The CUI Marketplace & Platform for the Next Interfaces to Business & Blockchain

SEED Vault Ltd. is a public Company Limited by Guarantee in Singapore UEN: 201731433H
The world is moving to Conversational Interfaces (CUIs) for digital services and will largely supplant The Web on mobile, desktop, car, & home systems—including the blockchain. (See Appendix 1 for Growth)

CUIs are more difficult to build than webpages, requiring Machine Learning (ML and AI) services: there are few standards and no open source platform solutions.
CUIs are the front-end to ML/AI backend technology. Like the Web, both are required for effective solutions and creating new opportunities. However, little development has been put into the front-end of this new paradigm while a lot has been put into AI.

Increasingly, sophisticated technologies, like blockchain, will require equally sophisticated solutions, like CUIs.
The Conversational AI market is controlled by Amazon, WeChat, Facebook, Google, and about 6 other companies (the FAAATMBAs). They compete against their own marketplace vendors to own all customer relationships.

The resulting re-intermediation of customer relationships threatens every brands’ value.
Only organizations who own their customer and citizen relationships will derive value from them. If they don’t have the financial and technical resources which AI requires, they cannot scale.

An open-source, independent solution for conversational AI is needed by every company, government, non-profit, and individual.
CUIs must be capable of secure financial transactions of all kinds. This requires a new system with Trust at its core.

In addition, people will need the ability to manage the privacy and security of their personal data (contact, search, location, transaction, financial, health, sentiment, etc.).
Solutions need to support multiple modes and allow vendors to present their own brands.

<table>
<thead>
<tr>
<th>Developers</th>
<th>UI Modes</th>
<th>White Label Service?</th>
<th>Independent?</th>
<th>Competes with Vendors?</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEED</td>
<td>2M independents</td>
<td>Text, Voice, Avatar</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Amazon Alexa</td>
<td>50,000 global devs 6,000 employees</td>
<td>Voice</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Cortana (Microsoft)</td>
<td>N/A (Alexa integrated)</td>
<td>Text, Voice, Avatar</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>OK Google</td>
<td>200,000 global devs 400M Devices</td>
<td>Text, Voice</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>WeChat (Tencent)</td>
<td>1.5M global devs</td>
<td>Text</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Siri</td>
<td>?</td>
<td>Text, Voice, Avatar</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Bixby (Samsung)</td>
<td>4,000 - 5,000 global devs</td>
<td>Text, Voice</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Facebook M</td>
<td>over 1M global developers</td>
<td>Text</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Alibaba</td>
<td>?</td>
<td>Text</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
Global enterprises have engaged with SEED and partner companies to develop and deploy conversational AI systems. New funding will allow increases in sales, onboarding, and templates for a range of licensing models.

These companies are currently in our pipeline:

**Our Developer Communities are composed of:**
- Two million bot developers across 35 countries.
- 800 companies have expressed interest in partnering.

**Our Deployer Communities map to the developed supply:**
- >500 companies exploring deployment in:
  - Education
  - Hospitality
  - Financial Services
  - Mobility
  - and others
SEED is an independent, open-source network for developing and managing trusted, multimodal conversational AI.

- Coordinates for the global chatbot community
- Fairly rewards contributors of value including: developers, deployers, data providers, service providers, analysts, and end-users
- Decentralizes rating, reputation and governance systems for dPaaS model
- Allows stakeholders to own their own data
- Self-governing of “bad actor” bots & people
- Provides decentralised content licensing model

The SEED platform includes 17 patents,* multiple tools, and other IP for free, licensed use to all.

*see Appendix 2 for patents list
SEED is built as a **public permissioned blockchain** with Ethereum technology to achieve the optimal balance between scalability and security. **This allows the platform, providers, & bots to be trusted.**

- Affordable, high performance smart contracts using the Ethereum Virtual Machine (EVM)
- Proof of Authority consensus: using a diverse group of independent validators
- Tokens available as ERC20 on the public Ethereum blockchain, with a bidirectional bridge to SEED. Interoperable with other tokens.
- Upgrade to a blockchain interoperability network once these have matured (ie., Polkadot).

Blockchain solves problems AI introduces:
- Provenance & Ownership
- Open Source financial models
- Quality & Democratization of data
- Identity, Authentication & Verification
- Public remuneration
- Poor interfaces
<table>
<thead>
<tr>
<th>Project</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEED Token and Blockchain</td>
<td>In operation, <a href="#">demo on website</a>, <a href="#">GitHub</a></td>
</tr>
<tr>
<td>SEED Network</td>
<td>In network testing</td>
</tr>
<tr>
<td>SEED Bot</td>
<td>1.0 in operation &amp; <a href="#">running on website</a></td>
</tr>
<tr>
<td>SEED Bot Enhancements</td>
<td>Additional features in development</td>
</tr>
<tr>
<td>SEED Wallet</td>
<td>In operation</td>
</tr>
<tr>
<td>SEED Greenhouse</td>
<td>In operation, enhancements in development</td>
</tr>
<tr>
<td>SEED Communities</td>
<td>In development</td>
</tr>
<tr>
<td>.BOT file format (standard)</td>
<td>1.0 specs delivered, <a href="#">GitHub</a></td>
</tr>
<tr>
<td>.FLOW specification (standard)</td>
<td>In development, <a href="#">code in GitHub</a></td>
</tr>
<tr>
<td>ACTR 1.0</td>
<td>In operation, demo website, <a href="#">code in GitHub</a></td>
</tr>
<tr>
<td>Hadron 1.0</td>
<td>In operation, demo website, <a href="#">code in GitHub</a></td>
</tr>
<tr>
<td>Authors Tool</td>
<td>In beta</td>
</tr>
<tr>
<td>Rhizome (Platform Middleware)</td>
<td>In operation, optimizing performance, <a href="#">GitHub</a></td>
</tr>
<tr>
<td>Mobile &amp; Web Client</td>
<td>In testing</td>
</tr>
<tr>
<td>Analytics Tool</td>
<td>In development</td>
</tr>
<tr>
<td>AML Wrapper</td>
<td>In development</td>
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</table>
SEED raised ~$3.3M in early 2018 and US$500k in 2019 via token pre-sales. We’ve used that funding for development through 2019. After this, SEED will earn revenue primarily via **platform transaction fees, licensing & reporting**.
SEED earns revenue from several sources, as needed, and as demand grows with network use:

- 40% Direct API licensing fees
- 40% Transaction fees for network use
- 15% Professional support services
- 5% MetaData and ML model licensing
- 5% Donations and research support

This is subject to variation, as the ecosystem grows. We also anticipate emerging models of licensing revenues.
SEED will reduce tax rates as the economy grows and creates sustainable income.

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>End-users</strong></td>
<td>1K</td>
<td>10K</td>
<td>75K</td>
</tr>
<tr>
<td><strong>Economic Activity</strong></td>
<td>$0</td>
<td>$5M</td>
<td>$15M</td>
</tr>
<tr>
<td><strong>Transaction Fee Rate</strong></td>
<td>0</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td><strong>Trans. Fee Revenue</strong></td>
<td>$0</td>
<td>$0.25M</td>
<td>$0.75M</td>
</tr>
<tr>
<td><strong>Platform Costs</strong></td>
<td>$0.5M</td>
<td>$0.75M</td>
<td>$1.0M</td>
</tr>
<tr>
<td><strong>Profit (from taxes only)</strong></td>
<td>($0.5M)</td>
<td>($0.5M)</td>
<td>($0.25M)</td>
</tr>
</tbody>
</table>

- Poss. IEO
- 1K devs
- 100 bots
- Cash Positive
- 7000 devs
- 7000 bots
- 200K devs
- 200K bots

- 1K devs
- 100 bots
- Cash Positive
- 7000 devs
- 7000 bots
- 200K devs
- 200K bots
Founding Background of Experienced Professionals

The founders are a unique group of world-leading experts in blockchain and AI development:

- **Nathan Shedroff**, CEO & Co-Founder. 30 years experience as executive and thought leader in the interactive industry. Founder of 4 companies (2 exits). Author of ten books.

- **John McKnight**, CTO & Co-Founder. 30 years engineering experience in distributed systems, including 3 in blockchain. Past work at Apple, Google, Twitter & Coinbase.

- **Mark Stephen Meadows**, Trustee & Co-Founder. 20 years experience in VR and AI, 7 in blockchain. Past work includes Xerox-PARC, Stanford Research Institute. Founder of 3 companies (2 exits). Author of three books and over a dozen related patents.

- **Michelle Katz**, Trustee & Co-Founder. 32 years licensing and IP ventures, last 19 in technology, character and entertainment licensing in both analog and digital media.

- **Thomas Schulz**, Director of Partnerships. 14 years building communities, businesses and partnerships within the CUI and chatbot industry.

- **Steve de Brun**, Director of Marketing. 25 years experience in marketing and design in technology startups.
The executive team have each held management positions at major technology capitals and have deep experience building, executing, and delivering on past promises. Each person brings a strong network that touches all continents and contributes to a powerful economy to rival Alexa and other CUI ecosystems.
The Trustee Board of the SEED Foundation is represented by members from around the globe that are alert to issues of governance and international legislation.

Our Advisory Board both influences and forecasts technologies. With representatives from Microsoft, AIA Insurance, Kickstarter, Pandorabots these advisors guide SEED on a quarterly basis to best navigate the emerging landscapes of technology, business, finance and cutting-edge strategy.
10 Billion Tokens

Use of funds:
- Harden and enrich SEED's codebase
- Build reference client base, applications & content
- Fund development prior to initial public distribution
- Recruit and build developers and ecosystem partners committed to adoption
- Community management
- Develop .BOT protocol & language
- Extend existing bot framework with new tools
- Operate the foundation and ecosystem activities
- Integrate with AML wrapper
Seed Vault Ltd.

- **Nathan Shedroff, CEO**
- Funding: contributions@seedtoken.io
- Partnerships: partners@seedtoken.io
- Technical questions: ask@seedtoken.io

www.seedtoken.io

www.github.com/SeedVault

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By 2020: AI and CUI assistants will be widely used
~50% customer service
~40% sales service (Forrester, Gartner)

By 2021: The CUI market will grow from $3B to $20B
(Gartner Research)

By 2022: AI will obviate 47% of jobs, yet create 58M new ones. Enterprises need AI interfaces. (World Economic Forum report)

By 2023: CUIs will be responsible for over $8B/yr savings (Juniper)

CUIs need authentication. Valuable data transactions (financial, health, etc.) must be trusted. Chatbots have impacted American, English, and French national elections Because there are more bots on the Internet than people unauthenticated bots pose threats via scams, spam, phishing, and other attacks. (Forbes)
As an enterprise (B2B) platform, SEED will expand via both global developer groups and large customers in key markets (financial services, telecom customer service, mobility and healthcare). As with all platforms, our biggest obstacles are funding and adoption.

By providing high quality CUIs and voice assistants at a drastically reduced price, without the threat of competition from the platform, itself, we’re building a solution that disrupts the current market. Simultaneously, we’re building a platform that compensates deployers, developers and even end-users. By allowing developers to set their licensing fees, the platform becomes preferential to them. They will bring more customers into the ecosystem.

SEED uses blockchain to monetize open-source—a first in the conversational AI market.

SEED provides an alternative to Alexa and other CUI platforms by offering full-stack services, platform licensing, and blockchain/financial integration. Our customers (both enterprises and developers) are already incentivized by the current market as they need a platform for conversational services that doesn’t compete with them nor re-intermediate their customer value.

SEED is the only current solution to the conversational interface portion of a Web 3 ecosystem. It integrates user data, privacy, and analytics services while preserving companies’ relationships with their own customers. SEED’s financial model doesn’t deplete customer value and keeps companies in control of their customer relationships.

SEED scales by providing API services and tools to all parts of the network, simultaneously, as Linux and HTML/TCP-IP demonstrated, providing quality resources for developers & users.
Patents Licensed from Botanic Technologies and other partners:

- **SYSTEMS AND METHODS FOR VETTING AND AUTHENTICATING THE IDENTITY OF AN AVATAR; #9,253,183 B2:** Methods for taking natural language input, identifying meaning and generating a response via text interface.
- **SYSTEMS AND METHODS FOR NATURAL LANGUAGE PROCESSING, 11682813:** Methods for taking natural language input, identifying meaning and generating a response via text interface.
- **SYSTEMS AND METHODS FOR MANAGING A PERSISTENT VIRTUAL AVATAR WITH MIGRATIONAL ABILITY; 11560743:** Methods for allowing an avatar to migrate between multiple platforms, follow a user and retain persistent states.
- **SYSTEMS AND METHODS FOR AN AUTONOMOUS AVATAR DRIVER; 11960507:** Means of using NLP and authentication to provide a visual representation of an autonomous conversational avatar.
- **SYSTEMS FOR EXECUTING CRYPTOGRAPHICALLY SECURE TRANSACTIONS USING VOICE AND NLP, 14668882:** Methods for completing sales transactions via NL such as selling/purchasing tickets, vouchers, physical goods, etc.
- **AUTONOMOUS BOT PERSONALITY GENERATION AND RELATIONSHIP MANAGEMENT, 125128-8006:** Methods of videoconference with an avatar and generating personality via words, sounds, gestures and appearance.
- **METHODS FOR DEVELOPING A BOT KNOWLEDGEBANK VIA SOCIAL EXPERT-LEARNER INTERACTION, (FILED 2017):** Ecosystem model to facilitate experts and learners information exchange.
- **SYSTEMS FOR SECURING CONVERSATIONS VIA AUTHENTICATED BOT AND DUAL-KEY ENCRYPTION, (FILED 2017):** Nested envelopes and dual-key SHA encryption for delivering secure messages to an authenticated bot or third party.

*(NOTE: eight additional relevant patents within WIPO & PCT jurisdictions including EU, JP, AU, CA and IN. Details available.)*
<table>
<thead>
<tr>
<th><strong>Application Level:</strong></th>
<th>CUls for every industry (starting w/financial, customer, and healthcare services)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client Level:</strong></td>
<td>SEED Wallet (user &amp; developer), SEED Greenhouse (Bot Store), Other Media Stores</td>
</tr>
<tr>
<td><strong>Interop Level:</strong></td>
<td>Rhizome Middleware &amp; APIs, .BOT, .FLOW, ACTR, HADRON, Mobile Client</td>
</tr>
<tr>
<td><strong>Services Level:</strong></td>
<td>APIs, SEED Blockchain, AML Wrapper</td>
</tr>
<tr>
<td><strong>Protocol Level:</strong></td>
<td>Integration w/ETH &amp; Other Blockchains</td>
</tr>
<tr>
<td><strong>Primitives Level:</strong></td>
<td>International Governance Model, Proof of Authority, Revenue/Business Model</td>
</tr>
</tbody>
</table>