# Slock.it UG Proposal #1 Overview

Overview/Educational purposes only—for actual terms
please refer to the Proposal Smart Contract on the Blockchain (address TBD)

# *For a Universal Sharing Network, the Ethereum Computer Reference Design and its Ecosystem of Applications*

**Creation Date:** Friday, 29th April 2016

| **Prepared by:** | **Prepared for:** |
|:---:|:---:|
| Slock.it UG (Haftungsbeschränkt) | The DAO |
| Company HRB 30026 | Address: TBD |

# DRAFT - FOR REVIEW ONLY

**Important note to reviewers:** this document is provided "AS IS" for prospective DAO Token Holders to review.

All smart contracts and DAOs addresses, if present, are placeholders only.

A Proposal smart contract, crafted based on community feedback of this document, will be submitted following the completion of The DAO Creation.

To submit your comments and feedback, please join our slack at http://slack.slock.it:3000/ or the DAO Forum thread on https://forum.daohub.org/c/theDAO

# About Us

## Slock.it UG (Haftungsbeschränkt)

Slock.it is the world's trailblazer in creating blockchain infrastructures. Our technology connects the blockchain to the physical world, effectively giving connected objects an identity, the ability to receive payments and the capability to enter into complex agreements.

Slock.it aims to address security, identity, coordination and privacy over billions of devices. As part of the collaborative economy, it allows for any object to be rented, sold or shared securely—without middlemen. And in the field of machine to machine communications, it allows for direct, cost-effective payments between objects, as well as doing away with costly centralized servers outlay. Ultimately, this provides a better customer experience as all transactions take place instantly and without bureaucratic contracts.

Slock.it's technology also reduces its clients operating costs thanks to simplified billing while enabling fraud proof accounting. We help replace corporate data silos and fragile data workflows with secure coordination around a shared, immutable blockchain state.

In the corporate space, we help energy producers address decentralization or risk being disintermediated. We also work with forward-thinking automotive manufacturers that understand the importance of exploring the service industry, including operating autonomous fleets of self-driving taxis.

Slock.it is already collaborating with both startups and established companies and has a track record proving its capability to deliver on this Proposal.

Slock.it is headquartered in Mittweida, Germany and works with clients globally.

# Meet the Team

Our team has been around since the inception of the blockchain revolution, and with 60 years of combined IT expertise, we bring a pragmatic approach to building enterprise-grade solutions with this exciting technology.

**Simon Jentzsch**
Founder & CEO

**Christoph Jentzsch**
Founder & CTO

**Stephan Tual**
Founder & COO

Simon Jentzsch, Founder and CEO: With prestigious clients including Siemens and Bahn AG, Simon has been deploying enterprise solutions for the last 20 years as Project Manager, Developer and Software Architect. Simon is now leading the development of the foundation Slock.it framework, enforcing Ethereum smart contracts into the physical world.

Christoph Jentzsch, Founder and CTO: Christoph's background is in theoretical physics, where he developed optimized software solutions for high performance computing on specialized hardware. Christoph has been part of the Ethereum project since 2014 as Lead Tester, securing and shaping the core protocol while working on the backend of the C++ client.

Stephan Tual, Founder and COO: Previously CCO for the Ethereum project, Stephan has three startups under his belt and brings 20 years of enterprise IT experience to the Slock.it project. Before discovering the Blockchain, Stephan held CTO positions at leading data analytics companies in London with clients including VISA Europe and BP.

**Dr. Gavin Wood**
Advisor

**Lefteris Karapetsas**
Lead Technical
Engineer

**Griff Green**
Community Organizer

**Dr. Christian
Reitwießner**
Advisor

Lefteris Karapetsas, Lead Technical Engineer: After graduating from the University of Tokyo, Lefteris developed backend software for companies such as Oracle. He has been part of Ethereum as a C++ core developer since November 2014, having worked on Solidity, the ethash algorithm, the core client and the Continuous Integration (CI) system.

Griff Green, Community Organizer: Griff recently obtained his Master of Science degree in Digital Currency and is one of the first people in the world to have a degree in this rapidly evolving field. He has been traveling around the globe for the last several years promoting digital currencies especially in the US, Ecuador, and Indonesia.

Dr Gavin Wood: Advisor: Gavin wrote the first implementation of Ethereum and is the Inventor and Architect of web three (the decentralized web). Until very recently Gavin was CTO of Ethereum, and is now the Founder of Ethcore, a blockchain consultancy.

Dr Christian Reitwießner, Advisor: Christian is the main developer of the Ethereum smart contract programming language, Solidity. Since February 2016, Christian is also leading the development of the Ethereum Foundation C++ implementation.

# Table of Contents

# Important Disclaimer

**The Proposal's smart contracts are interpreted in plain English within this Overview document solely for the convenience of prospective DAO Token Holders. This document is not intended to be binding nor to be interpreted as a legal contract: only by voting for the Proposal smart contract on the Ethereum blockchain will The DAO accept its terms, and the entirety of the these terms will defined in the form of Solidity code.**

# Overview

## Executive Summary

Through its stated goal of building the future infrastructure of the sharing economy, Slock.it UG is uniquely positioned to assist The DAO with its own objectives of benefiting both DAO Token Holders and the decentralized ecosystem. Slock.it UG intends to submit to The DAO a series of Proposals over time, each one relevant to the current market conditions.

This first Proposal Overview covers the design, creation, production, distribution and marketing of the Universal Sharing Network, the Ethereum Computer's reference design and the ecosystem of applications that will be built to enable this project. The detailed scope and timeline for the delivery of these objectives is dependent on which Proposal Scenario The DAO would like to pursue following discussions on the http://daohub.org forums and the Slock.it Slack at http://slack.slock.it:3000. (Please refer to "Proposal Scenarios" Sections).

Those new to the concept of DAOs (Decentralized Autonomous Organizations) should note that there will be other Proposals from Slock.it and other contractors submitted to The DAO. This creates a mutually beneficial relationship where the Contractors are incentivized to commit to an outstanding delivery in order for their future Proposals to be considered by The DAO.

Through this Overview we intend to detail how we will build a network that makes it easier for both consumers and businesses to turn their assets into income by enabling anyone to rent, sell or share almost any object—without middlemen and without having to ask permission.

This Overview will be backed by a Proposal in the form of a smart contract on the Ethereum blockchain. The source code of the final version of this Proposal will be posted on https://github.com/slockit following the completion of The DAO's Creation phase.

The core of our Proposal to The DAO represents the development of a Universal Sharing Network—a combination of hardware reference designs for consumer electronic products and matching applications making it possible to rent, sell or share connected objects through an intuitive user interface.

A percentage of the revenue generated by the users of the Universal Sharing Network will be sent to The DAO. This percentage, known as the DAO%, can be adjusted by The DAO through a proposal to be anything between 0% and 5%, creating a flexible economically sustainable model for The DAO to control the growth of their network and the value of their Tokens, as DAO tokens will be granted a special use case within the Universal Sharing Network and will not be charged the DAO%.

## Use of DAO.LINK services

A proper, 100% decentralized DAO is only plausible on the Ethereum network as it's the only blockchain that supports complex, autonomous smart contracts so far. Therefore, DAOs only speak ETH—the 'fuel' that powers the Ethereum network. Many smaller or individual Contractors will see this as an advantage, preferring the nimbleness of direct ETH transactions. On the other hand, businesses such as ours—working within the classic established legal framework—require a regulatory, tax and VAT approach that integrates with the 'real world'.

DAO.LINK (http://daolink.io/, website coming soon) has set up the legal framework to give real world companies the ability to work for DAOs while still being able to fill out the necessary documentation required to stay compliant in their jurisdiction.

Slock.it UG has chosen to make full of use of the DAO.LINK services. Slock.it UG will therefore submit its DAO.LINK address to The DAO as part of the Proposal smart contract (Ethereum Address TBD) and legally contract with DAO.LINK. DAO.LINK will in turn contract with The DAO directly.

DAO.LINK is built in partnership with BITY.com, operated by Bity SA, a fully-licensed company based in Neuchatel, Switzerland, audited by KPMG.

# The Universal Sharing Network

## Economic Rationale

The percentage to be taken from each transaction initiated by the Universal Sharing Network is determined by The DAO itself. This percentage is designed to create an incentive for The DAO's actions and to maintain The DAO's economic sustainability. This percentage will be sent directly to The DAO, giving it the option to use the accumulated ETH to support its growth, or to redistribute it to its token holders.

Users that do pay the DAO% will enjoy all the advantages of permissionless decentralization, access to the trustless payment and deposit features, the ability to leverage third party services that are built on the network, and the network effects of being able to be discovered by anyone in the world searching on this global network for their object or service. If on the other hand a user chooses to forgo paying the DAO%, they would lose access to the Universal Sharing Network.

Accordingly, The DAO depends on a number of compatible smart object deployments and a certain degree of adoption in order to become profitable. However, creating partnerships and integrating our technology with existing smart object manufacturers is not always technically possible due to the constraints imposed by their very small form factors. It's also too gradual of a process in a market where there are thousands of smart objects available and new ones are being released every week.

Hence, there is a need for a product that can interact with the majority of both existing and upcoming connected objects. This consumer electronics product, named the "Ethereum Computer", will allow The DAO to see a meaningful number of smarts objects being made available as part of a search interface early on.

The Universal Sharing Network gets its name from the fact that the sharing applications that operate on top of the Ethereum Computer can run on any hardware powered by Ubuntu Core. This could mean one day a router, a TV, or a fridge could implement the Universal Sharing Network apps directly without needing to ask Slock.it or The DAO for permission. Ubuntu Core applications are capability-based which makes them highly adaptable. Specific integration (e.g. bike locks) could be the subject of future Proposals to The DAO.

## Network Effects

Both the hardware designs and software built by Slock.it UG for The DAO will be released under the free, open source MIT license. The DAO, if it votes to support our Proposal, will be helping with the deployment of a decentralized sharing infrastructure in the form of a

Universal Sharing Network, free of any tie to any particular hardware or software implementation.

Both Slock.it UG as well as competing third 3rd parties (read: potential Ethereum Computer clone manufacturers) will have an incentive to register with The DAO's network so that their end users can make use of the Universal Sharing Network's mobile app to rent, sell and share their objects .

Participating in the Universal Sharing Network will also be required to leverage the power of the thousands of DAO Token Holders, each one representing an evangelist vested in its success.

To be part of The DAO's Universal Sharing Network the smart objects themselves will need to meet some specific conditions, one of them being having to send The DAO a small portion of their revenue, the DAO%. Therefore, in order to be discovered on the Universal Sharing Network, it's in the interest of anyone (not just Slock.it UG) who intends to build a version of the Ethereum Computer to include the payment to The DAO by using the smart contracts provided by Slock.it UG.

And this will stay true for all future iterations of the Ethereum Computer, which could be submitted as part of upcoming Proposals, forming a virtuous cycle of value driven by network effects.

Should someone produce a smart lock and forgot  the so-called "DAO%", they would lose all the advantages of decentralization, namely:

- Access to micro-transactions, e.g. being able to pay a couple of cents to rent an appliance for 10 minutes or less.

- Trusted key management leveraging the native public/private key infrastructure of the blockchain, without third parties involved.

- Transparency, being able to prove that someone has the permission to open any given lock, again without central tracking.

- Efficiency:, both end users and The DAO itself won't have a need to run centralized servers or make use of costly cloud services.

- Stability, as the locks function with or without Slock.it UG involved, suffer no downtime and are free of dependency ('vendor locking') from any third parties.

- Enjoying access to countless third party services enabled by the open API for smart contracts. The blockchain and the Universal Sharing Network act as an infinitely extensible open API where any developer can contribute services that add value (currency conversion, insurance, etc)

While much of the above could be done in a centralized way without the blockchain, it will be much easier, faster, and cheaper to leverage the powerful network effects brought on by The DAO itself. Its competitive advantage stems from the synergies of the projects it supports and its technologically agnostic network of partners, all aligned around shared, mutual incentives.

## Market

The Ethereum Computer enables both consumers and businesses to turn their assets into income by sharing them on the Universal Sharing Network. Anywhere where there are underused assets such as temporarily vacant apartments, there is an opportunity to make a profit.

The sharing economy has created [17](#) different billion-dollar companies with 60,000 employees. The sector has received close to $15 billion in funding so far and its global yearly revenue is projected to reach $335 billion by 2025 (source: [PWC](#)).

We believe that very soon, Airbnbs will be fully automated, and small business owners will prefer to rent private work spaces on demand rather than commit to complex leases. Owners in a sharing economy become both consumers and producers, leveraging the Universal Sharing Network to earn an income without having to pay 9-40% to a centralized intermediary (Source: [The Economist](#)).

The millennials' philosophy is fast becoming "If you can rent it, why own it". 66% of the world is willing to share or rent their personal assets for financial gain, and that figure is as high as 94% in China (Source: [Nielsen](#)). We believe the Universal Sharing Network enabled by Ethereum Computer is uniquely placed to address those needs worldwide, today.

## Use Cases

- Enable the entire home to communicate with the blockchain: rent out a flat, an office space, access to Wi-Fi hotspots, or use any compatible smart object in range to rent, sell or share directly and securely.

- Try out new, exciting applications: The Ethereum Computer is a full blown implementation of the Ethereum stack, and therefore can serve any Đapp out to a home theater.

- Browse the decentralized web securely: it's easy to point a browser, mobile phone or tablet to the Ethereum Computer, keeping precious cryptographic keys securely within the confines of the local network.

- Earn a passive income: the Ethereum Computer can be used to run an IPFS node and perhaps receiving digital currencies for renting unused computing resources. The Ethereum Computer could also facilitate the creation of decentralized data sourcing services, earning tokens by providing real-world data to blockchain Oracles.

- Develop applications with Ethereum: Developers will never have to worry about installation difficulties. We'll resolve compatibility issues between the various components of the Ethereum 'stack' (Whisper, EVM, Web3.js, Swarm, etc) and will push updates for users to accept only after we have tested the framework top to bottom.

- Get rewarded for helping secure the Ethereum network without having to dedicate larger, more expensive equipment to that task (will be available once Ethereum has switched to PoS).

## Applications

First and foremost, the Universal Sharing Network will be a platform to share access to physical objects. We envision a generic interface for most objects compatible with the protocols supported by the Ethereum Computer—this will include simple lock/unlock states.

For objects with the manufacturers of which we have managed to strike partnerships and have deeper integration, we will develop custom interfaces representing the object in greater graphical detail.

Other applications will include experimental software such as the official Ethereum browser 'Mist' and yet to be developed Ðapps on the Ethereum network.

# Companion Apps

Objects made available to rent, sell or share need to be easy to discover. This is why we are developing both mobile and browser based applications to put users in contact with each other.
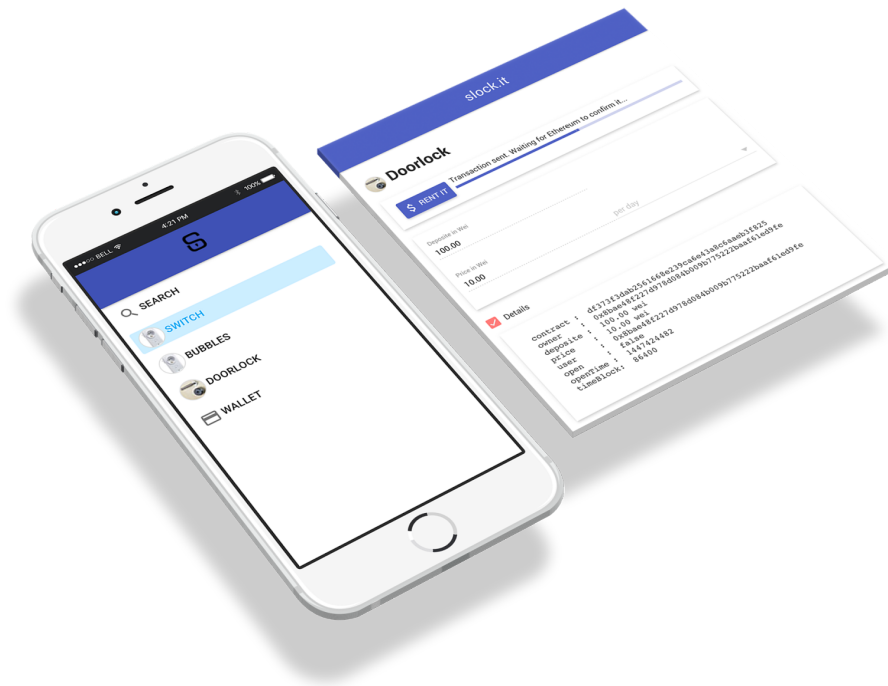


Screenshot of our current prototype application located at http://app.slock.it/

These applications will be made available for common browsers on widely used operating systems, as well as iOS and Android. They represent a considerable undertaking on their own as they will need to support a powerful, international matching engine as well as a decentralized reputation system. We aspire to make complete cross-platform solutions available.

# The Ethereum Computer

## Vision

The Ethereum Computer is a smart hub design with extensive connectivity running an optimized Ethereum blockchain node and a series of decentralized applications. It brings smart contracts and blockchain technology to the entire home and makes it possible to rent access to any space or compatible smart object by accepting payments without intermediaries on the Universal Sharing Network.

Flexible, the Ethereum Computer is intended for both consumers and developers, providing a platform to securely browse any decentralized app (or 'Đapp') from the convenience of a desktop or home theater, alongside an easy to update stack to develop Ethereum applications.

It will also become a source of passive income: it's the ideal platform for Ethereum Proof-of-Stake mining, and will come preloaded with experimental apps, for example to rent one's hard drive space in exchange for digital currencies or to make 'real world' data available to an Oracle service.



An Early prototype of the Ethereum Computer, presented at MWC 16 in partnership with Canonical

## UX

The Ethereum Computer is intended to be a consumer oriented product. This requires the development of an attractive user interface guided by a natural user experience throughout. Internationalization will be supported for all the locales where the Ethereum Computer is distributed.

From unboxing onwards, the experience needs to be completely seamless,  from the moment the user connects the Ethereum Computer to their wireless network for the first time.

This attention to detail will continue through the entire user experience, with the Ethereum Computer booting straight into a custom interface. The sharing economy user experience elements will be mirrored from a mobile app allowing  an interaction with the Ethereum Computer directly  via a smartphone wirelessly.

Should the user decide to plug in the Ethereum Computer to a compatible display, they will be presented with the most frequently used applications, and notified of new apps via a custom user interface.


## Systems Layer

The systems layer for the Ethereum Computer design will consist of Ubuntu Core running the Ethereum framework.

The Ethereum framework for Ubuntu Core is being developed as part of this project. Ubuntu Core, also known as Snappy Ubuntu, is a minimalistic version of Ubuntu designed to run on embedded devices. Atomic upgrades and guaranteed roll backs offer a bulletproof approach perfect for embedded devices where predictability and reliability are paramount. Additionally, applications are easily isolated from one another so there are no dependency conflicts, thus contributing to the overall security of the system.

The Ethereum framework is complete and is nearing the readiness required to be uploaded to the Ubuntu store. A developer wanting to target embedded devices will be able to write a Đapp for Ubuntu Core and point to our framework as a dependency. Developers won't have to waste time compiling a stable Ethereum client, handling dependencies or dealing with hardware compatibility issues; the Ethereum framework will take care of it all for the developer so they can focus on building great Đapps.

We are keen to continue exploring and improving on the Ethereum framework for Ubuntu Core throughout this project. In particular, we intend to ensure the Ethereum framework runs the most optimized client possible, in order to minimize the impact on resources and allow for a smaller hardware footprint overall.

## Developer Features

We want to make it easy to deploy new applications on the Ethereum Computer, as well as drastically simplify the Ðapp development process by providing a coherent, tested, stable backend alongside the Ethereum client.

Because the Ethereum Computer is built on Ubuntu Core, it will be possible for developers to create Snappy [Ubuntu apps](#) that can then be installed in one click by users.

We will also be providing regular (but optional) software updates which cohesively assemble the various elements that form the decentralized web. For example there could be incompatibilities between a specific version of IPFS and the latest release of the official Ethereum clients. It's these type of incompatibilities that we intend to resolve on behalf of developers by extensively testing which pieces of the decentralized application framework best fit together.

The end result will be a platform where the complexity of compiling multiple experimental clients from source will be replaced by a turnkey development solution, enabling developers to focus on delivering great applications.

## Pricing

Slock.it UG aims to retail the consumer version of the Ethereum Computer at an MSRP of as low as USD $99 for the lower end model and USD $199 for the higher end model (pricing may vary by location).

# Hardware Implementation

## Industrial design

It is our intention for the Ethereum Computer's final design to not only be eye-catching but simply stunning. A real conversation piece, its outside appearance should do the underlying revolutionary technology justice.

We will strive for the Ethereum Computer to visually evoke its internal state, using for example an LED display so that a quick glance is sufficient to understand whether or not user action might be required.

The case's appearance itself will be undertaken by designers with established credentials in the development of consumer grade products and a deep understanding of user interfaces as well as user experiences.

## Board

From concept to the manufacturing of the final boards, Slock.it UG will spec, design and select hardware adapted to the functionality desired in the Ethereum Computer. Our early prototypes have been leveraging the Raspberry Pi 2, however there is a need to study the feasibility of using other boards that may be more adapted to cryptographic applications, in particular those supporting Trusted Execution Environments (TEEs), such as the Samsung Artik platform.

From a form factor perspective, the footprint of existing boards initially appears acceptable, however a custom board layout with additional connectivity options built directly on the Ethereum Computer's board could represent a more appropriate solution than leveraging several daughterboards. Furthermore, adding or removing interfaces, headers or connectors could be an option in order to allow for a smaller form factor, more adapted to consumer electronics designs.

Changes to the configuration including the type of memory (onboard flash, e/MMC) will probably be required depending on the results of footprint testing with regards to decentralized applications, most of which haven't been released yet and will require extensive profiling.

Finally, special consideration will be given to elements such as storage, where heavy disk I/O can quickly lead to SSDs failure.

To ensure a safe and long-lasting design, a dedicated team of engineers will be recruited alongside the use of specialists with extensive experience in the production of proven, already widely distributed consumer electronics.

## Mass Production

Anyone familiar with Kickstarter campaigns will know that a good idea and great people is just the beginning. We will work directly with manufacturers well before the board and case designs are finalized, in order to ensure that we have complete control over the mass production of the PCBs, injection molds, etc.

Needless to say, we will recruit a production team with a successful track record in producing consumer electronics on a large scale, as well as established relationships with the necessary partners to see the production of the Ethereum Computer to completion.

# Marketing

## Branding

No commercial production is complete without paying special attention to branding. From a homogeneous look and feel across all medias, to a strategy that gets down to brass tacks, designed by people with successful track records in campaigns addressed to the general public, we will apply the utmost care of upholding a consistent and impressive brand throughout.

We intend to produce explanation videos that are both informal, exciting and aesthetically pleasing, reflecting the attention to detail given to the industrial design of the Ethereum Computer itself.

Branding excellence will be reflected in every layer of the product, including the packaging and unboxing experience.

## Advertising

Armed with these powerful branding assets, we will direct an advertising campaign across all viable channels, led by respective experts in their field. While worlds away from our core skills of software engineering, we cannot stress how critical it is to execute successfully on a marketing strategy in order for the Ethereum Computer to make its way into as many homes as possible.

A dedicated marketing manager will be recruited, actively planning and measuring against objectives very early on in the Ethereum Computer's lifecycle with the help of an experienced PR company. Social media, conferences, meetups, community organized events, trade shows, printed and online press: no stone will be left unturned in order to successfully convey the Ethereum Computer's and Universal Sharing Network's narrative.

# Distribution

## Partnerships

The first partnerships we will want to establish are with manufacturers of smart locks that do not have the form factor required in order to on-board the Ethereum technology. This would include smart padlocks, offices and home door locks, as well as large domestic electrical goods that would benefit from being shared (everything from 3D printers to washing machines).

In their simplest form, these partnerships will be a matter of getting the manufacturer's approval, some marketing collaterals such as joint press releases, and a custom interface as part of the Slock.it Snappy App, which could include custom graphics and a custom smart contracts better representing the object being accessed.  We expect manufacturers to be very receptive to this approach, as there is no risk or investment on their end and a sizable upside in the form of incremental revenue and use of their product.

More advanced partnerships could include deeper integration as part of the partner's product: for example, certain categories of hardware require start-up time before they become available to users (coffee machines, computers, etc). In these cases, it would be inconvenient to switch the hardware in question on and off repeatedly, instead an integration with the logic of the object itself would be needed. We expect such partnerships to be far more involved to set up, as they require time, effort, and R&D investment on the part of the manufacturers.

As partnerships represent a significant resource investment with the potential for a large upside, a dedicated Partnership Manager will be hired.


## Logistics

Distributing a new product internationally is no small challenge. We understand the importance of delivering on the promised fulfillment dates, and we are well aware of the difficulties of getting a product from its warehouse in China to the home of its new owner.

We will hire staff dedicated to distributing the Ethereum Computer and the automation of the fulfillment process. They will oversee the supply chain, optimize international shipping and engage in agreements with sales managers internationally, well before the product has left the manufacturing lines.

The appeal of the Ethereum Computer will not be limited to early adopters, and for this reason we will strive to make it available for sale in all expected consumer electronic marketplaces including Amazon, Best Buy, Newegg, etc. Channel management companies

will be hired to manage this process, getting the Ethereum Computer on the shelves of big-name retailers wherever possible.

## Prototypes

Slock.it UG will make a number of prototypes available to early adopters that can demonstrate an active engagement in the development of related apps and have the intention and proven capabilities to deploy these apps on the Ethereum Computer. Applications to receive a prototype can be submitted by contacting [info@slock.it](mailto:info@slock.it).

# Education

The Ethereum Computer—being a developer's platform—is likely to have some of its best use cases discovered by the community. For this to happen, developers will need easy and instant access to meaningful and complete documentation.

## Ethereum Computer Documentation

We want to make it possible for anyone to reproduce most of the Ethereum Computer's configuration at home, without having to purchase the commercially available version. For example, we will ensure that an image corresponding to a recent version of what is running on the commercially available Ethereum Computers can be downloaded from a publicly accessible website.

## Software Documentation

We will create sufficient documentation for anyone to design, build and distribute new applications on top of the Ethereum Computer platform. This will of course include Slock.it Snappy App tutorials but also more generic tutorials on how to create smart contracts that can interact with physical objects.

# Maintenance and Support

Slock.it UG intends to provide support for the Ethereum Computer in the form of regular updates from its public launch date onwards. Both support and updates would only come to an end if the smart contract defining the relationship between The DAO and Slock.it UG was to be invalidated, for example in the event The DAO no longer upheld its side of the terms, effectively releasing Slock.it UG from its responsibilities as a Contractor.

Updates to the Ethereum Computer will come in the form of automated (but optional) downloads and will include bug fixes as well as new features.

Support will be provided to end users who have purchased an Ethereum Computer through authorized distributors. Support will take the form of:

- Access to the current documentation of the Ethereum Computer, including tutorials and examples.
- Access to all of the source code for the software deployed as part of the Ethereum Computer official image.
- Unlimited, 24×7 access to the community-driven public support forums.
- Unlimited, 24×7 access to the chat room monitored by Slock.it UG development and support teams.
- Limited email-driven incident support as detailed as part of a standard support SLA (Service Level Agreement) which will include Hours of Availability, Response Time, Exclusion and Responsibilities for both Slock.it UG and the Customers.
- Making available paid, extended support contracts which will include telephone support to customers having opted to sign up for such a service.

# Proposal Scope

In order to make this Overview available before The DAO's Creation phase has completed, we had to make a number of assumptions which will be used as guidelines for Slock.it UG's use of revenue.

**The following scenarios therefore DO NOT represent cost estimates. The feature set of the final Proposal smart contract will depend on the amount of ETH received by The DAO and the percentage of that amount that they would like to dedicate to the Slock.it Proposal to build the Universal Sharing Network and the Ethereum Computer.**

Implementing the Universal Sharing Network, the Ethereum Computer and their related software applications will take approximately 24 months, depending on which scenario The DAO opts for.

**It's only upon the completion of The DAO's Creation Phase that Slock.it UG or any other Contractor will be in a position to create a final Proposal smart contract with a set cost.**

Note that all Proposals will be denominated and paid in ETH. Slock.it UG's will carry the risk of ETH volatility as its success is tightly bound to the success of the Ethereum network itself.

| | Scenario 1 | Scenario 2 | Scenario 3 |
|---|---|---|---|
| **Chosen Strategy** | **Conservative** | **Balanced** | **Aggressive** |
| **Product Overview** | Product includes the minimum number of apps required to rent and operate locks. No extra apps.<br><br>No use of a TEE (Trusted Execution Environment) as part of the produced Ethereum Computer. | Product includes most of the features listed in this document. In addition to lock rentals, Inclusion of Mist, PoS mining and a user friendly development stack.<br><br>A TEE (Trusted Execution Environment) is included as part of the produced Ethereum Computer. | Product includes all the features listed in this document plus several aspirational ones depending on budget, including renting HDD space using IPFS, decentralized Oracles or similar. |
| **Hardware** | No frills, yet functional casing. Board is kept stock from an SoC reference design. Connectivity is limited to what modules can be sourced within budget. | Good looking case. PCB is customized to better fit a smaller form factor and add hardware functionality. Most common connectivity options are supported. | Amazing looking design conducted by an expert company in the field. Fully customized board includes all mainstream connectivity options. |
| **Software** | The Ethereum Computer boots into Ubuntu Core running the Ethereum framework. UX is functional and limited to the most important functions.<br><br>Applications are limited to the Sharing Economy vertical.<br><br>Companion apps are live on both iOS and Android and powered by Cordova.<br><br>Developer stack includes Ethereum and its dependencies and is updated regularly.<br><br>No R&D expenditure as 100% of the funds are | The Ethereum Computer boots into a custom UI powered by the underlying Ubuntu core OS. Attention to detail is given around the UX, especially around the core management console.<br><br>Apps are available via both the Ubuntu Core application store and the Mist app store.<br><br>Mobile apps are developed natively for both iOS and Android.<br><br>Basic internationalization is done in most common languages.<br><br>The development stack include Ethereum and | Custom interfaces are developed for most function in the Ethereum Computer based on the underlying Ubuntu Core OS. Great attention is given to maintain consistency and ease of use around every feature.<br><br>Further to the applications already provided by both the Ubuntu Core app store and the Mist app store, custom apps are developed and delivered to the Ethereum Computer via the standard update channel. This Includes aspirational apps such as IPFS drive shares.<br><br>Internationalization is supported for all the locales where the Ethereum Computer is distributed. |

| | | | |
|---|---|---|---|
| | solely used toward the building of the Ethereum Computer. | companion protocols such as Whisper.<br><br>R&D is assigned a budget to produce new iterations over The DAO model to streamline its functioning and provide a custom web interface for submitting / voting on Proposals. | Mobile apps are developed natively for both iOS and Android with an effort to integrate light clients.<br><br>The development stack includes Ethereum, all of its companion protocols as they are released as well as several third party protocols.<br><br>R&D is assigned a budget to produce new iterations over The DAO model leading to a DAO 2.0 where many of the Contractor tasks are transitioned towards a 'mechanical turk' model through incentivization via most crypto assets.<br><br>R&D also includes a budget line for contribution the Ethereum client used in the Ethereum Computer as well as upstream contributions to the Ethereum Framework for Ubuntu core. |
| **Marketing** | Branding is simple and effective. No outsourcing required.<br><br>Marketing is done via social media channels, inbound leads from journalists and participation in conferences where we have been invited. | Marketing gets its own budget with a strong branding at its core.<br><br>The social media marketing and conferences buzz is complemented by hiring a dedicated PR agency to promote the Ethereum Computer to the general public. | Marketing gets its own department, and branding is kept homogenous across all areas: software, hardware and PR.<br><br>An elite PR agency is recruited to formulate a consumer electronic solution palatable to the general public. Printed and video ads are purchased.<br><br>A large portion of the remaining revenue goes towards promoting the Ethereum Computer and the Ethereum technology into the mainstream media. |
| **Distribution** | Partnerships are kept to a minimum as all focus is given to the objects that already integrate with the Ethereum Computer on-board communications protocols.<br><br>A standard GUI to rent and share compatible objects is created and used throughout all integrations.<br><br>Distribution is done through a website and affiliates wherever possible. | Partnerships are struck wherever possible with the view to onboard the technology with the larger smart objects players.<br><br>Custom interfaces to access the most common locks are deployed, replacing the standard GUI where possible.<br><br>Distribution is done through a website and via partners. Distribution and logistics are assigned a dedicated staff to optimize | Partnerships take a front seat as part of the Ethereum Computer strategy, aiming to integrate the Ethereum Computer technology directly into as many objects as possible to maximize its returns.<br><br>Custom interfaces with partner-vetted branding becomes the norm with custom graphics depicting deep integration.<br><br>A dedicated team is assigned to logistics, managing the supply chain process across as many |

| | | | |
|---|---|---|---|
| | Prototype boards are shipped in small numbers to core partners. | international shipping.<br><br>Prototypes are distributed to core partners as part of a feedback program before the product is finalized. | countries as the budget will allow. All online electronic stores are targeted. Promotional deals are struck with physical retails including in-store branding.<br><br>Prototypes are distributed according to a coherent alpha/beta/RC program to core partners and detailed statistical feedback forms the basis of the product's evolution. |
| **Education** | Documentation for both the Ethereum Computer and its software are kept to the bare minimum.<br><br>It's possible to easily install an image on off-the-shelf hardware to build DAO-compatible products. | Solid documentation is generated for both the Ethereum Computer and its software, making it simple to build DAO-compatible products.<br><br>Software documentation includes generic use cases on how to integrate various objects to the blockchain and The DAO smart contracts. | Extensive, multi format documentation is generated in multiple languages and formats.<br><br>Software documentation includes tutorials, guidelines and APIs.<br><br>Interactive video tutorials on how to integrate smart objects to the blockchain are created where budget allows. |
| **Maintenance** | Regular security updates are provided to the Ethereum Computer throughout the smart contract duration.<br><br>Support is provided to people who purchased the Ethereum Computer exclusively through public documentation and paid extended support contracts. | Regular security and features updates are provided to the Ethereum Computer throughout the smart contract duration.<br><br>Community-driven public support forums are created.<br><br>Public access to a chat room by a support staff is provided.<br><br>To Ethereum Computer buyers, SLAs are established for limited email-driven support.<br><br>Paid support tiers are implemented. | A dedicated support team is put in place to support stringent, 'best in class' SLAs to all Ethereum Computer buyers.<br><br>Regular security and extensive features updates are provided to the Ethereum Computer throughout the smart contract duration.<br><br>A public support forum is created, and run by Slock.it UG staff.<br><br>Unlimited, 24×7 access to a chat room monitored by Slock.it UG development and support teams is put in place.<br><br>Paid support tiers are implemented. |
| **Payment Schedule** | For all scenarios, we envisage a deposit to protect Slock.it UG from eventual ETH volatilty and the initial deployment of the business unit, followed by monthly payments until completion of the project. The DAO is free to stop any and all payments at anytime, for any reason. | | |

# Impact on DAO Tokens' Valuation

DAO tokens are unique in the digital currency space. Every DAO token is backed by ETH upon Creation, yet the DAO tokens' Creation model is deflationary by design. DAO tokens will only be created once, during the Creation phase, and subsequently they are destroyed upon splits or wallet losses. DAO tokens also are the key to the revolutionary governance structure of The DAO. Anyone that wants to create Proposals, vote, or influence The DAO in any way will need to obtain DAO tokens to do so.

Our Proposal intends to add even further intrinsic value to DAO tokens thanks to two added features derived from the Universal Sharing Network:

**Rewards generated by transactions on the Universal Sharing Network**

When ETH is sent to a Contractor, it is done under specific terms. In the case of this Proposal, we are offering to build the Universal Sharing Network for The DAO which will generate rewards for DAO Token Holders in the form of ETH or other Ethereum based digital currencies (potentially DAI, DGX, etc). These rewards will be sent directly to The DAO from every device that requests a value transfer on the Universal Sharing Network. These rewards can be used to either support further Proposals or they can be distributed proportionally back to DAO Token Holders.

While in no way binding, tentative revenue projections can help understand the potential of this Proposal. For example, there are currently 2 million Airbnb rental property listings in existence (Source: DMR), and the total bookings value was USD $2.2 billion in the last quarter of 2015 (Source: WSJ). If the Universal Sharing Network was only to aid in the rental of 5% of the Airbnb listings—allowing their users to have trustless key management—and the DAO% was set to 1%, The DAO would receive USD $4,400,000 in rewards per year from just that application of the network alone.

**Encouraging the use of DAO tokens as the favored means of exchange on the Universal Sharing Network**

DAO tokens represent membership in The DAO and as such, DAO Token Holders are effectively benefactors of the Universal Sharing Network. It is only fair that when used as payment on the Universal Sharing Network, DAO tokens will not be charged the DAO%.

This feature will create a powerful use case, generating even further demand for the deflationary DAO Tokens. While we do not imagine the average users of the Universal Sharing Network will hold DAO tokens just to save 1% on rentals, it is possible that third

party services (e.g. credit card payment processors) might choose to accumulate DAO tokens and use them on their backend to achieve a competitive advantage.

In fact, we don't imagine the average user will want to hold ETH, DAO tokens or even BTC to participate in the Universal Sharing Network. While the back end of the network is using the Ethereum blockchain, the customer facing front end of the network will ideally use national currencies to attract a large user base. We expect to make partnerships with payment processors in important jurisdictions very early on while building the Universal Sharing Network. These payment processors will likely want to use DAO tokens to avoid the DAO%; if they do, the added demand on the DAO tokens could affect the valuation of DAO tokens favorably.

# Communications

The Project Manager will take the lead role in ensuring regular and appropriate communications.

A monthly update on the project will be provided on our blog at http://blog.slock.it. This update will cover progress toward specific milestones, announcements and general information regarding the project.

A Slack channel "#DAO" available via http://slack.slock.it:3000 has already been created to manage instant communications. There will be no restriction as to whom can participate in this channel. We intend to be able to answer all questions on this channel within one working day. An archive of all messages from the channel will be found at http://slack.slock.it/archive/.

Changes in the scope of the project, if any, will be discussed in the aforementioned slack channel and then detailed as part of the monthly update.

Support questions for Ethereum Computer owners will be handled via a helpdesk mapped to the support@slock.it email address and we will aim to answer them within 2 working days.

General inquiries regarding the project can be sent to info@slock.it.

# Staffing

The resources made available by Slock.it UG will include a dedicated Business Unit composed of a multidisciplinary matrixed team of Project Managers, Software Engineers,

Electronic Engineers, Distribution Specialists, Graphic Designers, UX/UI Designers, Partnership Managers, Quality Assurance Specialists, Marketing resources (including PR agency) and an administration team.

The project will require all Business Unit members for the entire duration of the project although levels of effort will vary as the project progresses. The Project is scheduled to last 18-27 months with standard 40 hour work weeks (depending on which scenario is selected—see "Proposal Scope" section).

# Licensing

Slock.it UG will make all the code, smart contracts, user interfaces, applications, and everything forming the output of this Proposal free and open source under the MIT license.

# Risk Mitigation

Every effort will be made to proactively identify risks ahead of time in order to implement a mitigation strategy from the project's onset. Our team will leverage a methodical process by which the various risks are identified, scored and ranked.

The most likely and highest impact risks were added to the project schedule to ensure that the assigned risk managers take the necessary steps to implement the mitigation response at the appropriate time during the schedule.

As part of our agile development methodology principles, Project Managers will provide status updates on their assigned risks in the daily stand-up meetings.

# Risks Register

## Team

The project depends on a relatively small team of experienced developers in a brand new vertical: the Blockchain. Because of this, there is a risk that departures from the core team could negatively affect the project delivery. In order to mitigate this, we will:

- Staff the project using members from matrixed teams, allowing us to temporarily pull resources from other projects should the need arise and until a replacement is found.
- Ensure that all core staff are full-time staff under contract with extensive notice periods (3 months at a minimum)
- Employ a policy of continuous identification and recruitment of talent in order to minimize the duration of any staff shortage wherever possible.

## Reliance on third party providers

While we intend to minimize our reliance on third-party providers wherever possible, the project includes elements of a hardware nature and therefore will inevitably involve the use of partners. In order to mitigate this risk, we will only engage with proven, reputable providers as part of relationships controlled by strict contracts and stringent SLAs.

## Inherent risks from using a blockchain

Blockchain Technology and Ethereum are new and untested technologies outside of our control. Adverse changes in market forces or technology could impact if not outright prevent the delivery of products or services described in this document.

## Unforeseen Delays

The blockchain space is an art, not a science. There are many unknowns currently facing Ethereum including scalability and the switch to Proof of Stake, to only name two. As both the Ethereum Computer and its Decentralized Applications rely entirely on the Ethereum blockchain, it's possible for unforeseen delays to happen and push back their release.

## Regulatory risks

Blockchain technology and Ethereum are allowing new forms of interactions between individuals and/or companies, some of them are still to be imagined and implemented. Like with the appearance of digital currencies such as Bitcoin, it is very likely that specific regulations will be set in different jurisdictions targeting blockchain technology and more specifically DAOs. These regulations may or may not be DAO friendly and some might even forbid any relationships between an individual or company and a DAO.

# Terms

This document does not constitute a formal commercial Proposal and is provided "AS IS" and for educational purposes only. The terms located in the smart contract at address `TBD` on the Ethereum blockchain supersede any undertaking, promise, assurance, statement, representation, warranty or understanding, including but not limited to any and all interpretations of this document.

Third Party Content may be made available directly to you by other companies or individuals under separate terms and conditions, including separate fees and charges. Because we may not have tested or screened the Third Party Content, your use of any Third Party Content is at your sole risk. We do not accept liability for any fees incurred or damages caused by your use of any Third Party Content. We do not guarantee the availability of any Third Party Content for any purpose. We do not guarantee the accuracy or precision of any information provided to us by any third party, including, without limitation, network information, pricing information or other statistical data. We may change, discontinue, or deprecate any of the Third Party Content.

WE AND OUR AFFILIATES AND LICENSORS MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY OR OTHERWISE REGARDING THIS DOCUMENT OR ANY THIRD PARTY CONTENT, INCLUDING ANY WARRANTY THAT THIS DOCUMENT WILL LEAD TO THE DEVELOPMENT OF PRODUCTS OR SERVICES.

IN ADDITION, WE AND OUR AFFILIATES AND LICENSORS MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY OR OTHERWISE THAT ANY PRODUCT OR SERVICES DELIVERED, IF ANY,  WILL BE UNINTERRUPTED, ERROR FREE OR FREE OF HARMFUL COMPONENTS, OR THAT ANY CONTENT, INCLUDING YOUR CONTENT OR THE THIRD PARTY CONTENT, WILL BE SECURE OR NOT OTHERWISE LOST OR DAMAGED.

EXCEPT TO THE EXTENT PROHIBITED BY LAW, WE AND OUR AFFILIATES AND LICENSORS DISCLAIM ALL WARRANTIES, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTORY QUALITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR QUIET ENJOYMENT, AND ANY WARRANTIES ARISING OUT OF ANY COURSE OF DEALING OR USAGE OF TRADE.

# Signature

This Proposal document purposely omits a signature section as it's provided solely as a convenient plain english interpretation of the smart contract at address TBD located on the Ethereum blockchain.

All DAO Token Holders are invited to accept or reject the smart contract at address TBD located on the Ethereum blockchain before the expiry of the 14 calendar days debating period, starting from the time of the smart contract submission.

It is The DAO's responsibility to establish whether or not this Proposal document is an accurate representation of the aforementioned smart contract terms.