



Global Cannabis Applications Corporation

Creating a global, secure, trusted store of medicinal cannabis information to
create improved health outcomes for all patients

A Global Community for Medicinal Cannabis Users, Researchers and Practitioners

White Paper

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Executive Summary

Medicinal cannabis offers a wide range of health benefits. However, because cannabis has been illegal for the past 70 years in most jurisdictions, there is a lack of valuable consumer information. Moreover, practitioners are often poorly informed of the benefits of medicinal cannabis and hence tend to under-prescribe it.

There currently exists a unique opportunity to build an end-to-end technology platform and solution to collect and aggregate valuable user, clinical, research and product data on medicinal cannabis effectiveness, dosage, product development, consumption and consumer behavior.

GCAC is delivering that solution via the Citizen Green Community.

GCAC will use the power of proven technologies such as blockchain, AI and mobile apps to incentivize the capture, analysis and use of the best medicinal cannabis dataset in the world.

GCAC's goal is to help create a global dataset that identifies the best medical cannabis products by efficacy for a particular ailment.

The information economy that results will bring together medicinal cannabis users, medical practitioners, researchers, retailers, manufacturers and regulators. Consumers will interact with the community using beautifully designed and built mobile apps.

In order to incentivize data capture, manage access and enable people to be rewarded when their data is used, GCAC will use blockchain technology, cryptocurrency and smart contracts to create a marketplace for medicinal cannabis information. This means that consumers earn tokens for contributing their information and others need to spend the same tokens to access and utilize the data.

Tokens available in this medical data economy will either be granted or purchased to generate and access data, and we expect growing demand for the platform and data services from a wide range of practitioners, researchers, regulators and producers and vendors of medicinal cannabis products.

Medicinal cannabis will be the lead out for a broader medical data collection, aggregation and dissemination platform for other pioneering treatments that have the potential to disrupt the pharmaceutical industry and lead to better patient treatments and outcomes through transparency and trade.



The Medicinal Cannabis Information Opportunity

Cannabis has been well known for centuries for its medicinal benefits, including pain management, seizure remediation, muscle spasm management and a range of other benefits. However, over the past century, cannabis has been a proscribed substance and generally treated as a law-enforcement challenge.

With a large number of countries having legalized medicinal cannabis usage, the legal medicinal cannabis market is projected to grow in value to USD \$55.8 billion by 2025. However, the previous illegality has left the medicinal cannabis industry with a dramatic shortfall of information.

As a result of the history of cannabis, there is a lack of well-researched medical data, and anecdotal user information is scattered and unverified. As little as 6% of cannabis research has focused on its benefits, and it has historically been very difficult to get approval for properly controlled cannabis studies.

Given the lack of research and quality user information, doctors and other practitioners don't have trusted information on which to base clinical decisions, and regulators lack long-term information.

On the consumer front, while there are multiple places to find user feedback on the effects of cannabis (e.g., Leafly, Weedmaps, Massroots) that feedback is often a mix of both medical and recreational experiences. There is almost no centralized source of information available, and the lack of respected forums amongst the general population and stigma attached to cannabis use have dissuaded many users from sharing their experiences.

As such, to date, there has been no reliable way to incentivize users to provide such information.

All of these factors have led to significant under-prescription of medicinal cannabis and a large, unfulfilled demand for quality research, new product delivery and consumer information on its uses and effects.

There currently exists a unique opportunity to build an end-to-end technical platform and solution to collect and aggregate valuable user, clinical, research and product data on medicinal cannabis effectiveness, dosage, product development, consumption and consumer behavior.

GCAC is delivering that solution via the Citizen Green Community.



The GCAC Solution: 360-Degree Medicinal Cannabis Information Economy

GCAC is creating an integrated data marketplace for medicinal cannabis information that will be called the Citizen Green Community.



The Citizen Green Community aims to easily facilitate the collection, analysis, aggregation, transfer and commercialization of medicinal cannabis information.

We do this in order to build knowledge and confidence in the medicinal cannabis industry, normalize prescription and use and grow the industry itself.

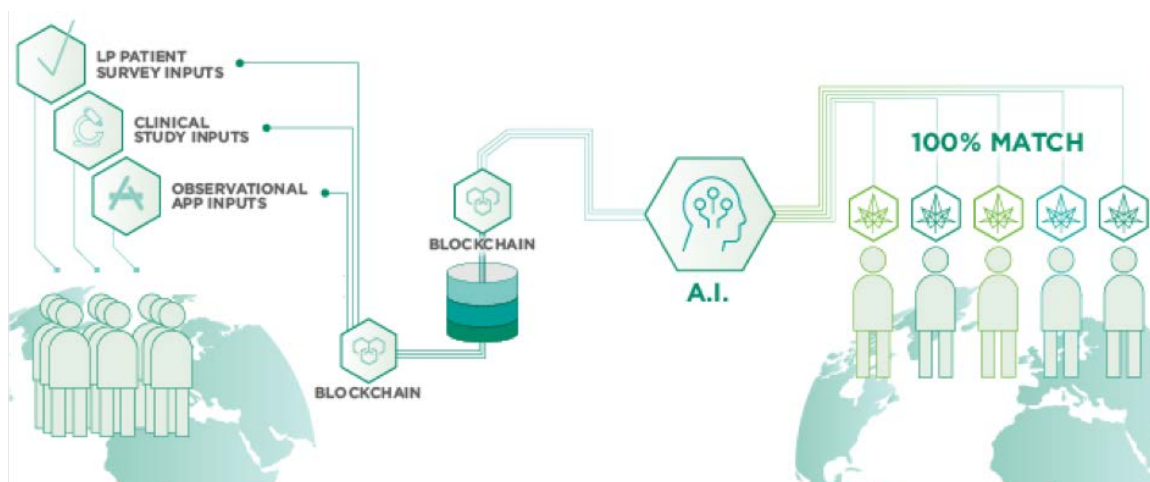
The Citizen Green Community is centered on individual users and encourages them to contribute their own experiences in order to build the store of anecdotal consumer experience. Individuals will also make use of all of the information generated in the community to improve their own confidence, knowledge and, ultimately, their health.

A wide range of other industry participants, including researchers, doctors, pharmacists, manufacturers, retailers and regulators will also contribute their research and information to the community and make use of the community's data to inform their own research and activities.

Every community or marketplace for data, in fact any entity that wants to collect experiential information, has a similar challenge: how to incentivize participation in the community. With multiple competing demands for time and information, it's hard to encourage people to contribute their information and reward them when they do. People are justifiably reluctant to give their information away when they cannot see how it will be used, or by whom.

The GCAC platform makes use of a Pain to Strain model to help retailers optimize product recommendations against efficacy and product margins.

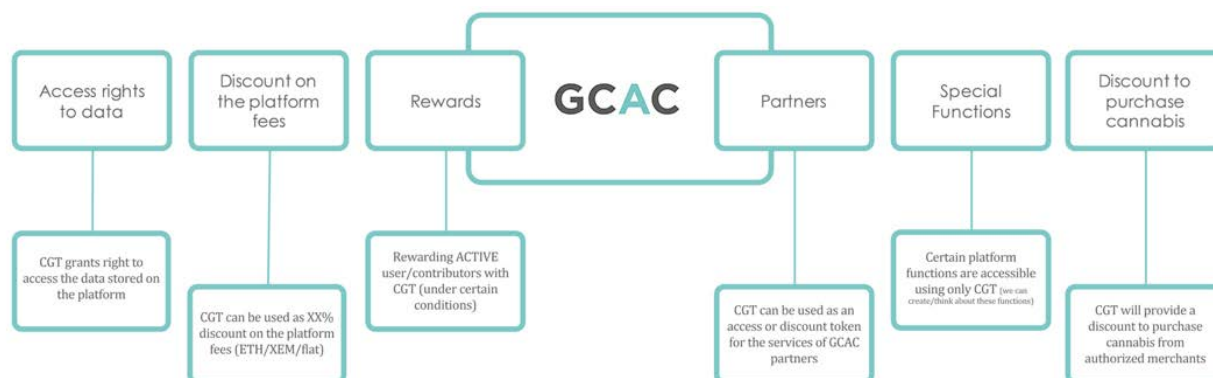




This challenge is a perfect application for blockchain technology and cryptocurrency. The reasons for this perfect fit are:

- a. A blockchain-based system allows people to accurately record the sharing of information and keep control of how it is used via off-chain solutions, and
- b. The cryptocurrency puts a value on the data that allows for an exchange of value.

Using this approach, data providers, particularly cannabis consumers, will be rewarded by the system with tokens for sharing their information. Others, such as manufacturers and retailers, might pay with tokens to share their information because doing so ultimately helps them make more – and better – sales. Still other users, perhaps doctors, may contribute clinical insights for free to assist the community, but may pay with tokens for certain clinical information (as they do for other existing medical databases).



The cryptocurrency tokens will provide the following utility to participants in the information marketplace economy:

- Access rights to experiential, clinical and analyzed data stored on the platform.
- Discounts on the platform fees that are charged to access data and which are normally paid using fiat currency.
- Rewards for active contributors and users of the medicinal cannabis data to incentivize quality data production.
- Access or discount tokens for the services or platforms of GCAC partners, such as cannabis retailers, pharmaceutical companies and governments.
- Exclusive access to certain platform functions, such as personalized artificial intelligence data.
- Discounts on the purchase of medicinal cannabis products, which will be a key element of the rewards program supported commercially and technically by dispensaries.



The overall effect is to turn this powerful information from all parts of the ecosystem into something that can be exchanged utilizing a transparent marketplace that sets the value of different kinds of information and allows people to both contribute and consume data.

The GCAC platform is coming to market as a number of jurisdictions are considering decriminalization and legalization of medicinal cannabis. This includes Lithuania, Canada, Australia, Germany and a number of states in the U.S. All of these jurisdictions, and others that are considering this approach, are seeking data to support the process. This is data that GCAC will be perfectly positioned to provide.

Technology Approach

The Citizen Green Community uses advanced technologies to capture, refine and continually build a smarter and more trusted medical cannabis database.

Our Technology Platform

App users earn Reward Tokens for sharing their data in the system. Tokens are deposited in an e-wallet, redeemable for CannaProducts in medical cannabis programs globally



From an implementation perspective, the community is enabled by the integration of several cutting-edge, proven technologies including:

- CannaCube – Equipped with world-class data encryption and storage, this GCAC database curates gold standard medical cannabis clinical study data and aligns it with anecdotal user-driven inputs.
- Mobile Apps – Prescriptii and CannaLife provide product knowledge and education on all things medical cannabis.
- Artificial Intelligence & Machine Learning – GCAC’s proprietary modelling algorithm validates medical product efficacy from multiple inputs, while Sanna, an AI chatbot, is designed to enhance the user experience specifically within the cannabis industry.
- Blockchain – To provide transparency and trust, GCAC employs a distributed ledger environment for tracking each data transaction. These transactions are the nucleus of GCAC’s cryptocurrency, the Citizen Green Token.



Mobile Apps – Where Users Are

The core of the Citizen Green Community is based on two mobile apps that provide access for all participants: CannaLife and Prescriptii.

Today, most of the population “lives” on their smart-phones. These devices are personal, always on, always connected and always with us. The apps aim to be friendly, easy to use and inviting, so that participants feel confident in the information they find there and comfortable about contributing their own information. Embedded into both CannaLife and Prescriptii is the Sanna chatbot. Sanna is designed to guide users through their app in an engaging and value-added experience. Data collected from Sanna helps round out the canna profile for each user.

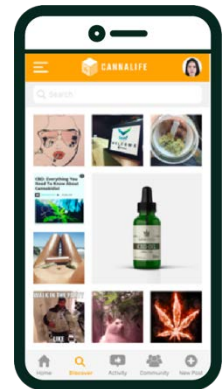
Connected by the CannaCube database, the two applications together will collect 360-degree data relating to medical cannabis production, research, prescription and usage, thereby aggregating the data into the CannaCube medical cannabis databases for processing by artificial intelligence.

CannaLife App

CannaLife is a native (iOS and Android) app for networking, sharing, providing peer-to-peer feedback and searching anecdotal and experiential data relating to cannabis products, interest, consumption and consumer behavior (“Raw Data”).

In essence, CannaLife is targeted at connecting non-cannabis users with medical cannabis users. CannaLife is the only medical cannabis app that utilizes the world’s first cannabis-specific Google search engine. Using screen capture technology, users can find information on medical cannabis, create a post and share it in specific communities with other like-minded users.

One of the key features of the app is an easy, friendly process for users to share their anecdotal experiences with different strains, products, delivery mechanisms and other variants of medicinal cannabis. In CannaLife, the Sanna chatbot helps guide searches for specific health issues or cannabis questions. This app aims to create a global online community interested in the uses and benefits of medical cannabis and keen to share stories and experiences.



Prescriptii App



Prescriptii is a native (iOS and Android) app for the medical cannabis license holder. It is a regionally based app that takes users through a series of ailment-related questions, matches those inputs against products in the CannaCube database and then directs the user to the product best suggested for them. As it is regionally based, users will only see medical cannabis products that are within a defined distance from them and will be able to identify the retailer carrying those products and where to find them on an interactive map. Prescriptii is both product and retailer agnostic and shows results based on efficacy of strains to treat a pain.

The Sanna chatbot helps users evaluate their experience with their cannabis prescription, evaluating what improved and any potential negative side effects. This information can then help the patient and their practitioner evaluate what to do next, while Prescriptii can make further recommendations.

Prescriptii users will receive tokens for submitting their information. Other users will either receive tokens for data submission or be charged for it. All users will be able to request datasets and will be charged in CGT for the data they consume.



Blockchain

The GCAC Blockchain is a distributed health, data and supply chain ledger managed by a trustless “peer-to-peer” network. The blockchain is the storage layer for recording the transactions associated with user interactions, including data capture, data requests, transactional information and the respective user wallets.

From the apps, the blockchain collects regulated supply chain data: licensed producers, manufacturers, researchers, registries, dispensaries, patients and medical professionals.

Blockchain applications provide strong proof of ownership (allowing users to maintain control over their own data), very high security and encryption and the ability to monetize non-fungible assets such as data.

A key facet of this monetization is the digital reward system in the form of CGTs (utility tokens) that creates credits for members of the community that are able to be used to reward medical data gathering and can be exchanged for data, products and certain discounts on products or platform fees.

The CGT Tokens are the basis of the Citizen Green Community information economy and are primarily intended to underpin consumer loyalty as well as incentivizing all participants in the ecosystem to take positive action. CGTs are earned in exchange for sharing medical cannabis data through GCAC apps and the user registry.

The tokens control origin information, data release and rewards via smart contracts. The smart contracts provide the binding of data access requests by consumers to creators with a set of parameters specified at contract creation time.

Artificial Intelligence

Artificial intelligence provides GCAC the ability to bring all of the data collected and managed to life. There are multiple applications of AI within the GCAC technology platform: an AI chatbot, advanced analytics, predictive analysis and machine learning tools.

The capabilities of the AI solutions to integrate and synthesize multiple data sources for consistency allow us to deliver the broadest range of research data sources, leading to better outcomes for patients and all other participants in the information economy. The AI-refined data allows contemporary and ongoing collected data to be added to the historical medical database, closing the data loop. Sanna, Citizen Green’s proprietary chatbot, was designed to use this decision tree to facilitate a better user experience in both apps. To generate a value-added experience, it helps gather missing information to create a clear medical cannabis user profile.

Database

CannaCube is a multi-dimensional, multi-level database that will provide a high performance big data storage solution for the blockchain and AI platforms to work together in a dedicated secure environment. This will centralize the storage for data collected by the mobile applications and the AI’s refined data. Data will be stored without identifying information but will retain an anonymized link back to the secure user storage. Both CannaLife and Prescriptii use CannaCube back-end and feed-up results in real time, thus always ensuring that users have the most up-to-date medical cannabis information.

The blockchain layer will manage data verification and security, so users are able to identify their own data, but no one else has access to the data without authorization. This interaction between a highly secure, national-security-grade storage network and blockchain access and ownership control is unique to GCAC and provides a highly responsive information economy for secure exchange of verified medicinal cannabis data.



Audience Characteristics and User Stories

There are a wide range of user groups who will be attracted to the Citizen Green Community and will participate in contributing, exchanging and using the highly structured and sophisticated dataset underpinning GCAC.

Key Audiences

The internal information economy of the Citizen Green Community is driven by both data creators (supply) and data consumers (demand), creating a valuable data exchange economy between:

- Patients (consumers) – Gain invaluable information regarding pain to strain correlations and benefit from potential improved pain management outcomes
- Researchers (at universities and laboratories) – Develop new studies based on historical data
- Clinicians (medical doctors across multiple disciplines) – Access patient information and reference guide for dosage/information on medical cannabis; develop increasing confidence and knowledge to facilitate prescription of medical cannabis for relevant conditions
- Pharmacies/Dispensaries – Use as a reference guide for dosage/information on medical cannabis
- Retailers – Learn what their clients like and dislike: product type, delivery system, strains, what is working and not working
- Suppliers (including licensed producers and product manufacturers) – Draw upon data for research and development
- Regulators – Find trusted data to bring products to market quicker and more efficiently

Indicative User Stories

User stories demonstrate some of the key drivers and actions that compel people to use, talk about and trade with services.

Eric – Chronic neck pain sufferer

Eric has had chronic neck pain since a car accident 12 years ago. He finds the pain quite debilitating and has not been able to hold down a proper job since his injury. At times, being on welfare and in constant pain has caused Eric to feel depressed and alienated.

He has tried many treatments, including physio and massage, but they are expensive and only give him temporary relief. Painkillers make Eric very moody and drowsy and seem to remove the pain rather than relieve it. He gets headaches and some dizziness when he is coming down, so he only uses them on days when the pain is really bad.

About four years ago, Eric's girlfriend suggested he take cannabis to help with his pain management. He thought about trying it and read about some of the benefits but didn't want to get in trouble with the law on top of his other problems. Based on what he had read, he felt sad that he couldn't get access to cannabis to try.

When Eric heard medicinal cannabis was going to be legalized, he started to do some research and got himself into an early clinical group. He started taking a vaporizer twice a day and got pain relief within a few days.

Now, Eric has joined the CannaLife community and is uploading his experiences with the product every day. He says his prescribing doctor is also sharing some of his medical information (with his permission). Not only is Eric feeling better physically, but seeing the CannaLife community grow and hearing other peoples' stories is making him feel better about the whole experience.

He even went for a job interview yesterday.... He's looking forward to hearing back from them.



Jane – Epileptic medicinal cannabis user

Jane has suffered from epilepsy her whole life. She is now in her 30s and mostly has her seizures under control, but the medication isn't working as well as it used to.

Jane likes to be outdoors and active, but she often gets worried that she will be a burden to her friends if she has a problem while doing an activity, so she often just observes and doesn't join in.

As she is getting older, Jane is thinking a lot about having kids, but she worries about being able to take care of them if her condition deteriorates. Her husband is supportive, but she knows how much he loves kids, and sometimes she gets insecure that he will leave her for someone who can be a good mother.

A friend told Jane about the CannaLife app. Jane had never considered cannabis as a treatment for epilepsy, but once she started exploring the Citizen Green Community, Jane started to see stories that other epilepsy sufferers had posted, and she became intrigued. Initially she had some stigma about cannabis, but after reading a few posts and asking some questions, she decided to give medicinal cannabis a try.

After about three months, Jane noticed that her epilepsy symptoms had reduced considerably, and she very rarely had seizures. Jane started uploading her results through CannaLife and communicating with several other users in the Community. She even cashed out some of her reward tokens and bought some rock climbing gear.

Jane felt much calmer and started participating in rock climbing, netball and other outdoor activities. She even said to her husband that it's about time they started trying to have a baby.

Tony – Medical researcher

Tony has been a medical researcher for the last decade. He did his PhD in drug delivery systems and has been working on new treatments for Alzheimer's, diabetes and, most recently, arthritis.

Tony is a pretty serious guy. He plays the violin for relaxation and likes to read travel books. Once a year, he meticulously plans a trip, usually somewhere with great walking tracks and coastlines, and then goes on his holiday.

At 36, Tony hasn't yet met the right person to settle down with. He thinks he would like to have kids but isn't sure how he'd cope with the chaos. It's really not on his radar at the moment.

Recently, Tony has been a bit bored with his work. A colleague told him about a new study into the efficacy of delivery mechanisms for medicinal cannabis. At first, Tony was quite dubious about working with cannabis, but he did some research and discovered that, not only is medicinal cannabis now legal, but there is promising research on the effects of the product for a range of conditions.

Tony decided to become a researcher on the project. He is experimenting with a range of delivery mechanisms and doing more reading about the field.

One of the researchers on the project told Tony about the Citizen Green Community and how they can contribute to the Prescriptii app and be rewarded for sharing their research results. He explained that the data Tony's research team collected would help doctors and other practitioners to make more effective recommendations to patients and help to accelerate product development based on their work.

Tony has looked at the app and discovered some very interesting research and clinical results. He is excited about sharing his work with the Community and seeing products in production soon.



Lisa – Medical practitioner

Lisa worked hard to get into medical school and was one of the top students in her class. When she graduated, Lisa took a year off to volunteer in Papua New Guinea with Médecins Sans Frontières (MSF) International and helped local villagers with vaccinations and a whole range of minor medical conditions.

Working overseas was very satisfying for Lisa, and she learned a great deal in her year away. When she came back, Lisa decided to do her internship at a leading public hospital and then went into general practice.

One of the things Lisa really enjoys is going to conferences and learning about the latest advances in medicine. She considers herself very fortunate to be practicing medicine at a time when there are so many amazing discoveries, even though it's not easy keeping up with all of them.

Lisa is quite conservative in her practice. She is a scientist and likes to have good evidence and clinical experience when she prescribes medication to her patients. She sees it as a balance between getting the best clinical outcomes and minimizing risk.

Even though some doctors have talked about the benefits of cannabis for a few years, Lisa hasn't really seen any evidence from reputable studies that it has a clinical benefit.

At a recent conference, Lisa heard about the Citizen Green Community and noticed that they have created a large database of anecdotal patient information combined with all of the available research studies and manufacturers' results.

As a result of reading a large number of consumer testimonials and some of the research, Lisa decided to try prescribing medicinal cannabis for a small group of her patients.

The outcomes are mixed. Some people got great results, while others showed only slight improvements. Lisa fed all of the information back into the Community and is starting to get a good feel for what works best with medicinal cannabis. She will definitely be using it as part of her diagnostic toolkit going forward.

Bob – Pharmacist and cannabis retailer

Bob has run a small local pharmacy for 25 years. He has seen all kinds of people with every imaginable condition come to him for help. There are days when he just feels like a glorified pill pusher, simply handing out the medicines that the doctors prescribe, but there are other days when he feels that he is really providing useful advice and helping people get well.

Bob has used cannabis illicitly for the last 10 years to help his PTSD from his time in Vietnam. He knows that it helps keep him calm and really reduces the flashbacks. Bob is certainly a believer in the effectiveness of cannabis, and he is really glad that it has been legalized for use under medical supervision.

When cannabis was legalized, Bob applied to become an authorized retailer and was successful in his application. He loved being able to recommend cannabis for different conditions and supply it to people legally.

What Bob found frustrating at first was that he felt quite alone in proving medicinal cannabis to customers. He sensed that there was still some stigma around the product and didn't really know what other retailers were doing.

At an industry conference, Bob asked about people supplying medicinal cannabis and was met mainly with blank stares and occasional hostility.

Then a colleague mentioned CannaLife and Prescriptii to Bob, and he took a look at the content available. Bob could see that consumers were getting good results, but he already knew that. What



really excited Bob was that he was able to see that other retailers were getting similar results and producers were sharing information about their products.

Bob signed up and bought some credits to access more detailed information and results on the platform. He also started sharing anonymous purchase information and encouraging customers to sign up for CannaLife and share their results.

After a while, Bob was earning enough tokens from recommending customers to the system that he didn't even have to pay anymore to access a whole range of information that helped him be better informed – and hence better inform his customers – about the most effective uses, delivery mechanisms and modalities for medicinal cannabis.

How Will the GCAC Information Economy Work?

The GCAC Information Economy will be operated by a wholly owned subsidiary of the listed GCAC company. The subsidiary will deploy a sophisticated token economy, backed by cutting-edge technology and the most sophisticated data analytics and security.

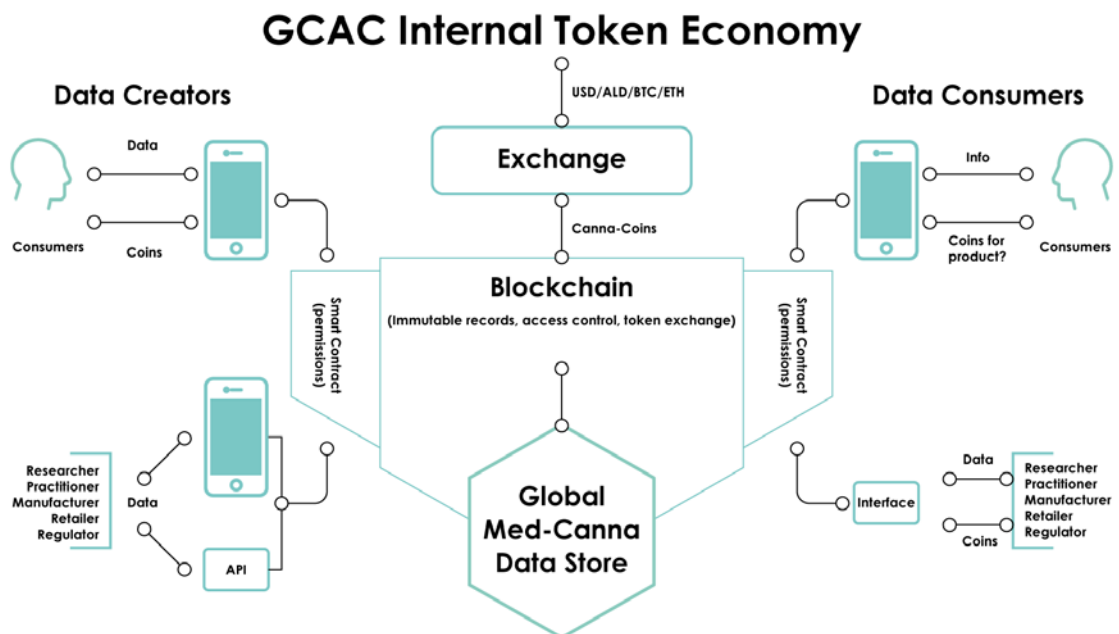
Business Structure

The current intention is that the Citizen Green Community will be operated by a Lithuanian private company.

The company will be a wholly owned subsidiary of GCAC. All of the key activities, revenues and profits of the subsidiary will be reported via the parent company according to normal Canadian accounting standards.

The operating business will create a digital economy that is parallel to the current GCAC business, where buyers and sellers of medicinal cannabis data create their own marketplace through supply and demand for the data and rewards in the system.

The business is independent from the revenue of the main GCAC business. It will generate revenues from operating this digital economy by way of fees, commissions and advertising revenues, underpinned by blockchain and other advanced technologies and facilitated by community development activities.



All transactions of the company will be transparent and visible to Citizen Green Community participants on the blockchain, while still protecting individual user identity (this is one of the main strengths of the blockchain).

The basic presumption of the Citizen Green Community project is that data is valuable, domain specific data more so when supplied to a community of interest, and data synthesized and correlated from a mix of anecdotal (user experience), empirical and commercial sources for a specific community is the most valuable of all.

What makes our approach both novel and extremely valuable is that GCAC is deploying a cryptocurrency-based information economy that will create a new class of digital assets, based on highly valuable data, as well as a pricing mechanism to enable free exchange of those assets, in a way that strictly enforces individual user privacy and data sovereignty.

The internal economy dynamics will be determined by the supply and demand of data from the various Citizen Green Community participants and through a gamified system of rewards for different user groups, particularly consumers.

All economy participants can input data into the community via interaction with the mobile applications. Once data is entered, the GCAC integrated technology solution will add value by applying aggregation, analysis and refinement processes using high-end machine learning, AI and data analytics techniques. This delivers aggregated data, which those same participants, and others, may find valuable for their own medical, informational and commercial purposes.

The currency and value exchange mechanism of the internal medicinal cannabis data/information economy is the Citizen Green Token (CGT), which will enable the automated recorded transfer of medicinal cannabis data between Citizen Green Community participants, facilitated and protected via the blockchain.

People who need to access the Citizen Green Community data will be able to do so by:

- Earning CGTs through data input,
- Purchasing CGTs from the company via the marketplace or
- Purchasing CGTs from CGT holders on the GCAC marketplace.

Tokens may be used to purchase medicinal cannabis data via a user interface and to redeem rewards and discounts from retail partners.

The medicinal cannabis data will be priced in CGT.

Engagement Levers

The Citizen Green community will provide rewards and incentives in a gamified ecosystem to encourage members to share their data via the apps.

This approach combines best practice from loyalty programs, social media and token economics to drive desired consumer behavior, such as:

- Answering questions generated by the app (through the platform),
- Supplying pain and other symptomatic information,
- Experiential information, and
- Time series information (what was your pain level when you took the medicine, 1 hour later, 6 hours later)
- Information sharing with other users
- Inviting

Consumers will gain ranks based on number of activities, quality of the data submitted, personal and medical data completed and sharing activity on the platform. As the consumers progress through the ranks, additional bonus coins will be issued and they will be given accolades within the token economy.



Coins will be used within the token economy to:

- Purchase aggregated (de-personalized) data for research, product development and retail optimization.
- Claim rewards from participating dispensaries (such as discounts, bonus products, additional merchandise, tips and tools, special events, etc.)

The rewards will need to be of sufficient perceived value to consumers that they elect to use them in the token economy rather than trade them via the cryptocurrency exchange for other cryptocurrencies or fiat currency (such as USD). Conversely, if the rewards are of sufficient perceived value, consumers will not only provide additional data, they may purchase additional CGT tokens on the exchange.

Retail dispensaries (and potentially manufacturers) will be able to accept CGTs in return for rewards and use those tokens to purchase data. Should they require additional data, these groups will also be able to purchase additional CGTs either via external exchanges or over the counter (OTC) from GCAC.

Medical practitioners will be able to gain permissioned personalized access to their patients' data if they also provide personalized and diagnostic information on other patients (also permissioned). The practitioners may be further incentivized to provide hard data and subjective observational data that can be de-personalized and/or permissioned in order to deepen and cross-validate the user-generated data. Incentives for this kind of activity could include CGTs and also useful diagnostic and prescribing information.

Academic researchers could be granted access to de-personalized and demographic data at reduced CGT rates (or even for free by application). The proviso would be that results would then be included in the overall GCAC data repository.

Token Generation within the Information Economy

There will be a fixed number of 45 billion CGTs introduced into the economy, and this number will remain fixed forever.

Tokens will be issued and deployed as follows:

- Early adopters and platform users will obtain CGTs to join the community for the supply of valuable and trusted Raw, Clinical and Refined data and kick-start the data exchange in the internal economy.
- GCAC will develop a bounty program where providers of data (participants, not the company itself) will be issued tokens for inputting data into the system via the mobile apps.

Data Exchange

From completion of platform set-up, immediate data trading will be possible via the exchange of CGTs, carrying with it a permission-based smart contract between participants.

The medicinal cannabis community will be invited to participate in trading in a high-quality data market and enjoy the early adopter benefits of the platform, including the utility of the CGT.

With a bigger and better dataset, and with active contributors and users of the database, Citizen Green will achieve more refined and useful data, which in turn will bring unlimited benefits to the community and medical researchers.

Business Model

The Citizen Green Community will create value by facilitating and promoting the development and expansion of the Global Cannabis Data Information Economy.



Revenue Streams

GCAC earns revenue from:

- Data sales – Data will be sold to cannabis product manufacturers, insurers and retailers to provide:
 - Baseline product efficacy for different strains and conditions per user group; this will support product development roadmaps, retail optimization and insurance coverage guidance
 - Ongoing and longitudinal data for efficacy and development studies and planning
- Consulting Fees – For parties such as regulators, it is anticipated that a consultation fee for providing specialized teams comprised of the brightest global minds in medical canna from structuring regulatory frameworks; cultivation, manufacturing, laboratory and distribution standards; canna product expertise; and training programs for healthcare and retail professionals. Additional fees can be charged for access to the database and the data without individual transactions or trades. Payment for the subscriptions may be prescribed in CGTs, although a flatter fee structure rather than a market-driven price point is anticipated as the appropriate pricing metric.
- Training Fees – GCAC's Canna eHealth training is for canna medical professionals. Training includes both onsite and e-learning covering prescribing (i.e., product efficacy, dosage, pharmacology, contraindications), product knowledge, 1-1 patient care and canna industry updates. Users will have access to Citizen Green mobile and AI technologies as part of the fee charged.
- Management of Treasury function and cryptocurrency reserves
- Advertising – Aside from the current impressions model, as the database and demand for information grow, GCAC may sell advertising space on the mobile applications and its website due to the traffic and usage statistics that it will generate.

Key Expenses

- Technology maintenance and development
- Marketing and corporate communications
- Partner management and engagement
- Data and information feeds



Technical Approach

Citizen Green makes use of two blockchains to underpin the technical solution, since the business model makes two key requirements of blockchain technology. Firstly, Citizen Green creates an Ethereum-based ERC-20 token (CGT), which allows loyalty and rewards programs for data economy to be absolutely transparent and entrusted in code. People using the CannaLife and Prescriptii mobile applications can trust that rewards will be issued automatically, since this is enforced via an Ethereum smart contract.

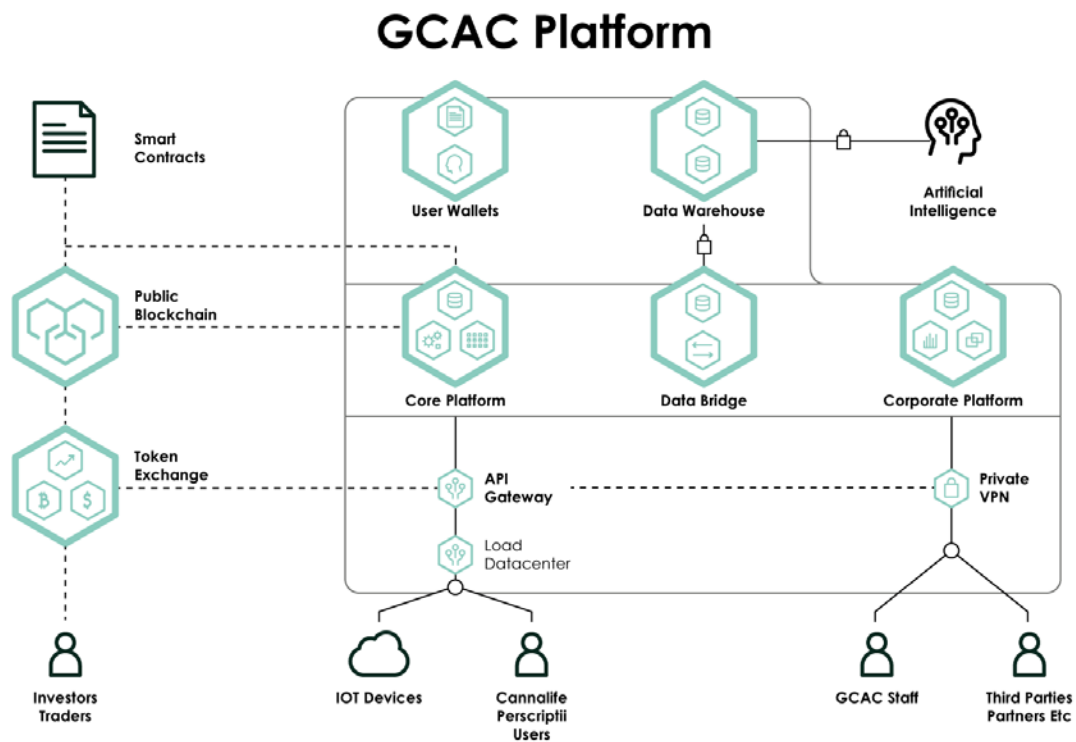
The other key business blockchain technology requires the creation of a permissioned data market. While Ethereum has proven capability in creating digital assets through the use of smart contracts, it does not present programming advantages provided by the NEM blockchain. Key to this is the ability to register digital data assets using an Application Program Interface (API) call to generate a unique NEM mosaic identity.

GCAC's data collection from our mobile applications and AI technology is predicted to constantly grow and adapt to the evolving medical cannabis data requirements.

The development team requires a flexible programmatic approach to dimensioning both current and future data assets, which will be registered as a unique GCAC data asset on the NEM blockchain. The unique NEM asset registration is assigned back to the GCAC medical cannabis database.

The NEM blockchain asset registry allows the data to be permissioned and shared using NEM's multisig transaction functionality.

The development team can automate data registration, program multisig smart contracts and create a permissioned data market that constantly responds to the collection of medical data.



Solution Architecture

The platform design is built up from multiple interconnected components to provide a secure high-performance system.

Mobile Apps

The CannaLife and Prescriptii End-User Applications:

- Built on iOS and Android platforms
- Designed to encourage incentivized data capture
- Work with main web API to provide user functions to view, accept and reject data requests from data consumers
- Work with main web API as a proxy to integrate with blockchain storage layer to view current account (token) balance in native platform crypto currency

Core Platform

The GCAC Core and Corporate Platforms feature:

- Mobile responsive custom web application built on a modern framework to provide management functions to GCAC staff for admin of users, roles and system configuration
- Interfaces to the main web API and through it to the blockchain
- Reporting and integration to other services and traditional applications where required
- Approved third party and partner access to the platform via a secure network (VPN)

Main Web API

The platform will have a range of APIs built to enable access to various platform functions depending upon the roles and permissions of the user.

- Built upon an industry recognized technology such as .NET or Rails, this is the main application providing logic and access to the various storage layers
- Authentication of users querying platform APIs
- Secure relational data storage of users, roles and application access permissions
- Secure mapping of users to blockchain identities (wallets)
- Platform access point for IOT devices
- Data creator endpoints
- Product purchase endpoints
- Data consumer endpoints
- User/role management endpoints
- Regulatory user endpoints

Databases

The data vault component will provide a high performance, big data storage solution for the AI platform to work with in a dedicated, highly secure environment. This will centralize the storage for data collected by the mobile applications and the AI's refined data. This data will be stored without identifying information but will retain an anonymized link back to the secure user storage.

User Wallets

The individual system user wallets, which map to their blockchain addresses, will have their keys centralized and managed through the main web application. The wallet is interfaced to the mobile apps so users can check available balances and confirm transactions (upload data to receive tokens, buy data with tokens, etc.).



Public Blockchain

The public blockchain is the distributed storage layer for recording transactions associated with the data capture, data requests, transactional information and the respective user wallets. The blockchain ensures user privacy and data security, tracks ownership and manages permissions and transactions through the platform.

The blockchain component will be built on the NEM enterprise-grade blockchain.

NEM provides several advantages to GCAC that will allow for rapid development and deployment of the blockchain component, customized and optimized to underpin the Citizen Green Community Information Exchange.

NEM's Smart Asset system includes highly configurable fixed assets called mosaics. Mosaics may be configured as tokens that can define custom crypto-currencies, tradable "points," fiat-pegged assets, virtual stocks and much more. Such a tokenized asset can then be easily integrated into business operations using the NEM blockchain's powerful development features and secure high-performance ledger. The NEM exchange will provide the ideal platform to take these tokenized assets to the broad marketplace.

Smart Contracts

Smart contracts will provide the binding of data access requests by consumers to creators with a set of parameters specified when the contract is created. Smart contracts can exist both on public blockchain or within the private environment.

Within the Information Exchange, each data bundle loaded will have a smart contract with default access parameters. Different user classes will be able to specify the parameters they want for their data, including price, expiry (if any) and access controls (e.g., other consumers can access in searches, but retailers cannot access). An initial set of standard parameters will be set and, on release of the system, a limited set of parameters will be available for user configuration. Future versions will allow more fine-grained granularity of data permissions and pricing.

AI

A third-party AI platform will be granted secure access to the data warehouse to execute artificial intelligence and machine learning processes to refine contributor data and assist in determining price points and quality assessments of that data.

As platform capabilities are enhanced, greater predictive analysis, data mining and insight generation capabilities will be added. Data consumers will be able to pay extra to access these services.

NEM Data Schematics

The NEM data object is called using the NEM Software Development Kit (SDK). GCAC data is registered using the Namespace: `nem.model.objects`, which allows our developers to easily run 'get' and 'create' public methods.

Keywords:

- **common**: An object to hold password and private key
- **endpoint**: An object containing information about a remote node
- **mosaicAttachment**: An object containing mosaic data to join in a transfer transaction
- **mosaicDefinitionMetaDataPair**: An object of objects containing mosaics properties
- **invoice**: An invoice object working on NEM mobile clients
- **transferTransaction**: An unprepared transfer transaction object
- **signatureTransaction**: An unprepared signature transaction object



NEM API calls for object creation:

Common

Name	Type	Description
Password	String	A password
privateKey	String	A private key

Endpoint

Name	Type	Description
Host	String	NIS uri
port	String	NIS port

transferTransaction

Name	Type	Description
Recipient	String	A password
Amount	Number	An amount
Message	String	A message to join

The NEM transaction is called using the NEM SDK. GCAC permissioned data is transacted using the Namespace: `nem.model.transactions`, which allows our developers to run 'prepare' and 'send' public methods.

Keywords:

- [transferTransaction](#): A transaction registered on the NEM blockchain
- [mosaicTransferTransaction](#): Containing information of the GCAC permissioned data transaction

NEM transaction API calls:

transferTransaction

Name	Type	Description
common	Object	A common object
Tx	Object	A transferTransaction object
Network	Number	A network id



mosaicTransferTransaction

Name	Type	Description
common	Object	A common object
Tx	Object	A transferTransaction object
mosaicDefinitionMetaData Pair	Object	A mosaicDefinitionMetaData Pair object
Network	Number	A network id

AI Application for GCAC

AI will be deployed to audit, validate, and enrich individual records as well as create aggregated profiles based on customers and products. Individual records may vary by data quality, but AI can apply methods such as missing value imputation, interpolation, extrapolation and segmentation that can overcome such issues and potentially increase the quality and value of the data as a whole.

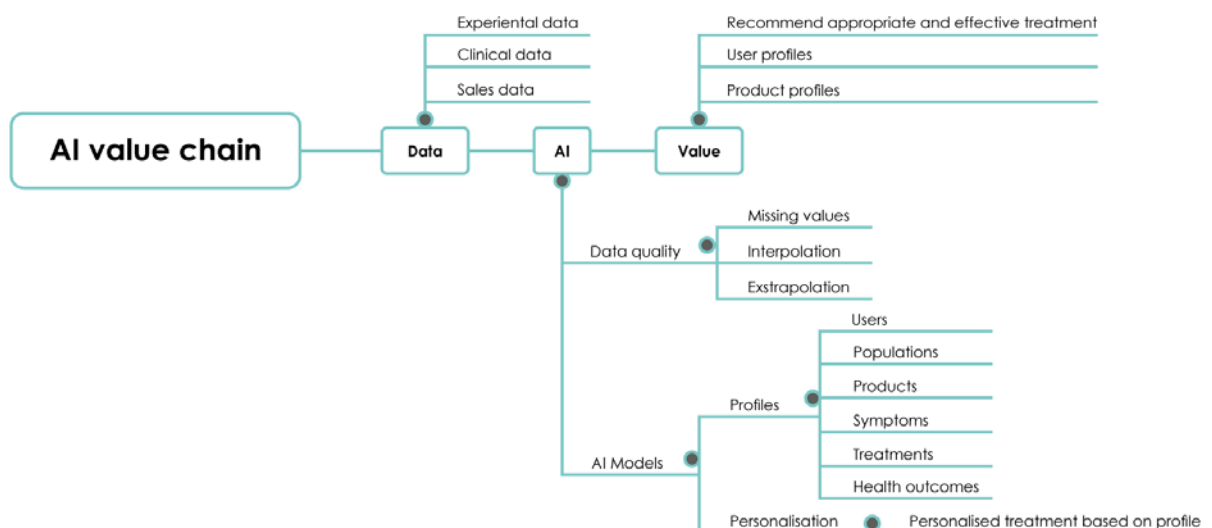
The information extracted from individual records can be categorized into four areas:

- Treatment (product, formulation, protocol)
- Population (personal/demographic/medical history)
- Symptom(s)/medical diagnoses
- Health outcome(s)

In general, the value of the data would increase with:

1. More observations (more users)
2. Quality data (accurate observations, compliant users)
3. Longitudinal data (user data over time)
4. Diverse observations (range of treatments, populations, symptoms and health outcomes)

Three sets of data products could be created and sold based on quality user data enriched with AI: customer profiles, product profiles and resultant "Pain to Strain" profiles.



Customer profiles are aggregated profiles of medicinal cannabis users. AI would generate and estimate the market value of the data to ensure fair pricing/revenue earned based on data quality and economic value.

The data underlying the profiles can include aggregated personal and demographic data, medical profile (including diagnosis and personal and family medical history), symptoms profile, treatments and health outcomes. Profiles can be snapshots or longitudinal in nature (a one-time measure vs. repeated observations of the same user).

Product profiles are either specific or aggregated profiles of products/strains. Buyers of this data can discover the typical treatments (e.g., the product, formulation and usage protocol) used for a given pain or to discover “similar products” based on a known products/strains. Additionally, the buyer can determine the popularity (based on correlations with sales data and/or user-reported purchases) and effectiveness of known products/strains.

“Pain to Strain” profiles are a set of associations that pair symptoms with effective products/strains. The accuracy of the associations and recommendations to a particular user or population would increase with more quality data regarding the health outcome, symptom, personal/demographic/medical data and the treatments.

Rolling out GCAC

CGT Distribution

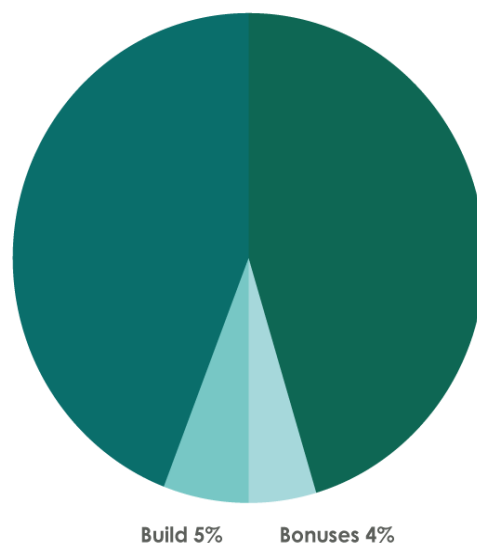
The Citizen Green Community token distribution will enable the business to reward desired consumer behavior.

Total CGT supply will be 45 billion tokens. These will initially be allocated as follows:

- 5.12 billion CGT will be air-dropped to the GCAC community
- 21 billion CGT will be allocated for distribution to data contributors. The structure of this component of the coin distribution is similar to the Bitcoin halving distribution structure: There is a concept of distribution “difficulty,” which changes every two weeks, corresponding to the amount of data a user needs to contribute to receive coin distribution. Distribution happens every two weeks, with halving happening after 104 adjustments/distributions or every four years. The 21 billion coins will conclude their distribution in the year 2149, just as the last Bitcoin is expected to be mined in the year 2140.
- 18.88 billion Treasury tokens

The allocation of the tokens is outlined in the diagram below.

Community 45% Treasury 46%



Marketing and Growth

There are 2 marketing horizons for the Citizen Green Community.

- Horizon 1 – Community building
- Horizon 2 – Operations

Promotion and Execution – Medical Cannabis Community

The cannabis community will be the focus of user acquisition and marketing efforts.

Current and prospective consumers will be encouraged to be part of an exciting and valuable community where they can be rewarded for their active participation.

Key messages will revolve around the key objectives of the Citizen Green Community to deliver:

- Improved health outcomes;
- Reliable, useful product and condition information;
- Enhanced product development and
- Faster regulatory approval.

The community will be reached via social media, existing retail outlets and a publicity campaign via popular blogs and alternative media outlets.

Professional Data Users

As the business further expands into deployment and operations, the marketing will continue to focus on developing the user community and, in parallel, deploy communications and education material designed to create participation by the “professional” market including doctors, retailers and manufacturers.

The approach to this market is very different from the consumer marketing.

Professional marketing will be based around webinars and have an educational focus that demonstrates the value to professionals in contributing data to the platform and using the data generated by the platform.

Many professionals already participate in data consumption to enhance their operations. For example, most doctors use medical data and prescription software to assist in diagnosis, drug recommendation and interactions management and prescribing. The extension into consuming medicinal cannabis data is a logical one. Over time, it is likely that GCAC will integrate into the leading medical diagnostics software to provide data directly to the doctors’ desktop in their practice.

The key change will be for professionals to contribute data to an information marketplace. The benefits of participation – from an overall enhanced dataset to being rewarded for contributing their information – will take time and be part of an education process. The payoff for GCAC from this investment in educating the professional community will be a greatly enhanced dataset that can be marketed as including the broadest possible range of research, clinical, product and retail data.

Ongoing Operations and Growth

A key part of the ongoing operations of the GCAC Community will be community development and interaction. GCAC will engage community managers and incentivize community participants to engage with the community and share their outcomes via social media and other channels.

The platform will employ advanced analytics to assist the business in making better decisions across the entire operation. Better decisions are key to profit, competitive success and ongoing growth.



The business will also manage and curate the information exchange and make sure that users are satisfied with the experience in a continuous improvement process.

Users will be able to contribute data 24/7 via the mobile apps and will receive immediate feedback in the form of confirmation of coins being issued for their data or being spent for consumption of data.

As the dataset grows, the business will continue to seek a growing cohort of data consumers who will make use of the data and, in turn, create more data that will further enhance the value of the overall dataset.

The GCAC Team

GCAC is being developed and promoted by a world-class team with deep experience in technology and online community management.

Advisory Board

Sam Lee – Blockchain Expert

The founder and CEO of Blockchain Global Limited, which operates Australia’s largest and most liquid bitcoin exchange (ACX). As an industry pioneer, Sam has led bitcoin mining projects, cryptocurrency exchanges, investments and successful ICOs.

Dr. Zohar Kohen – Cannabis Expert

A world-leading scientist in the study of disruptive therapeutic products based on cannabinoids, Dr. Kohen founded SciCann Therapeutics, an Israeli pharmaceutical company, which develops innovative cannabinoid-based pharmaceuticals for a wide range of ailments.

Blaise Blatter – Regulatory Expert

Blaise serves as Chief Development Officer of BuddingTech and is the GM of Medical Cannabis Counsel of Australia. Blaise joined the GCAC advisory board to assist government regulations.

Antanas Gouga – Crypto-Currency Expert

“Tony G” is a poker player, entrepreneur, politician and an expert in crypto-currencies and blockchain. He is currently Lithuania’s member of the European Parliament and an ICO special advisor to Bankera, one of the most successful ICOs on record.

Eugene Dubossarcky – AI Data Scientist

Eugene holds a PhD in Machine Learning (Neural Networks) and is the Chief Data Scientist at AlphaZetta, a global analytics consultancy.

Scott Walker - Cannabis Industry Expert

Scott, co-founder of Cannabis Canada Association, has over 25 years of experience as a lobbyist, contractor and consultant.



Executive Team

Brad Moore - CEO & Director

Brad brings 20 years of practical business leadership experience with Fortune 500 companies. He has a strong background with internet-based start-up corporations and a proven track record restructuring and developing early-stage businesses. Brad holds an MBA from Royal Roads University.

Alexander Helmel - CFO & Director

Alexander has 12 years' experience in the Canadian capital markets and over 20 years within the information technology sector. He specializes in developing corporate growth strategies, building senior management teams and developing corporate assets. Alexander brings an intimate knowledge of internal control strategies and corporate governance guidelines. He holds a BSc (Mathematics) and is a Certified Information Systems Auditor (CISA) 2006.

Hanan Gelbendorf – CMO

Hanan has 20 years of global marketing experience in agency settings as well as in corporate America. His experience and proven record include delivering results for early stage businesses and established F500 companies. Hanan specializes in leading all aspects and processes of marketing, and he holds an MBA from the Smeal College of Management at Penn State University.

Eyal Margalit – CTO

Eyal has over 20 years of experience in building technology companies. Two of the companies he founded and led accomplished significant exits. He has vast experience in all aspects of technology development management and the translation of tech to business. Eyal has a strong understanding of the medical cannabis space with a focus on R&D.

Jeffrey Hayzlett - Director

Jeffrey is Chairman of C-Suite Network, home of the world's most trusted network of C-suite leaders, and a notable media personality. He is CEO of The Hayzlett Group and a TV and radio host of Bloomberg Television and CBS Radio. Jeffrey was formerly global CMO at Eastman Kodak.



Key Partnerships

Blockchain Strategy and Token Economy Development - Blockchain Frontier

Blockchain Frontier enables clients to develop and implement disruptive technologies that invigorate their growth platform. We help our clients turn their business into a platform, underpinned with their own exciting, disruptive and profitable digital economy.

As experts in disruptive technologies, we are positioned to provide valuable insights on how you can best apply, integrate and benefit from blockchain. Our capabilities include:

- Business model innovation
- Strategic development
- Ecosystem deployment
- Use case development
- Implementation
- Strategy
- Pilot program analysis
- Process management
- Payment networks
- Peer-to-peer capabilities
- Product development
- Efficiency improvement

Enterprise Blockchain: NEM

NEM is well regarded as the most robust blockchain built for enterprise application and smart asset management. Using the NEM blockchain will ensure that CGT users are properly rewarded for the data they contribute, maintain ownership and control of their data and can purchase data as they need it.

The NEM Foundation will be backing the GCAC Community with XEM cryptocurrency.

The XEM harvesting income earned by GCAC will be used to offer reward tokens (in CGT) for positive contributions to the Citizen Green Community, such as:

- New member referrals
- Social media posting
- Extra data contribution

AI and Analytics: Prescient

Prescient consults on how to make better decisions, recognizing that all decision making involves forecasting.

Our process involves using sophisticated techniques to measure, assess and manage forecasts and the decisions that arise from them. We call this Decision Performance Management.

An integral part of this is Forecasting Performance Management. We advise on better forecasting methods, based on both statistics and human judgment, and on their implications for organizational structure and incentives. We consult on knowledge management as it pertains to forecasting.

Blockshine

Blockshine are internationally regarded developers of cryptocurrency applications and blockchain technologies. Blockshine are the architects and developers of ACX.io, the most liquid crypto exchange in the southern Hemisphere.



Appendix – Indicative Data Structures

Below is a selection of indicative questions and data fields that will be progressively gathered from users as they supply information to the CannaLife app.

Suggested questions

- **Baseline/onboarding**
 - **Personal details**
 - Gender
 - Age
 - Nationality
 - Ethnicity
 - Weight
 - Height
 - Education
 - What is your highest level of education?
 - Work
 - Current employment status
 - Occupation
 - How many weeks do you work per year?
 - How many days do you work per year?
 - How many hours do you work per week?
 - **Medical**
 - **Medical treatment**
 - Ever had, or sought advice or treatment from a doctor or a health professional regarding ...?
 - **Medical diagnosis**
 - **Common diagnoses**
 - Have you ever been diagnosed by a doctor with any of the following conditions?
 - ALS
 - ADD/ADHD
 - Alzheimer's
 - Anorexia
 - Anxiety
 - Arthritis
 - Asthma
 - Autism
 - Bipolar Disorder
 - Cachexia
 - Cancer
 - Crohn's Disease
 - Depression
 - Epilepsy



- Fibromyalgia
 - Gastrointestinal Disorder
 - Glaucoma
 - HIV/AIDS
 - Hypertension
 - Migraines
 - Multiple Sclerosis
 - Muscular Dystrophy
 - Chronic pain
 - Parkinson's
 - Phantom Limb Pain
 - PMS
 - PTSD
 - Spinal Cord Injury
 - Tinnitus
 - Tourette's Syndrome
 - Other
- Mental health
 - Have you ever been diagnosed with depression, anxiety, panic attacks, stress, psychosis, schizophrenia, bipolar disorder, chronic fatigue, postnatal depression or any other mental or nervous condition?
- Hospitalization
 - Times in last year
- Surgeries
 - Times in last year
- Family medical history
 - Have any of your immediate family members suffered from any of the following?
 - Diseases and/or disorders
 - Heart disease and/or stroke
 - Cancer and/or melanoma
 - Multiple sclerosis
 - Parkinson's disease
 - Muscular dystrophy
 - Polycystic kidney disease
 - Huntington's disease
 - Motor neuron disease
 - Hemochromatosis
 - Any other hereditary disorder?
- Non-marijuana drug use
 - General



- Have you regularly taken any drug, tablet, medication or herbal medication?
 - Tobacco/nicotine use
 - History
 - Have you smoked tobacco or used products containing nicotine in the last 12 months?
 - Current
 - How many times per day have you smoked tobacco or used products containing nicotine in the past week?
 - Alcohol use
 - Current
 - How many standard drinks per day have you consumed in the last week?
 - History
 - Have you consumed alcohol in the past 12 months?
 - Prescription drug use
 - Current
 - History
 - Drugs used not prescribed
 - Have you ever used any drug not prescribed for you by a doctor? (Excluding vitamins and supplements, over-the-counter medication or the oral contraceptive pill)
 - Illicit drugs
 - Other drugs?
 - Have you ever smoked a substance besides tobacco?
- Symptoms profile
 - Symptoms list
 - Fatigue
 - Excessive appetite
 - Diarrhea
 - Nausea
 - Headaches
 - Pain
 - Stress
 - Depression
 - Cramps
 - Seizures
 - Trembling
 - Involuntary movements
 - Difficulty with motor skills (standing, writing, simple tasks, etc.)
 - Difficulty with speaking
 - Difficulty with swallowing
 - Restless (frantic) behavior

- Self-harm
 - Tantrums
 - Harming others or surroundings
 - OCD
 - Difficulty in falling asleep
 - Poor quality of sleep (numerous awakenings)
 - Minimum information required/requested
 - Symptoms in the last month
 - Intensity × Frequency × Severity
 - Comprehensive symptom profile
 - For each symptom
 - Incidence × Intensity × Frequency × Severity
 - During the last 24 hours
 - During the past month
 - During the last year but not in the last month
 - Over a year ago
- Cannabis use
- Family/peer group
 - Do any of your friends or family regularly use cannabis?
 - If yes, how many friends/family?
 - History
 - Have you ever used cannabis?
 - Medicinal?
 - Recreational?
 - Recent use
 - When was the last time (or how many hours since) you last used cannabis?
 - For a typical day in the past week, how many times did you use cannabis?
 - Have you used cannabis within the following periods?
 - During the last 24 hours
 - During the past month
 - During the last year but not in the last month
 - Over a year ago
 - Medicinal cannabis prescription (if any)
 - Have you ever been prescribed cannabis?
 - When was the first time you were prescribed cannabis?
 - What was the medical condition for which you received a prescription for medical cannabis?
 - Cancer
 - Glaucoma
 - Human Immunodeficiency Virus (HIV)
 - Acquired Immune Deficiency Syndrome (AIDS)



- Hepatitis C
- Amyotrophic Lateral Sclerosis (ALS)
- Crohn's Disease
- Agitation of Alzheimer's Disease
- Cachexia or wasting syndrome
- Severe and chronic pain
- Severe nausea
- Seizures, including those characteristic of epilepsy
- Severe or persistent muscle spasms, including those characteristic of multiple sclerosis
- Other (please enter)
- Cannabis profile questions
 - Cannabinoids (Source: <http://steephill.com/pdf/Leading-the-Science-Cannabis.pdf>)
 - CBG-A Cannabigerolic Acid
 - CBG Cannabigerol
 - THC-A Tetrahydrocannabinolic Acid
 - THC-C4 Tetrahydrocannabinol-C4
 - THCV-A Tetrahydrocannabivarinic Acid
 - Δ9THC Delta-9-Tetrahydrocannabinol
 - Δ8THC Delta-8-Tetrahydrocannabinol
 - THCV Tetrahydrocannabivarin
 - CBN-A Cannabinolic Acid
 - CBN Cannabinol
 - CBD-A Cannabidiolic Acid
 - CBDV-A Cannabidivarinic Acid
 - CBD Cannabidiol
 - CBDV Cannabidivarin
 - CBC-A Cannabichromic Acid
 - CBC Cannabichromene
 - CBC-A Cannabicyclol Acid
 - Terpinoids (flavor compounds; source: <https://www.steephill.com/science/terpene>)
 - Linalool
 - Terpinolene
 - Phytol
 - β-Myrcene
 - Citronellol
 - Caryphyllene Oxide
 - α-Pinene
 - Limonene
 - β-Caryophyllene
 - Humulene



- Strains and products
 - Products
 - Raw flowers (buds)
 - Edibles
 - Oils
 - Tinctures (with alcohol)
 - Topical (cream/lotion)
 - Transdermal (e.g., patches)
 - Method
 - Potential classification
 - Ingest
 - Transdermal
 - Combust (smoke/vapor)
 - Smoking
 - Mix with tobacco?
 - Vaporize
 - Eating
 - Applying to skin
 - Oral
 - Anal
 - Other?
 - Frequency
 - Effects
 - Pain
 - Similar to pain baseline questions
 - Adverse
 - Same as the baseline symptom question
 - Any physical or mental effects, etc.
- Pain
- Brief Pain Inventory
 - Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain during the last week?
 - On the diagram (of a body front and back), select the areas where you feel pain. Put an X on the area that hurts the most.
 - Please rate your pain by picking one number that best describes your pain at its worst in the last week.
 - 0 no pain ... 10 most pain
 - Please rate your pain by picking one number that best describes your pain at its least in the last week.
 - 0 no pain ... 10 most pain
 - Please rate your pain by circling the one number that best describes your pain on average.



- Please rate your pain by circling the one number that tells how much pain you have right now.
- What treatments or medications are you receiving for your pain?
- In the last week, how much relief have pain treatments or medications provided? Please circle the one percentage that most shows how much relief you have received.
 - 0% no relief ... 100% complete relief
- Select one number (0 Does not interfere, 10 Completely interferes) that describes how much, during the past week, pain has interfered with your:
 - General activity
 - Mood
 - Walking ability
 - Normal work (home work and work outside the home)
 - Relations with other people
 - Sleep
 - Enjoyment of life

