4 years of their annual budgets. CharityWatch downgrades to an F rating any charity holding available assets in reserve equal to 5 years or more of its annual budget.

CharityWatch's computation of available assets is not as simple as dividing a charity's net fund balance by its total operating budget. Rather, we conduct a review of a charity's Tax Form 990 and Audit balance sheets and prior to performing our end calculation of available assets, subtract out items such as the equity in land, buildings, and equipment used in operations; construction in progress; permanently restricted funds; accounts receivable due in greater than five years, and assets that a charity is prohibited by an outside party from using. We do not subtract out cash, investments, temporarily restricted, boardrestricted, and other funds that the charity could use if it chose to do so. We also review audit notes for information related to assets, such as imminent and specific plans for large, capital outlays for which the charity is holding funds in reserve or to see if the charity received an unusually large donation during the fiscal year that it would not reasonably be able to spend by the end of the fiscal period.

Top 20 most valuable companies by market capitalisation
Source: PwC / Bloomberg

30. Previous Solutions

Even the world's very first cryptocurrency, Bitcoin, was conceived with the idea in mind that unnecessary barriers that encumber the traditional banking system need to be removed. However, after Bitcoin, a multitude of alternatives (Altcoins) have sprung up, and, while this competition is beneficial in many respects, it has not led to the development of a currency that is suitable for the purpose of better market access for the world's poor, as described above.

Even so, there have been numerous attempt not to replace traditional banking with cryptocurrency, but to make traditional banking more transparent and efficient on the blockchain. One of these attempts is Ripple, a non-mining cryptocurrency and financial network. While Ripple introduces many intelligent features – such as the use of IOU's that are applicable for any currency, not just for the native XRP currency – it also has major drawbacks that have been criticized in cryptocommunities. It is controlled by a single, profitoriented company, and it does not seem to be especially well-suited (or encouraging) to its adoption by small businesses. This adoption, however, is crucial to SovereignSky's mission to abolish poverty.

Another important issue for comparable blockchain projects is scalability, especially with regard to transaction confirmation speed. Most blockchain projects emphasize speed – SovereignSky does not. As SovereignSky allows transactions up to billions in volume, speed only takes second place to reliability. Still, SovereignSky will have a reasonable transaction confirmation time of a maximum of 12 hours.

31. Sovereign Strategic Partners

M1: Eradicate global poverty by 2030

Much of today's poverty around the world is not caused by a real scarcity in resources or natural disasters, which are given more attention and headlines in the news, but by a widespread inequality in opportunity to access worldwide markets.

A unified cross-border cryptocurrency such as Sovereign Coin can work in sync with an online marketplace system that allows users easy access to the worldwide markets – whether it is from a corporation's data center or a single farmer's mobile phone. It will allow micro-transactions as well as single transactions up to billions in USD.

SovereignSky proposes an international cryptocurrency explicitly designed to create a fair, worldwide economy for the benefit of everyone. A unique system to abolish global poverty and benefit developing and developed nations alike. This ambitious goal cannot be achieved without SovereignSky's strategic partners.

32. Strategic Partner: RUON AI

RUON AI, created by SovereignSky's founders, is a holistic blockchain, social media app, ecosystem that provides social interaction as well as shopping, marketing and investment features, including cryptocurrency wallets. RUON AI will provide the digital wallet (see figure) that will be used with SovereignSky funds, and the verification methods by which the legitimacy of any user will be checked.

RUON AI also features a smart card for easier use of cryptocurrency wallets, which will be available to SovereignSky users as well. Smart cards will also be distributed to villages and communities that are recipients of charity funds from SovereignSky, and will enable the communities to buy food and other necessities out of these funds.

All RUON AI users are listed on the blockchain, so all corporations and nations uploading bulk funds to the SovereignSky network will see in a transparent manner where their funds are going - e.g., orphanages and schools, wildlife and environmental protection agencies etc.,

SovereignSky's version of RUON AI will feature an emergency button that permits individuals and communities in poor regions to request donations in case of emergency situations - for example fires, floods or droughts. This is not restricted to developing countries - in fact, all features of SovereignSky will be available in all countries. The emergency feature could just as well help an abused wife in the western world by raising enough money to transfer her kids and herself to a safe place.
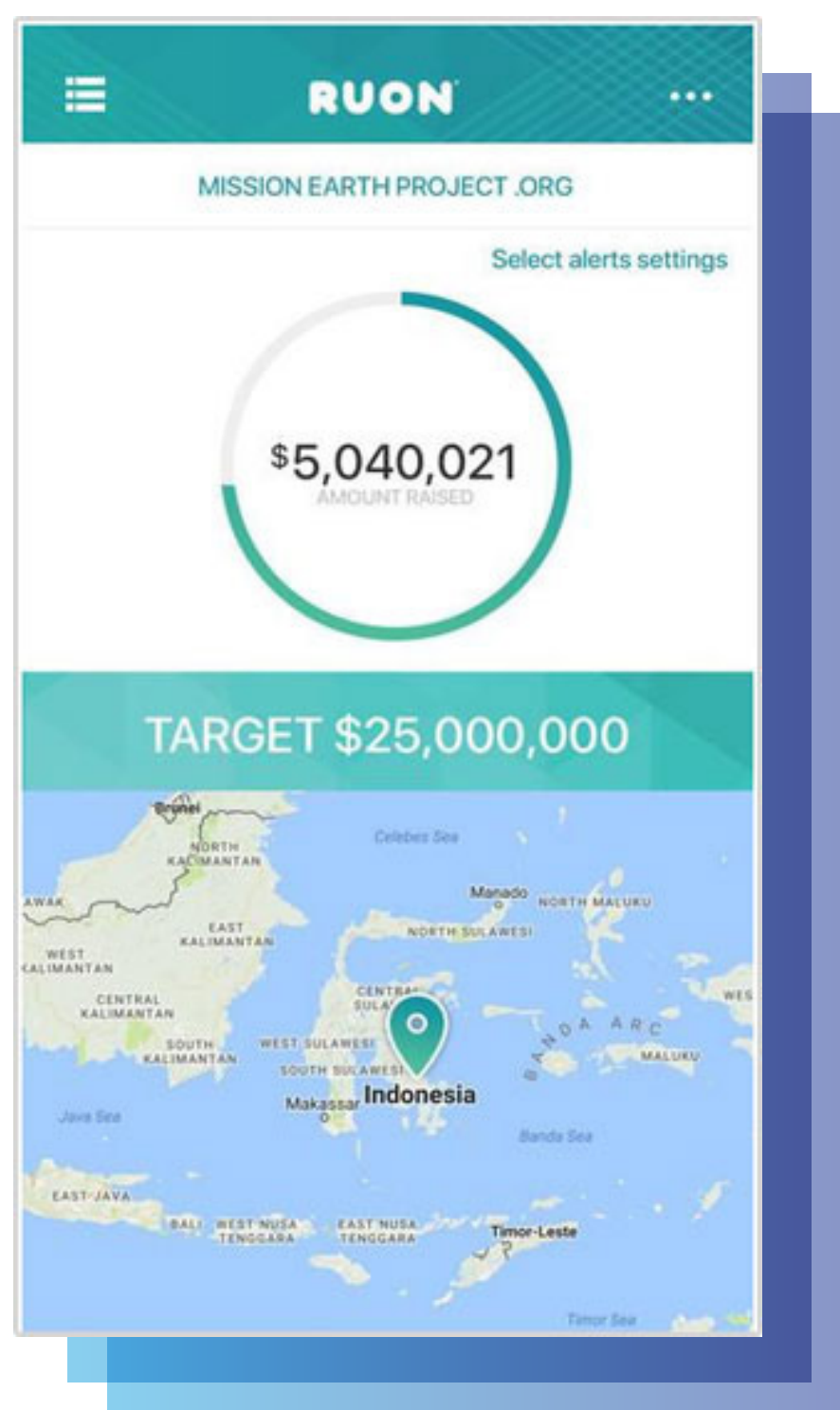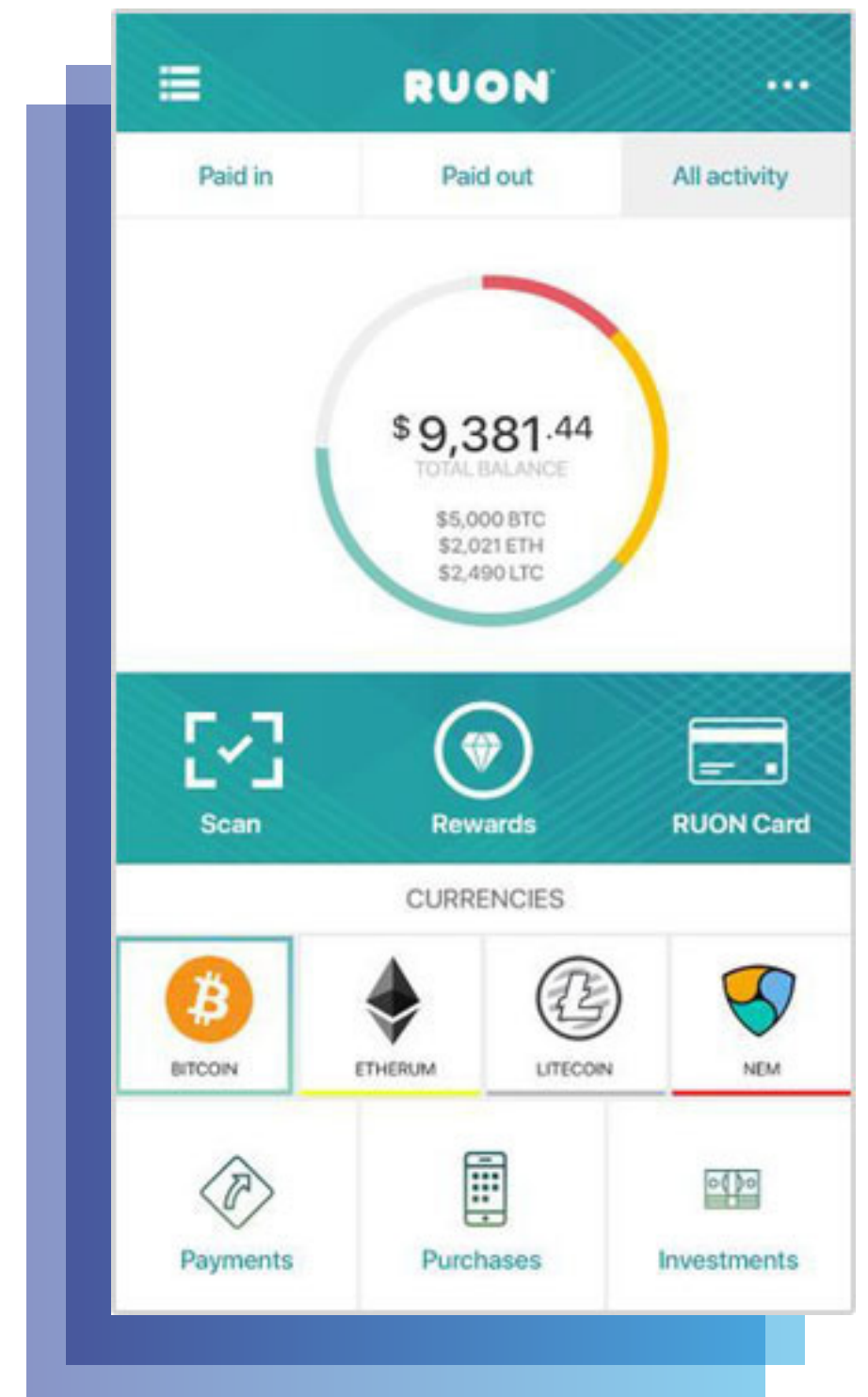
RUON AI enables individuals to perform peer-to-peer donations - which is the most efficient way of funding charitable projects. In the non-profit field, a charity is considered to be an efficient organization if 65% of the donated money is spent on charitable causes and no more than 35% on administrative and other costs of the organization. With the joint effort of RUON AI and SovereignSky, a rate of direct charity contributions of close to 100% is expected.

Not only individuals, but donating companies and organizations as well can track the distribution and success of their donations via RUON AI (see figure). They may even see in pictures and videos how their money has improved lives, created renewable energy sources, contributed to the education of girls, and so on. Pledge videos created by individuals will contribute to the success of peer-to-peer donations.

Legal Disclaimer

General Information

This whitepaper describes the initial sale in which the RUON Token ([**RUON**]) is sold. [RUON] is a cryptographic token that is designed to be used for all services in [Ruon Trading Limited's] ecosystem. [RUON] is not, nor is it intended to, constitute a security, an investment scheme, financial instrument or any other regulated product in any jurisdiction. This white paper is not, nor is it intended to constitute, a solicitation, prospectus, offer document for investment and does not pertain in any way to an offering of securities, an investment scheme, a financial instrument or any other regulated product in any jurisdiction. Please note that purchases of [RUON] are final and non-refundable. Individuals, businesses, and other organizations should carefully weigh the risks, costs, and benefits of acquiring [RUON].

Limitation Of The Purchasers

You are not eligible to and you shall not purchase [RUON] through the RUON token sale if you are a citizen or resident (tax or otherwise) of any country or state where the purchase of [RUON] or similar cryptocurrencies or tokens, may be prohibited or the token sale is deemed to be non-compliant with the applicable laws and regulations. For clarity, natural persons and entities that are a resident of (tax or otherwise), domiciled in, or have a connection to, the United States of America, Canada, the People's Republic of China, New Zealand, Japan or Hong Kong are expressly prohibited from participating in the token sale and purchasing [RUON]. Purchases of [RUON] should be undertaken only by natural persons, entities, or companies that have significant experience with, and a sophisticated understanding of, the usage and intricacies of cryptographic tokens and blockchain based software systems. Purchasers should have functional understanding of storage and transmission mechanisms associated with other cryptographic tokens. Any entities related to [Ruon Trading Limited] and officers and employees thereof will not be responsible in any way for loss of any cryptographic tokens, [RUON] or fiat currency resulting from actions taken by, or omissions of, the purchasers. If you do not have the required experience or expertise, then you should not purchase [RUON] or participate in the token offering. You should carefully consider the risks, costs, and any other demerits of acquiring [RUON], and, if necessary, obtain your own independent advice in this regard. If you are not in the position to accept nor to understand the risks associated with this token sale, or any other risks as indicated in this whitepaper, you should not acquire [RUON], until such that you have received the necessary independent advice.

Risks

The purchase of (RUON) carries with it risk. Prior to purchasing (RUON), the purchaser should carefully consider the risks listed below and, to the extent necessary, consult a lawyer, accountant, and/or tax professional prior to determining whether to purchase RUON.

(a) (RUON) will be stored in a wallet, which can only be accessed with a password selected by the purchaser, if a purchaser of (RUON) does not maintain an accurate record of their password, this may lead to the loss of their tokens. As a result, purchasers must safely store their password in one or more backup locations that are well separated from the primary location.

(b) The purchaser recognizes that some of the services in RUON's ecosystem are currently under development and may undergo significant changes before release an/or made available for use. The purchaser acknowledges that any of its expectations regarding the form and functionality of the RUON Platform and associated services may not be met for any number of reasons.

(c) The purchaser understands that while [Ruon Trading Limited] will attempt to list the RUON token on most major cryptocurrency exchanges, it is possible that some exchanges may decline to accept, which may result in somewhat less liquidity provided through to [RUON] than expected in this whitepaper.

(d) As with other cryptocurrencies and cryptographic tokens, value of [RUON] may fluctuate significantly and become reduced in value (including to zero value) for any number of reasons, including but not limited to, supply and demand, overall market conditions, political or geographical reasons, changes of regulations in any jurisdictions, and technical reasons.

(e) [RUON] will be issued on the Ethereum blockchain. As such, any malfunction or unexpected functioning of the Ethereum protocol may impact the purchaser's ability to transfer or securely hold [RUON]. Such impact could adversely affect the value.

Disclaimer

To the maximum extent permitted by the applicable laws, regulations and rules, [Ruon Trading Limited], any entities of the RUON ecosystem, and officers and employees thereof shall not be liable for any direct, indirect, special, incidental, consequential or other losses of any kind, in tort (including negligence), contract, statute or otherwise (including but not limited to loss of revenue, income or profits, and loss of use or data), arising out of or in connection with any acceptance of or reliance on this whitepaper or any part thereof by you. [Ruon Trading Limited] and any related entities and officers and employees thereof shall not be liable for any loss of [RUON] after it is transferred to you by any reason including but not limited to your failure to maintain or backup an accurate record of your password or password cracking by somebody due to your poor maintenance of your password. Any person undertaking to acquire [RUON] acknowledges and understands however that [Ruon Trading Limited] does not provide any warranty as to the release of any exchange or any of the other technical features or services contemplated under this whitepaper. You acknowledge and understand therefore that [Ruon Trading Limited] (including its associated bodies corporate, officers and employees) assumes no liability or responsibility for any loss or damage that would result from or relate to the incapacity to use [RUON]. Regulatory authorities are carefully scrutinizing businesses and operations associated to cryptocurrencies and tokens in the world. In that respect, regulatory measures, investigations or actions may impact future business and may limit or prevent it from developing its operations in the future. Any person undertaking to purchase [RUON] must be aware that the RUON business model (to be interpreted in its widest sense), and its existing platforms may change or need to be modified because of new regulatory and compliance requirements from any applicable laws in any jurisdictions. In such case, purchasers and any person undertaking to acquire [RUON] acknowledge and understand that neither [Ruon Trading Limited] nor any of its affiliates shall be held liable for any direct or indirect loss or damages caused by such changes. This white paper and any other materials or explanations made by [Ruon Trading Limited] and its officers and employees shall not and cannot be considered as an invitation to enter into an investment. They do not constitute or relate in any way nor should they be considered as an offering of securities, a financial instrument, an investment scheme or any other regulated product in any jurisdiction. This white paper does not include nor contain any information or indication that might be considered as a recommendation or that might be used as a basis for any investment decision. Neither [Ruon Trading Limited] nor any of its officers and employees are to be or shall be considered as advisor in any legal, tax or financial matters. Acquiring [RUON] shall not grant any right or influence over [Ruon Trading Limited] organization and governance to the purchasers.

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