CannaChain

The World's 1st Cannabis Blockchain Engine

Lite Paper V1.0

CannaChain

Team

60+ yrs — Total Dev Exp
80+ yrs — Total Ops Exp
90+ yrs — Total Marketing Exp
200+ — International Patents

Academic Background

Stanford University

Wharton University of Pennsylvania

USC University of Southern California

P GRAZIADIO

MIT Massachusetts Institute of Technology

KENNESAW STATE UNIVERSITY
OFFICE OF THE PRESIDENT

UNIVERSITY OF ALBERTA

Companies Background

Google

Apple

PHILIPS

McKinsey & Company

intel

coinbase
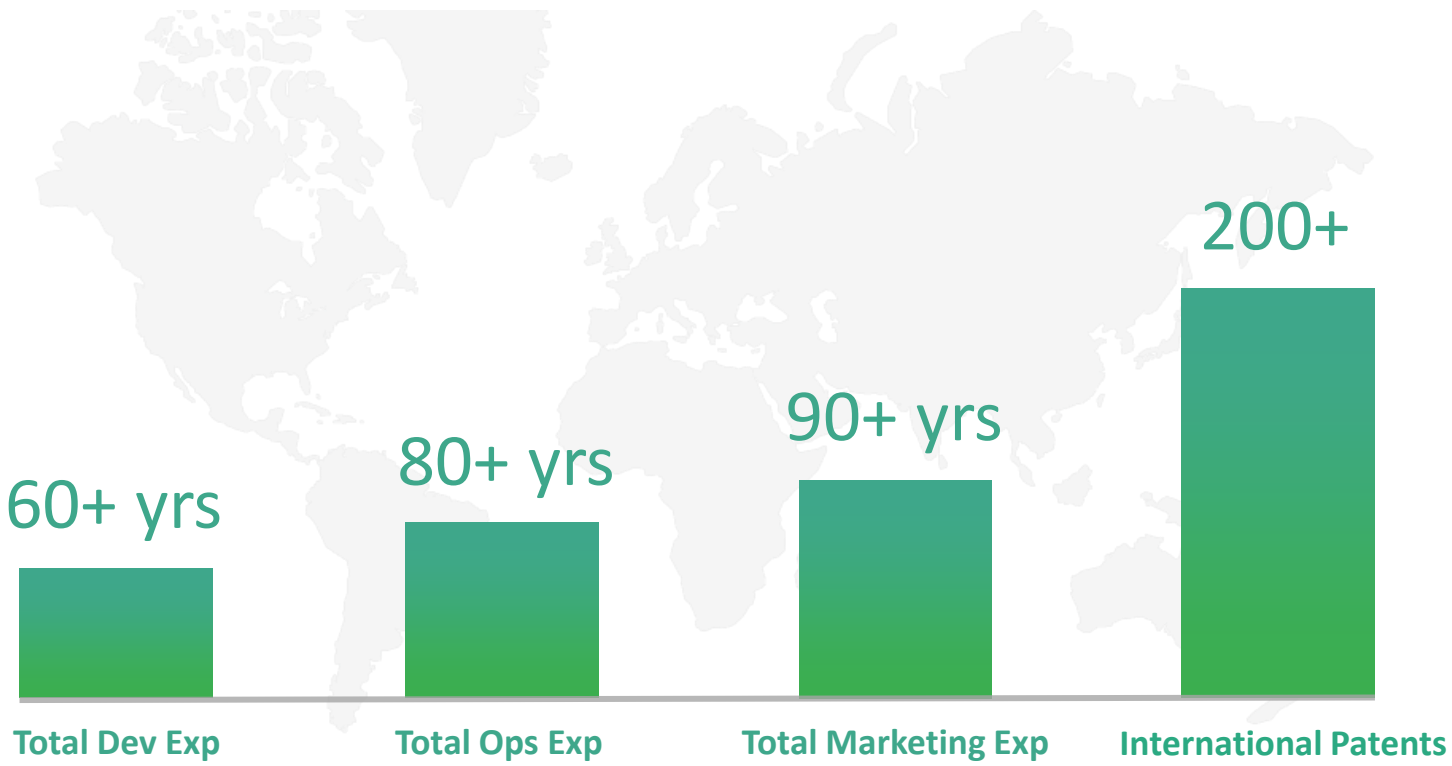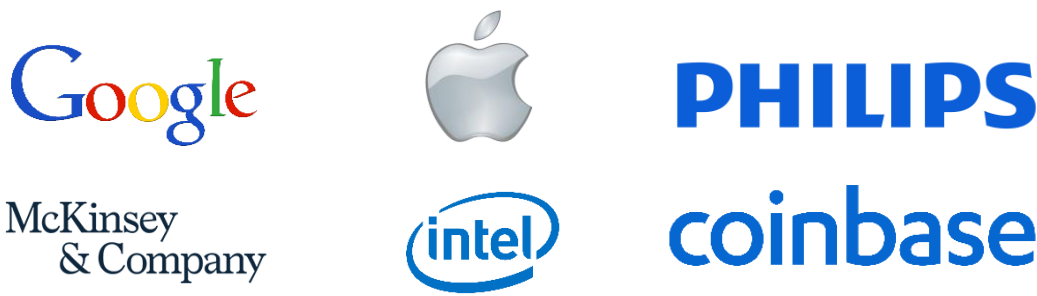
Core Team

Moin Mala Ph.D.

Chief Scientist Officer

- ❑ Dr. Moin Mala received his Ph.D. in mechanical engineering from University of Alberta, and his MS in energy studies from Indian Institute of Technology University. He is a world known scientist in SSL (Vertical Farming, UV), Fiber Optics, Silicon Photonics, and Semiconductors Processes. He served as director of product management at Philip Lumileds. His LED light design also has its applications in the cannabis space, and has been wildly used for indoor farming.He has highly innovative personnel with 20+ Patents & publications in LED lighting and urban farming.

- ❑ Dr. Moin has also been an entrepreneur for over a decade. He is the co-founder and CEO of Sonneteck, a company that envisions secured & sustainable global food supply through the commercialization of Urban Farms for our next generation

- ❑ Dr. Moin is also selected as a scientist for The Recruitment Program of Global Experts in China

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Core Team

Emma Rothstein

Chief Blockchain Architect

❑ Emma Rothstein holds a BS from MIT, and MBA from Stanford University. She is a blockchain architect and has 13 years of product and development experience, as well as 6 years of blockchain research and development experience. She has also advised many blockchain companies on system architecture, including MBYS, Margin, BitTransfer, and Indorse.

❑ Emma joined Google's Special blockchain project in 2016. Beforehands, she served as a product manager at Coinbase, business analyst at McKinsey & Company, and invsetment banking analyst at Goldman Sachs.

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Core Team

Marc Berkowitz
CEO

Marc has been a serial entrepreneur and investor since his early 20s. He has powerful tactical experience in investment banking, real estate, & start-ups with a passion for developing and nurturing business-centered relationships and managing successful large scale projects. He has built 6+ successful companies with 2 acquisitions: Appitivo, a cloud SaaS company, and Quartic Data, a financial big data risk management company. Marc has also been a investor with 20+ years experience. His fund has overseen 2000+ acres of real estate investment in the cannabis space, as well as 50+ licenses include the first few licenses in the U.S. He holds a MBA from Pepperdine University.

Denis Sergeychik
CTO

Denis is a skilled JAVA, C++, and Solidity engineer. He has 9 years of engineering experiences as a full-stack engineer. He has worked for Apple, AT&T, and Visa. His expertise for product design came from his passion for product architecture, product strategy, UX design, and visual design. He also served as senior UX designer at Apple. Dennis became a blockchain enthusiastic in 2015, and has been a blockchain developer since. Denis holds a BA from Kennesaw State University. Dennis

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Core Team

Laurel Tincher
CMO

Laurel Tincher is an Entrepreneur and Marketing Strategist with over a decade of experience in startup management and the production of creative marketing materials. She specializes in using full sensory storytelling and brand building to connect audiences with emerging industries. After helping to launch multiple businesses, establishing collaborative partnerships, working in PR and fundraising for companies in the blockchain, tech, sustainability, travel, fashion, film, and event industries, Laurel knows how to build a loyal customer following and what sets companies apart. Laurel has landed media coverage in outlets around the world, including Cointelegraph, Bitcoin.com, The New York Times, Bloomberg, and Forbes. She also writes on emerging industries, blockchain and cryptocurrencies for a number of clients. Laurel holds a BA in film production from the University of Southern California.

Helen Ruan

Helen Ruan has 16 years of marketing and management experience. Before she developed a passion for blockchain and cryptocurrency, she served at multiple fortune 500 companies including Intel, Autonet Mobile, etc. Helen also has rich marketing, product management, and strategic planning experiences in growing smaller businesses, and she took advisors and leadership roles in multiple companies including Palm, and Flextronics. She has a strong technology background in blockchain and cryptocurrency, e-commerce, IoT, big data, Cloud, SaaS, Telecom, etc. Helen holds a BA and MS in Electric Engineering and Computer Science from MIT.

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Advisors

Eric Tran

Cannabis Investment Advisor

Mr. Tran has over 25 years experience in the cannabis industry including breeding, cloning, cultivation and facility buildout. Eric has overseen the buildout and management of over 50 facilities ranging in size from 1,000 to 100,000 square feet. Mr. Tran has built several successful businesses including Roots Nursery and D&S Garden Supplies, a 20,000 square facility providing gardening supplies to cannabis cultivators throughout California and the U.S. Also through his marketing experience, Eric has managed to make the name for the cannabis strain "Girl Scout Cookies".

James Loud

Cannabis Cultivation Advisor

James Loud is a marijuana and hemp genetics consultant, co-founder of High Times Hall of Fame Seed company Loud Seeds, and the recipient of several cannabis cups. He is also an award winning chef and author of the book Breeding Cannabis due out winter 2019. He has over 20 years of experience working with cannabis. James started Loud Seeds in Northern California with a friend creating several boutique genetics made from elite cultivars. He has been featured in several magazine articles and on magazine covers. His focus in life has always been on quality and flavor. Being raised in the Bay Area the epicenter of contemporary cannabis, he learned to appreciate and experience a wide variety of rare classic genetics.

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Advisors

Vince Wen
Cannabis Marketing Advisor

Vince has 25 years of experience in cannabis cultivation and branding. He owned and managed multiple dispensaries in northern California during his early career. He also taught and mentored many students, some of which include experts in different areas of the cannabis industry, and owners of public traded companies. Vince also has his expertise in Cannabis laws and distribution network throughout California.

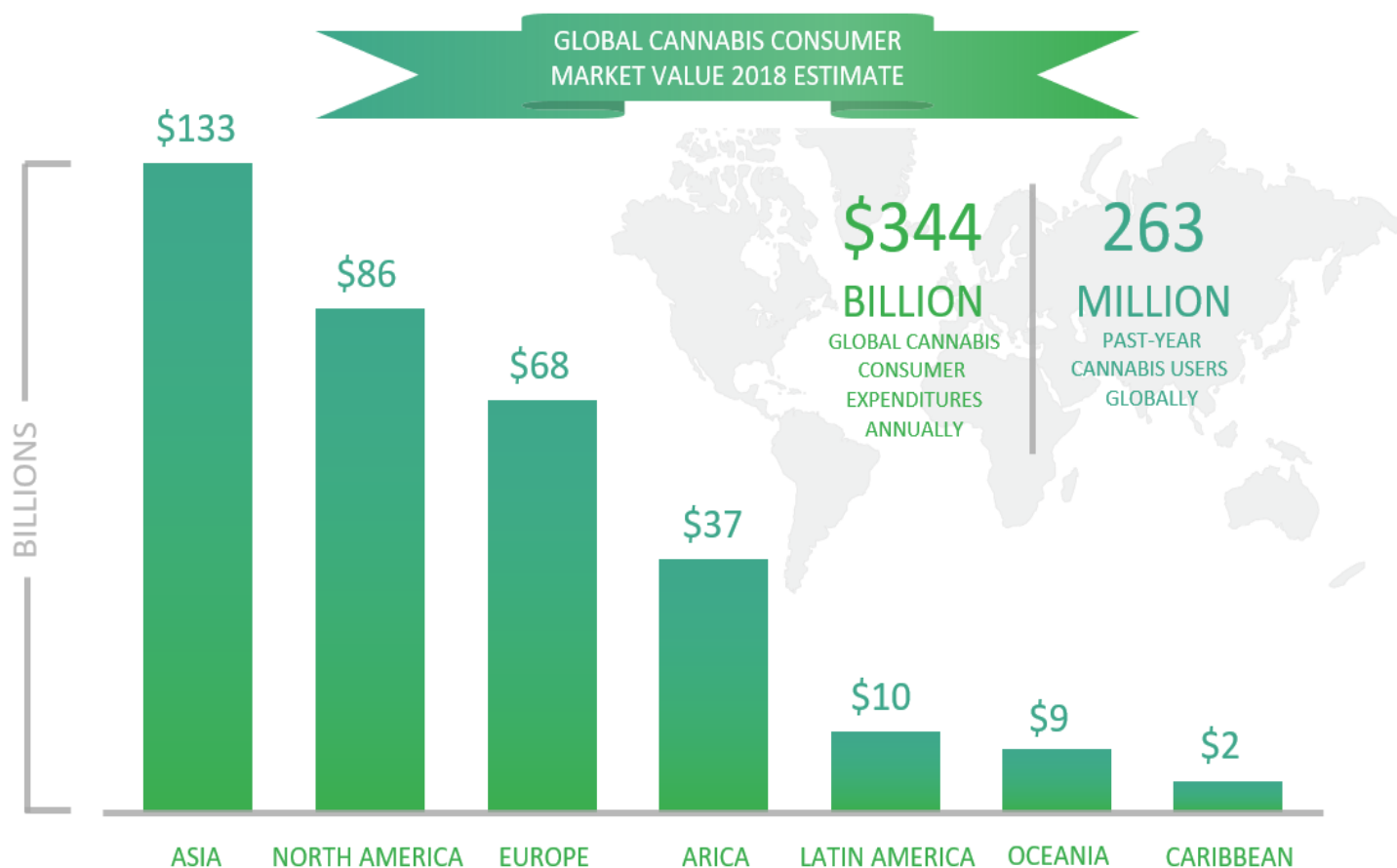**Dean Hempton**
Cannabis Compliance Advisor

With over 25 years' experience, Dean has held a diverse range of leadership positions in several industries including technology, financial services, banking, insurance, and education. His unique perspectives on how digital transformation can dramatically improve global business operations spurred him to design and develop Razitall's equity crowdfunding platform. His prior accomplishments have included building world-class technology solutions for companies including Merrill Lynch, McGraw-Hill, AT&T, and SAP. Dean graduated from The Wharton School of Business at the University of Pennsylvania with a degree in Finance.
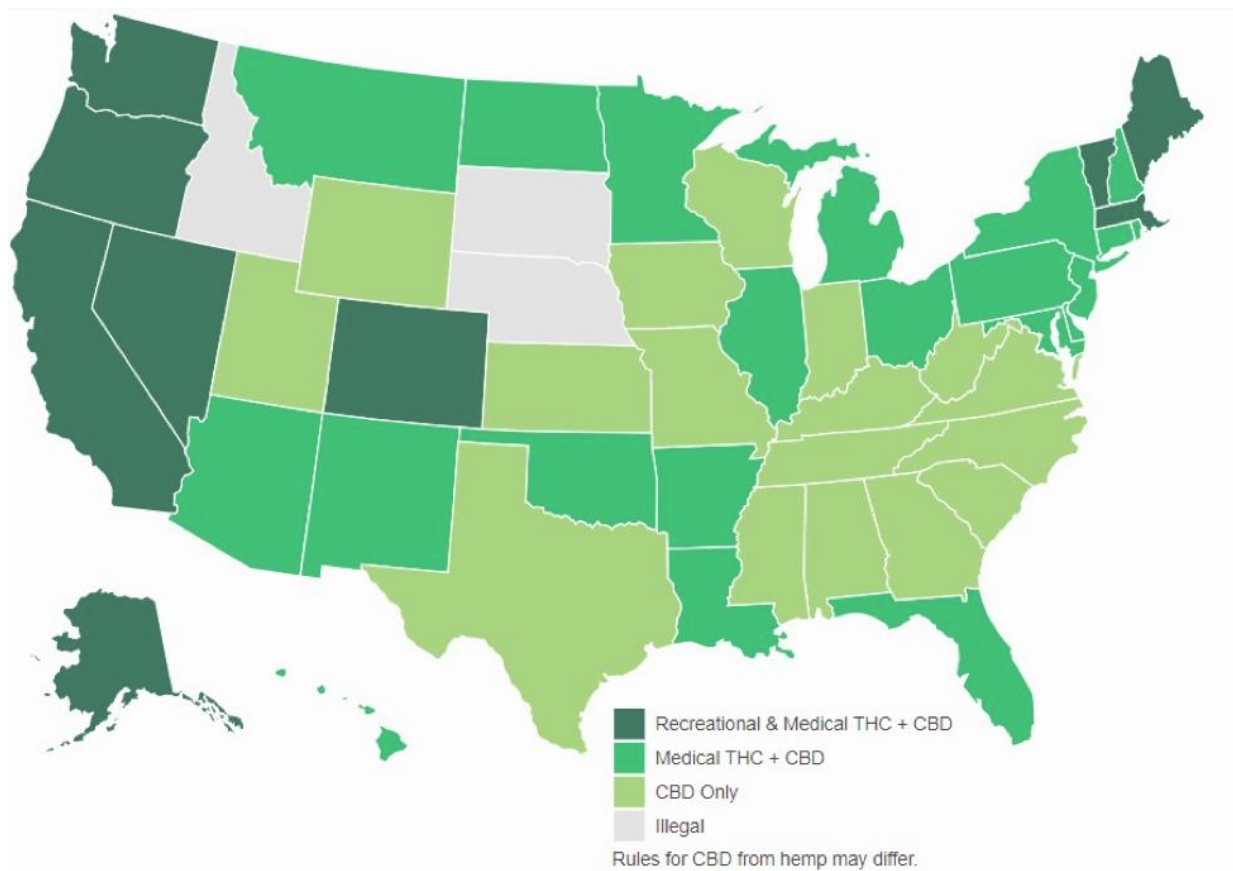
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Global Cannabis Market Size

$133 — ASIA

$86 — NORTH AMERICA

$68 — EUROPE

$37 — ARICA

$10 — LATIN AMERICA

$9 — OCEANIA

$2 — CARIBBEAN

BILLIONS

$344 BILLION GLOBAL CANNABIS CONSUMER EXPENDITURES ANNUALLY

263 MILLION PAST-YEAR CANNABIS USERS GLOBALLY

❑ A report from the UN estimates that there are 263 million active cannabis users in the world, which is approximately 4.9% of the world's population. The U.S. is home to the largest number of cannabis users.

❑ According to New Frontier Data's recent report, the world's cannabis consumer market size is $344 billion, 95% of which is illegal trade.

❑ The world's top 5 cannabis markets ranked by annual revenue are: Asia - $132 billion, North America - $85.6 billion, Europe - $68.5 billion, Africa - $37.3 billion, Latin America - $9.8 billion.

Global Legal Market Trend

Recreational & Medical THC + CBD
Medical THC + CBD
CBD Only
Illegal
Rules for CBD from hemp may differ.

❑ The Hemp Farming Act of 2018 re-classified Hemp as an ordinary agricultural commodity. More than 50 countries had legalized CBD, while more than 30 countries are growing hemp.

❑ Medical marijuana was legalized in 33 U.S. states; the recreational use of marijuana was legalized in 11 states. Following the trend, we can predict the complete legalization of marijuana in North American within the foreseeable future.

❑ Corporate giants, including Microsoft, Heineken, Procter & Gamble, and Coca Cola have entered the cannabis market.

❑ In 2018, California's $30 billion market was the largest in the U.S., but only $6 billion of that was part of the legal marketplace. The global market for legal cannabis is currently $12 billion and is predicted to reach $166 billion by 2025.

What is Cannabis ?

Marijuana
▪ Psychoactive
▪ Contains on average of 18.7% of THC

Hemp
▪ Non-Psychoactive
▪ Contains 0.3% of THC or less

❑ Hemp is a strain of cannabis cultivated specifically for industrial uses. It is bred with a minimal (less than 0.3%) concentration of THC to eliminate any psychoactive effects. Hemp, contains a high concentration of fiber, making it a valuable resource for thousands of commercial products including paper, textiles, clothing, construction materials, and biofuel.

❑ Marijuana, classifies cannabis with higher than 0.3% THC content, usually averaging around 18-20 percent. THC is known for including psychoactive effects. CBD is a non-psychoactive anti-inflammatory molecule.

❑ In 2018 a report conducted by the World's Health Organization concluded that CBD is not harmful to the human body nor is it prone to abuse. The medical benefits of cannabinoids include: reducing anxiety, anti-inflammation, and pain.

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CBD Applications

$5.7 Billion
2019 CBD Market Value

$18.1 Billion
2021 CBD Market Value

❑ CBD products include: tinctures, vape, capsules, creams, facial and skin care , shampoo, food, energy drinks and more. Cannabinoids are being prescribed for the treatment and prevention of serious diseases such as epilepsy, depression, Parkinson's disease.

❑ Nearly ¼ of CBD consumers spend an average of $21 to $50 on CBD products every month. In 2017, the medical and recreational cannabis market in Canada was valued at C$5.7 billion, with and average of $1200 spent by each individual annually.

❑ According to Brightfiled Group's data, the global CBD market will reach $5.7 billion in 2019, and $18.1 billion by 2021.
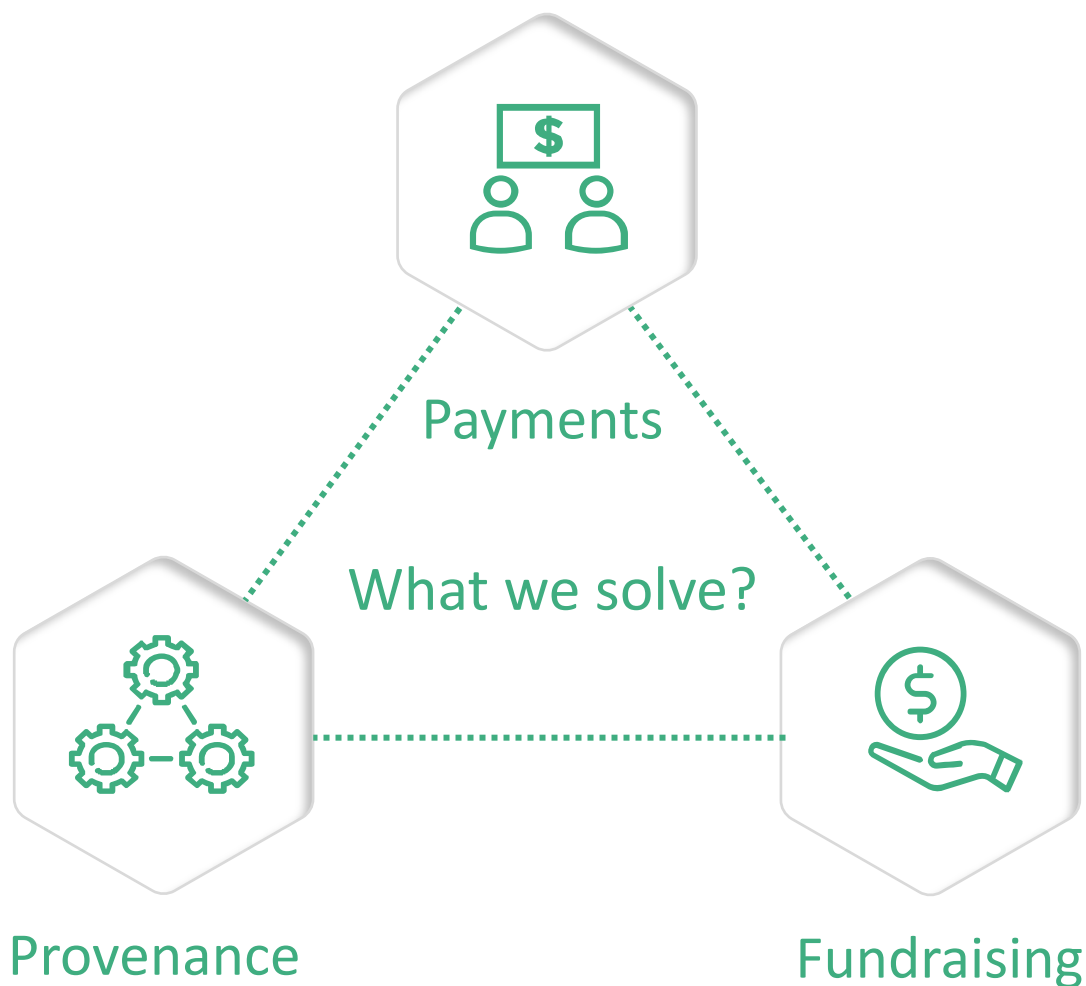
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Industry Problems

Provenance   Payments

Fundraising   Transparency

❑ **Provenance**: There are unclear parameters governing the use, sale, and purchase of cannabis in states that have legalized its production and consumption. The laws are too difficult to enforce.

❑ **Payments**: The U.S. federal law poses many restrictions as to how payment is accepted and stored by cannabis-based firms. Around 80% of the transactions use cash transaction.

❑ **Fundraising**: 33 U.S. states have legalized medical marijuana, but cannabis is still federally illegal. For this reason, cannabis businesses face troubles fundraising and taking loans.

❑ **Transparency**: The lack of transparency and discrete supply chain in the cannabis industry makes it hard for quality assurance.
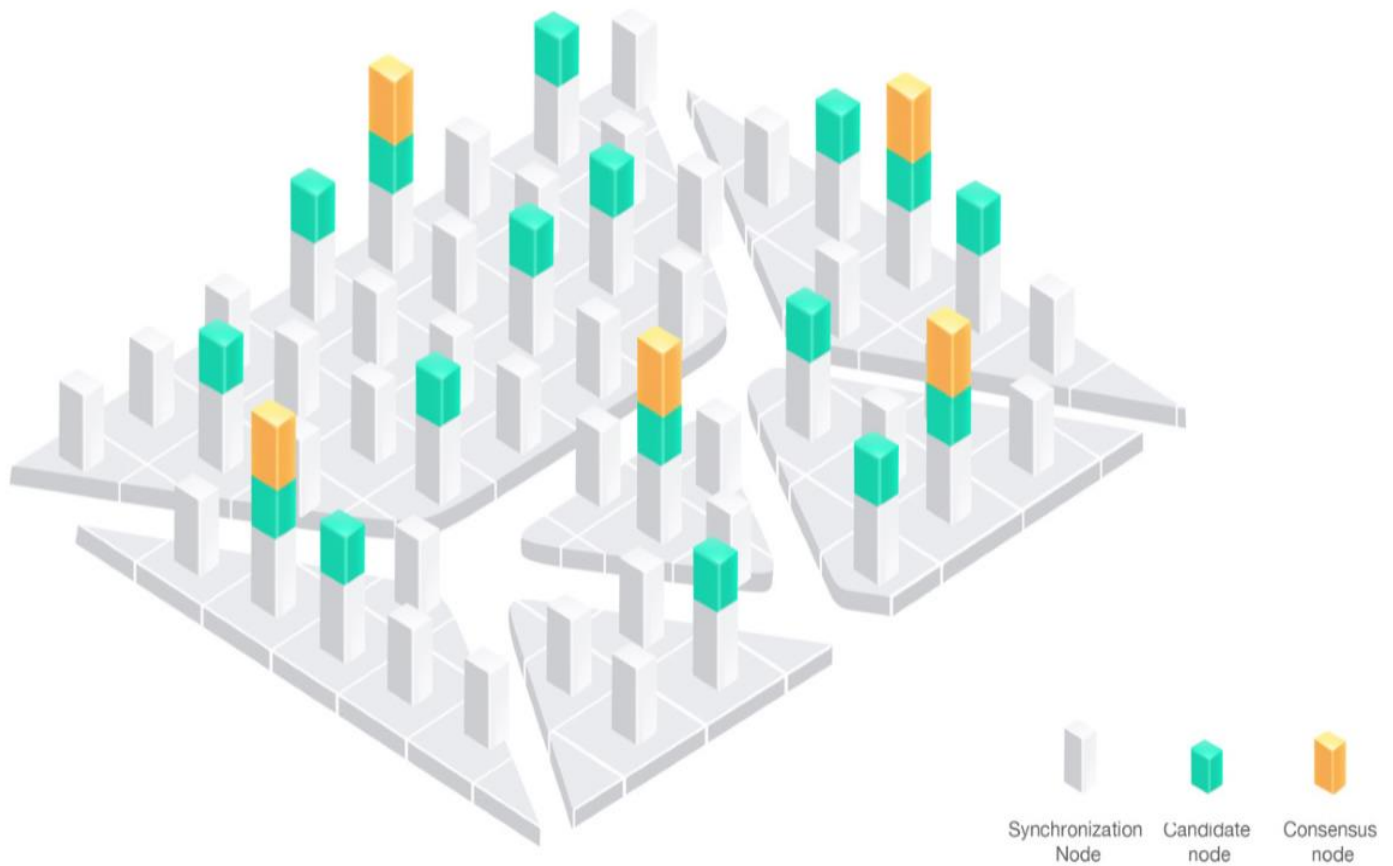
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What is CannaChain ?

Payments

What we solve?

Provenance

Fundraising

CannaChain is the world's first blockchain engine for cannabis, intended to solve the industry's problems of banking and payments, provenance & fundraising by using blockchain solutions. CannaChain aims to deliver secure payments, data on-chain, asset tokenization, and a complete, legal, and closed-loop cannabis ecosystem. CannaChain grants users the ability to benefit from value exchange, seamless transactions, and secure storage. CannaChain provides a decentralized and distributed peer-to-peer trust network, an efficient solution to the cash-payment problem, as well as an immutable, interactive, and traceable database network.

NPOS Consensus Algorithm

Synchronization Node   Candidate node   Consensus node

❑ CannaChain uses Polkadot's scalable heterogeneous multi-chain system as its blockchain structure. It consists of many parachains with potentially differing characteristics. CannaChain uses Substrate as its underlying development framework and Aura + Grandpa as its hybrid consensus algorithm as a default, which is a POS consensus algorithm that supports more than 1000+ nodes, 1-2s to produce blocks, and a maximum of 10s delay to finalize.

❑ Such consensus algorithm gives the dispersion of POW consensus without wasting any energy. It also provides 100% certainty, unlike the probability certainty in POW.

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CannaPay Protocol

To solve the payment issue in the cannabis industry, we have created the CannaPay Standard Protocol which is used to connect payers and payees via a variety of data channels including NFC, Bluetooth, and QR codes. CannaPay is used to validate ownership, and it is used for face-to-face micropayments.

Instant Clearance

Every transaction is a settlement

Decentralized

Peer-to-peer transaction, without a middle man. Everyone can participate in pricing.

Turbo Transaction

CannaChain has achieved high TPS, with each transaction taking only 2-5 seconds to complete.
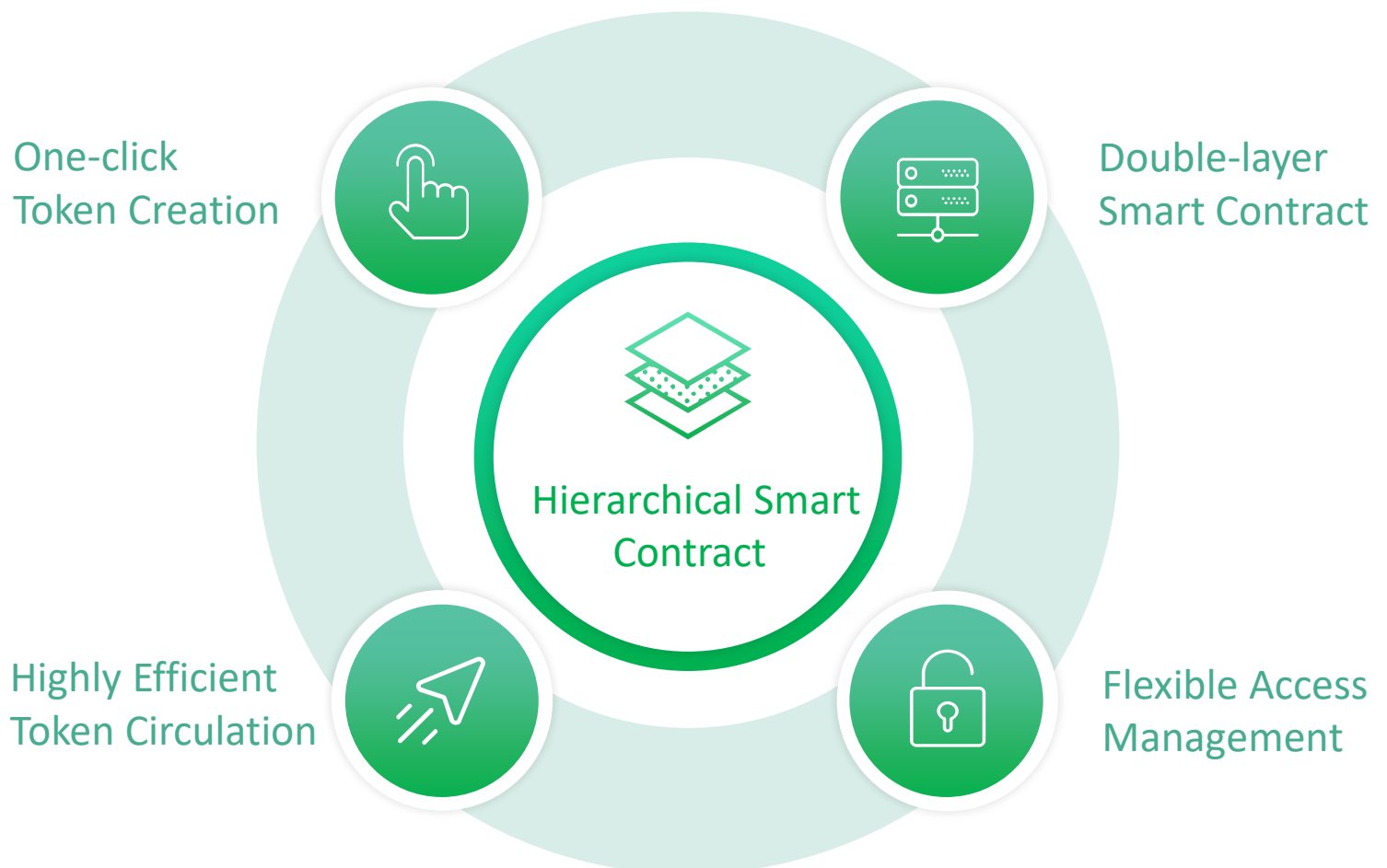
Security

On-chain data is immutable and secure, which solidifies the security of users' assets.

Scalability

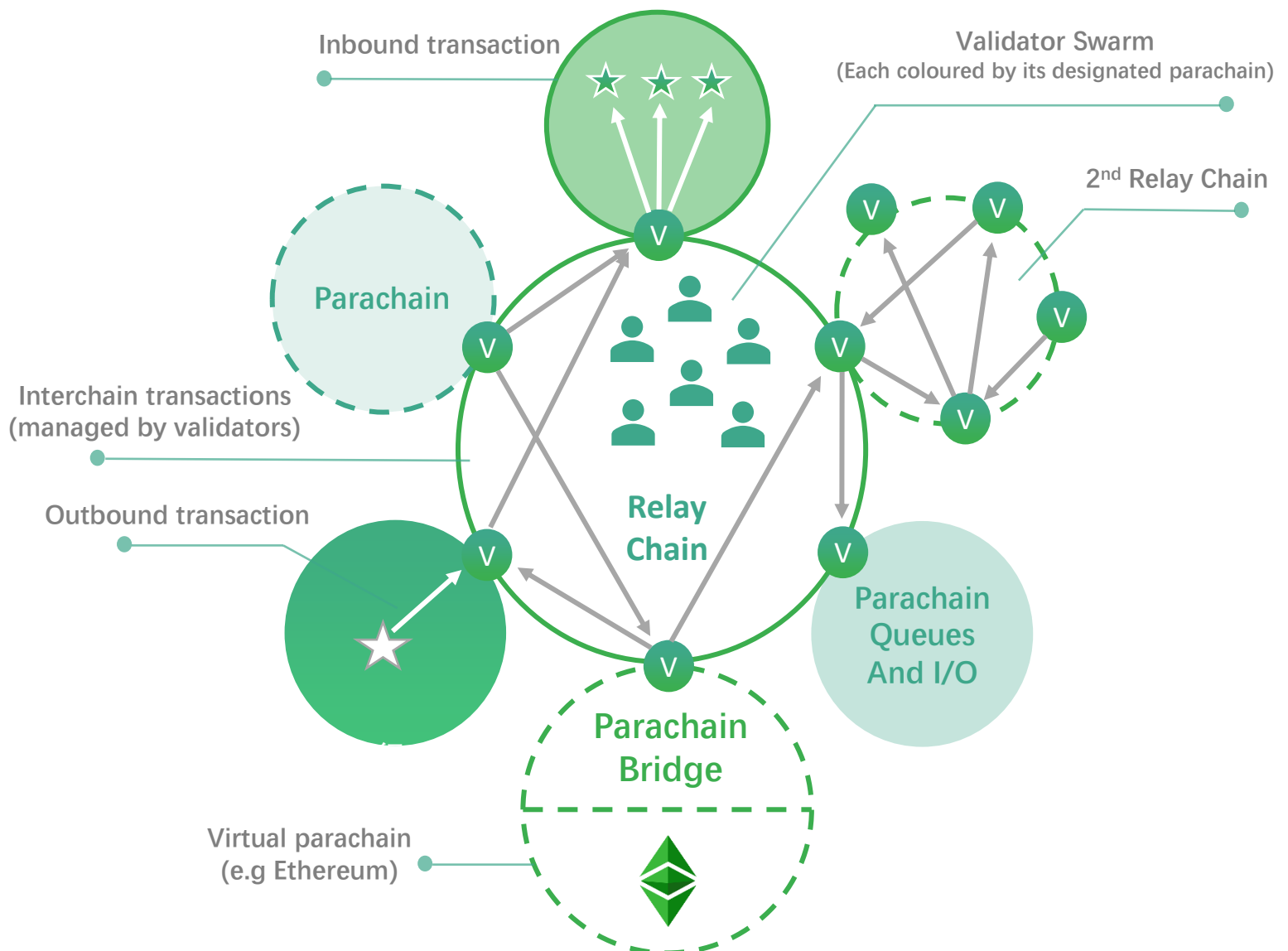CannaPay wallet supports all tokens on ChainChain, as well as cross-chain tokens such as BTC, ETH, EOS.

CannaChain

Hierarchical Smart Contract Design

One-click Token Creation

Double-layer Smart Contract

Highly Efficient Token Circulation

Hierarchical Smart Contract

Flexible Access Management

❑ **One-click Token creation:** Without any technical knowledge, cannabis businesses can create their own token within one click.

❑ **Double-layer Smart Contract:** CannaChain uses a "Hierarchical Smart Contract" design that supports both Turing-complete, and Turing-incomplete smart contracts.

❑ **Highly efficient token circulation:** Token transaction speed is only a few seconds, which allows for more than 100 million transactions to process simultaneously.

❑ **Flexible access management:** Using a simple model to achieve access management. Supports the essential smart contract features, including: joint ownership, private key retrieval, and multi-signature
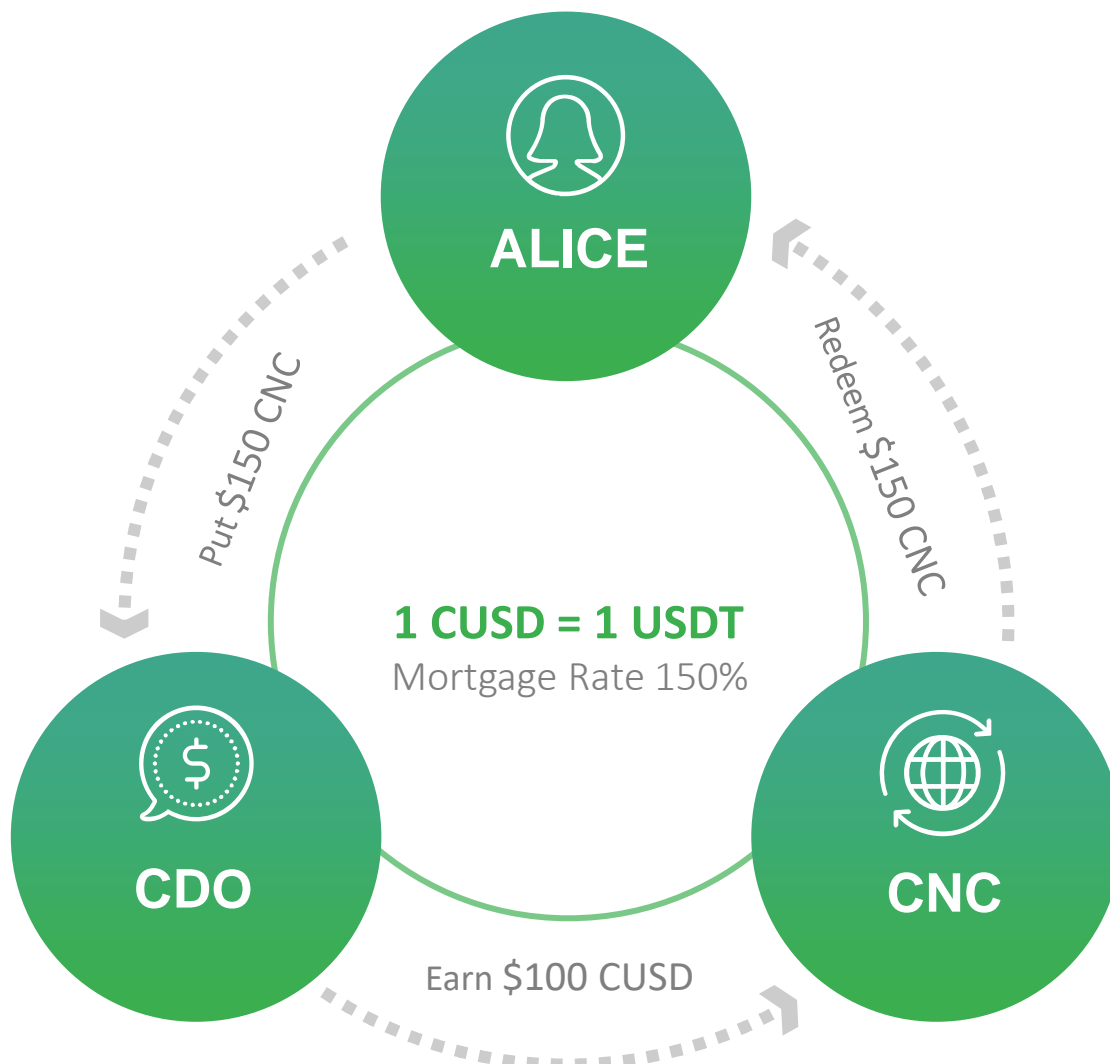
InterChain Communication

Inbound transaction

Validator Swarm
(Each coloured by its designated parachain)

2nd Relay Chain

Parachain

Interchain transactions
(managed by validators)

Outbound transaction

Relay
Chain

Parachain
Queues
And I/O

Parachain
Bridge

Virtual parachain
(e.g Ethereum)

❑ CannaChain adapted Polkadot's heterogeneous multi-chain technology, which uses "bridgechain + Relay chain" to achieve cross-chain communication.

❑ When an Ethereum node tries to communicate with another blockchain, CannaChain will transmit data to Relaychain via the bridge-chain, which is then verified by Validator, and finally routed to the correct Parachain where data is processed.

❑ Every main chain can have multiple Parachains connected via Bridgechain. Individual Parachains can be interconnected by Relaychain, including smart contracts.
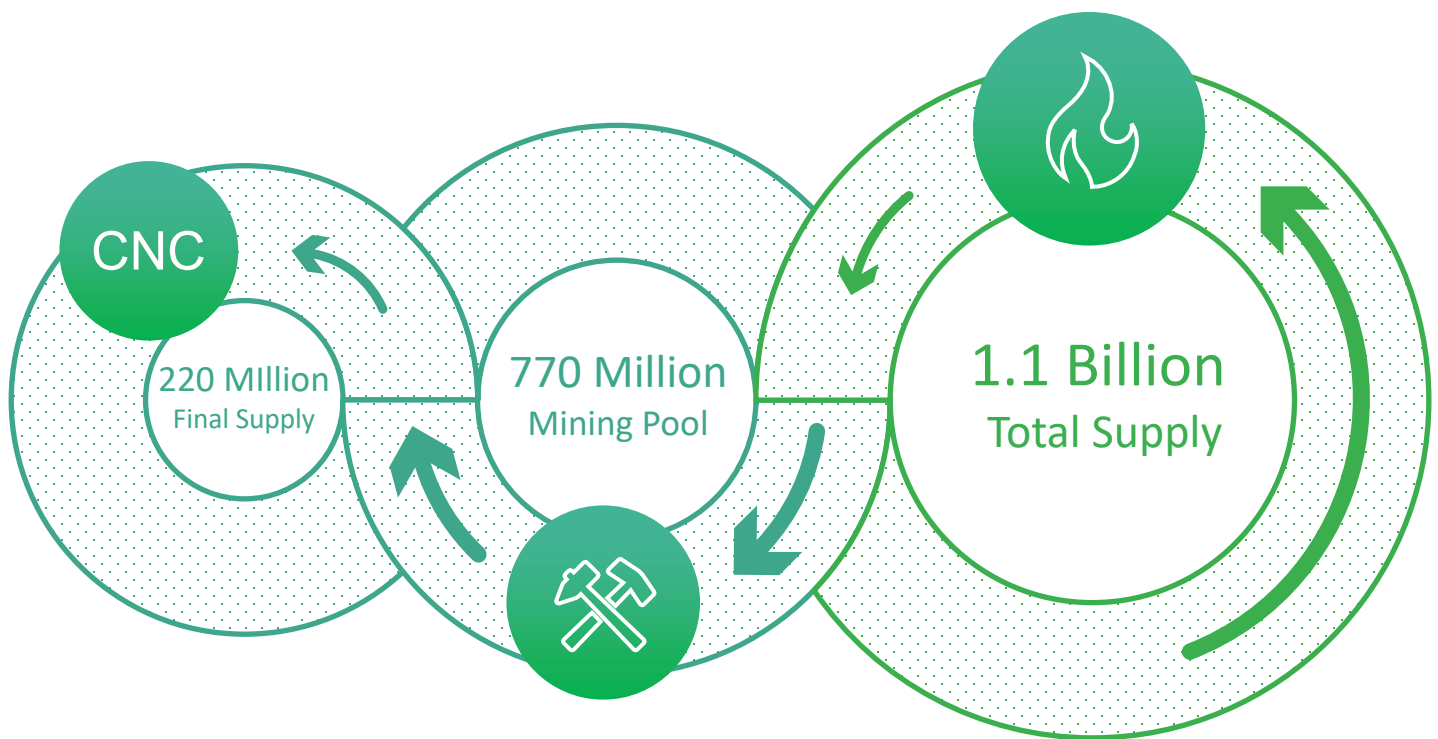
CannaChain

Double-layer Token Design

ALICE

Put $150 CNC

Redeem $150 CNC

1 CUSD = 1 USDT
Mortgage Rate 150%

CDO

CNC

Earn $100 CUSD

❑ CannaChain has two base tokens, CannaToken(CNC) and CannaUSD(CUSD).

❑ **CNC** (CannaToken) uses a POS consensus, with a total supply of 1.1 billion tokens. CNC token is used for CannaChain network governance, and voting rights.

❑ **CUSD** (CannaUSD) is a utility token and also a stablecoin. It will be used for value exchange within the CannaChain ecosystem and cannabis industry.

❑ **CDO** (Collateralized Debt Obligation), is a Dapp running on the CannaChain, similar to the function of a "pawn shop", which keeps users' CNC tokens and generates CUSD stablecoin.
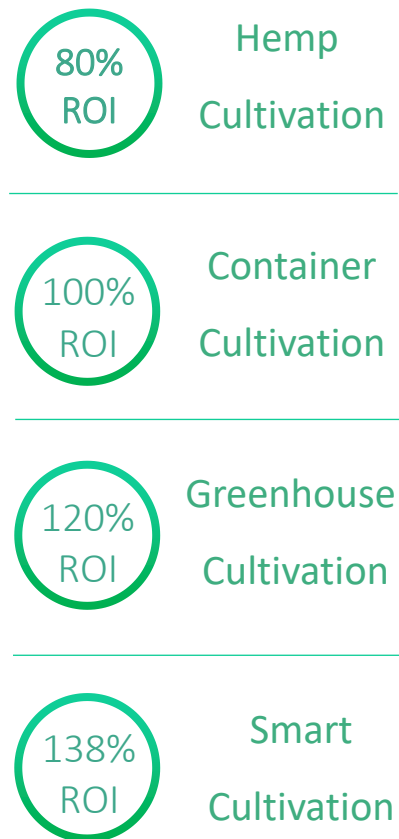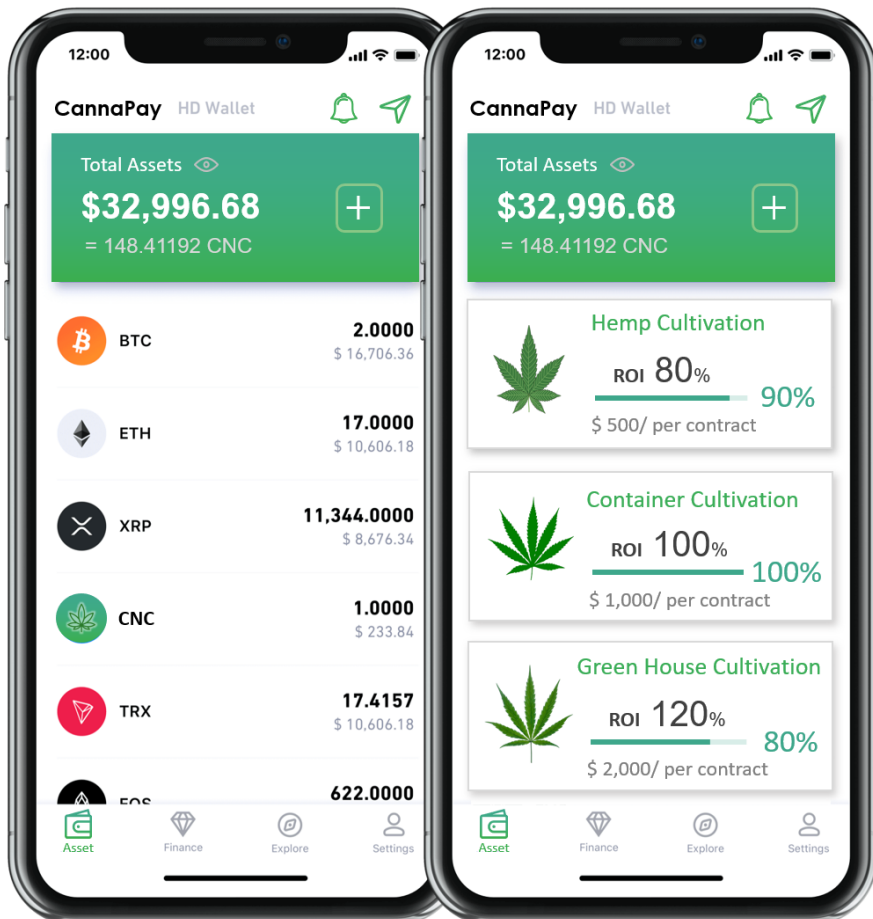
CannaChain

Incentive

❑ CNC Token has a initial total supply of 1.1 billion tokens, 70% of which are used for incentives. Mining pool produces less than 20 million CNC per year.

❑ CannaChain Foundation will use 20% of CannaFund's profit made from its investment in cannabis industry to buy back and burn CNC tokens, resulting in a total of 220 million tokens. The deflationary design of the CNC token will benefit all CNC holders.

❑ Cannabis businesses and consumers can earn CNC Tokens by updating data on CannaChain. And CNC holders get rewards from "double mining", namely, they can earn tokens through Staking, as well as cannabis Cultivation. This design is similar to bitcoin mining pools and hosting.

CannaChain

CannaPay – Decentrialized Wallet

80% ROI	Hemp Cultivation
100% ROI	Container Cultivation
120% ROI	Greenhouse Cultivation
138% ROI	Smart Cultivation

Phone 1 (Asset view):

CannaPay HD Wallet

Total Assets
$32,996.68
= 148.41192 CNC

BTC	2.0000 $ 16,706.36
ETH	17.0000 $ 10,606.18
XRP	11,344.0000 $ 8,676.34
CNC	1.0000 $ 233.84
TRX	17.4157 $ 10,606.18
EOS	622.0000

Asset Finance Explore Settings

Phone 2 (Finance view):

CannaPay HD Wallet

Total Assets
$32,996.68
= 148.41192 CNC

Hemp Cultivation
ROI **80**% 90%
$ 500/ per contract

Container Cultivation
ROI **100**% 100%
$ 1,000/ per contract

Green House Cultivation
ROI **120**% 80%
$ 2,000/ per contract

Asset Finance Explore Settings

❑ CannaPay is a decentralized cryptocurrency wallet for enterprise, consumers, and CNC holders. CNC is used as the base token that facilitates value exchange for both B2B and B2C transactions. CannaPay Wallet accepts more than 10 cryptocurrencies, including BTC, ETH, USDT, EOS, TRX, etc.

❑ CannaPay wallet also designed "Cultivation Smart Contract" for selected cannabis farms. While the farms handle the operations, contract owners can take part in cannabis cultivation and earn the profit. The contract will expire after 3 months to 1 year, with an ROI of 80%-138%.

CannaChain

CannaFund - Cannabis Investment Fund

CannaFund
▶ CannaFund is a cannabis Investment fund, with a focus on cannabis cultivation, extraction, and consumer products.

Investment	Pros	Cons	Profit Period	Anual Return
Cultivation	High Profit, 4 cycles per year	Higher Risk	2-3 mon	300%~500%
Extraction	Lower Risk	Raw Material shortage	2-3 mon	200%~400%
Consumer Product	High Profit, Global Market	Higher Competition	2-6 mon	300%+

Cannabis Cultivation   Oil Extraction   Consumer Product

❑ CannaFund, or Cannabis Ecosystem Fund, is managed and advised by Cannabis industry experts including industry scientists, investors, business owners and operators. Every member has more than 20+ years of experience in the realms of cultivation, operations, branding, and sales in the cannabis industry. CannaFund managers and advisors have also helped businesses through the IPO and Pre-IPO process on NASDAQ and the Toronto Stock Exchange. Examples include NBGV and EAZE in Pre-IPO stage.

❑ CannaFund, uses 20% of its profit to buy back and burn CNC. The deflationary design will benefit both CNC holders and investors.

CannaChain

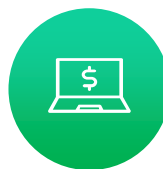# CannaPay POS - Management System

Easy-to-use Interface: Offers the most intuitive and effortless work flow

Remote Control
Setup and manage inventory, remote access to all your data on your phone or ipad

Report Generation
Provides data analysis and integrate cannabis marketing strategy

Track Vendors
Manage all your vendors from any device at any place, wholesale ordering

Manage Customer
Generate customer profiles uses ID swiper or 2D barcode scanner and view their history

Loyalty Programs
Customizable loyalty program will help you drive sales and retain even more clients
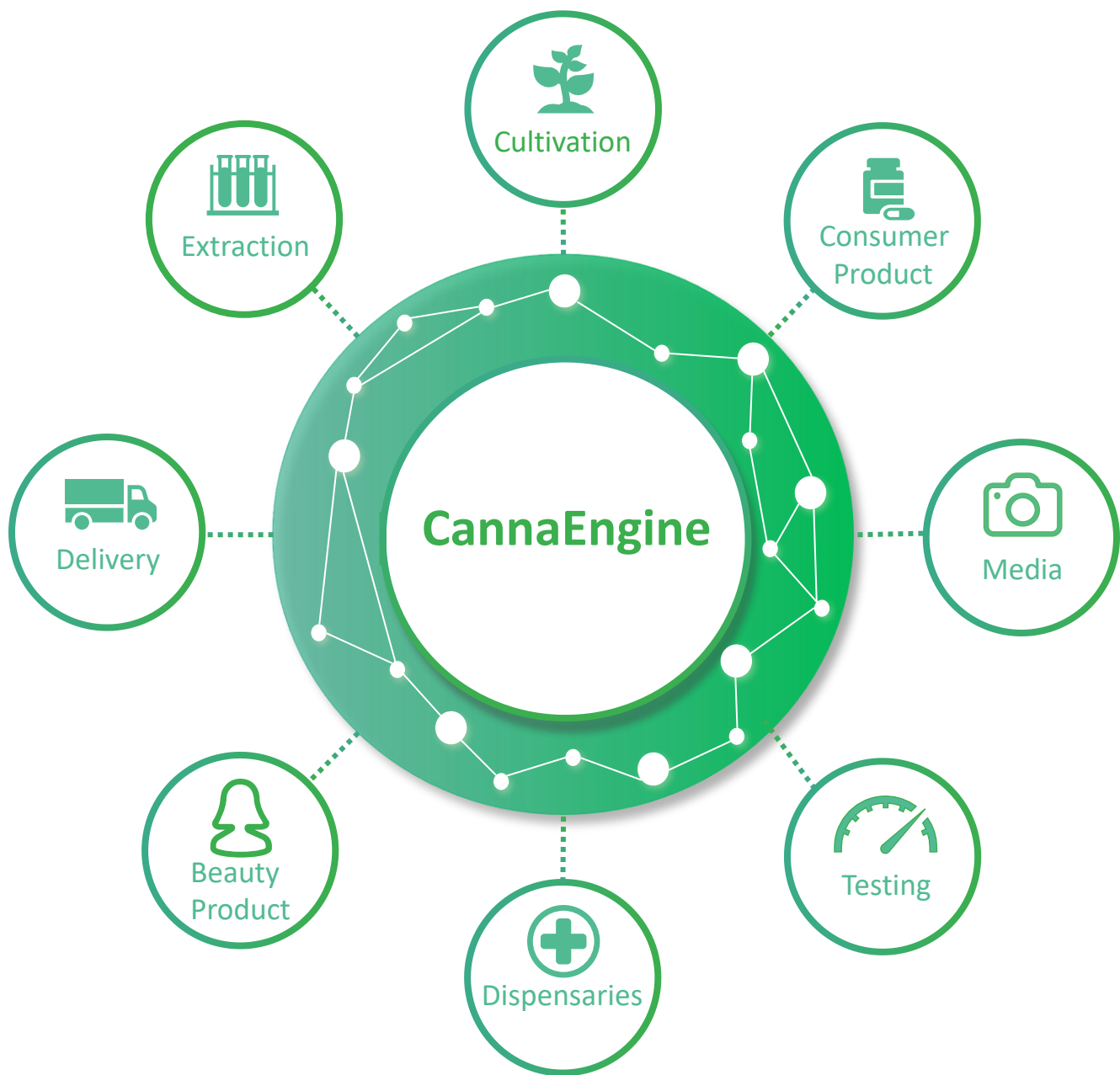
Manage Staff
Customize your staff permissions, Manage your staff in multiple locations

CannaChain

CannaEngine Fundraising Platform

CannaEngine is a platform for fundraising and incubation in the cannabis ecosystem. For selected projects, CannaEngine provides IEO and STO services for cannabis businesses to raise money in the cryptocurrency market. By helping these businesses tokenize their assets on CannaChain using our Smart Contracts, and fundraising through CNC, CannaChain aims to be the "Ethereum Blockchain" for the cannabis industry.
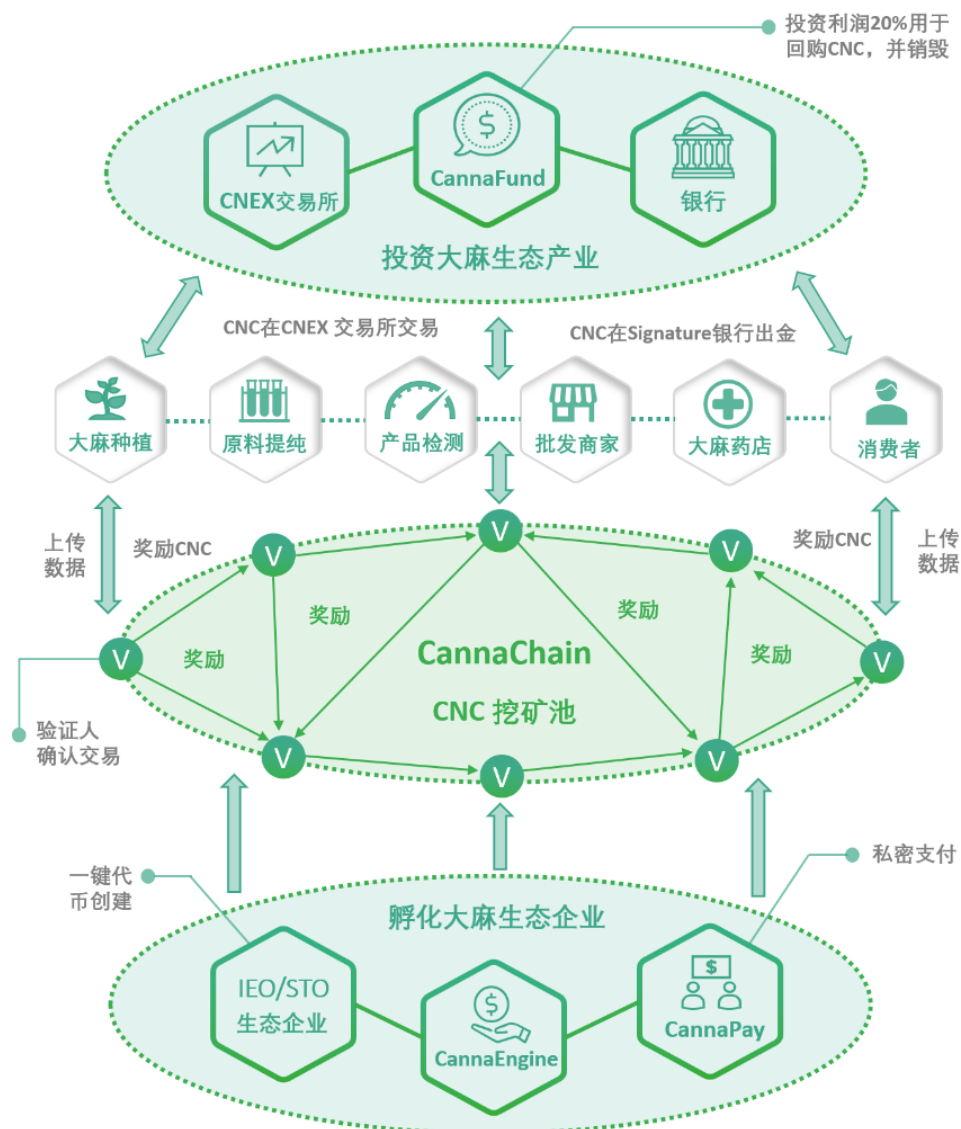
CNEX Cannabis Futures Exchange
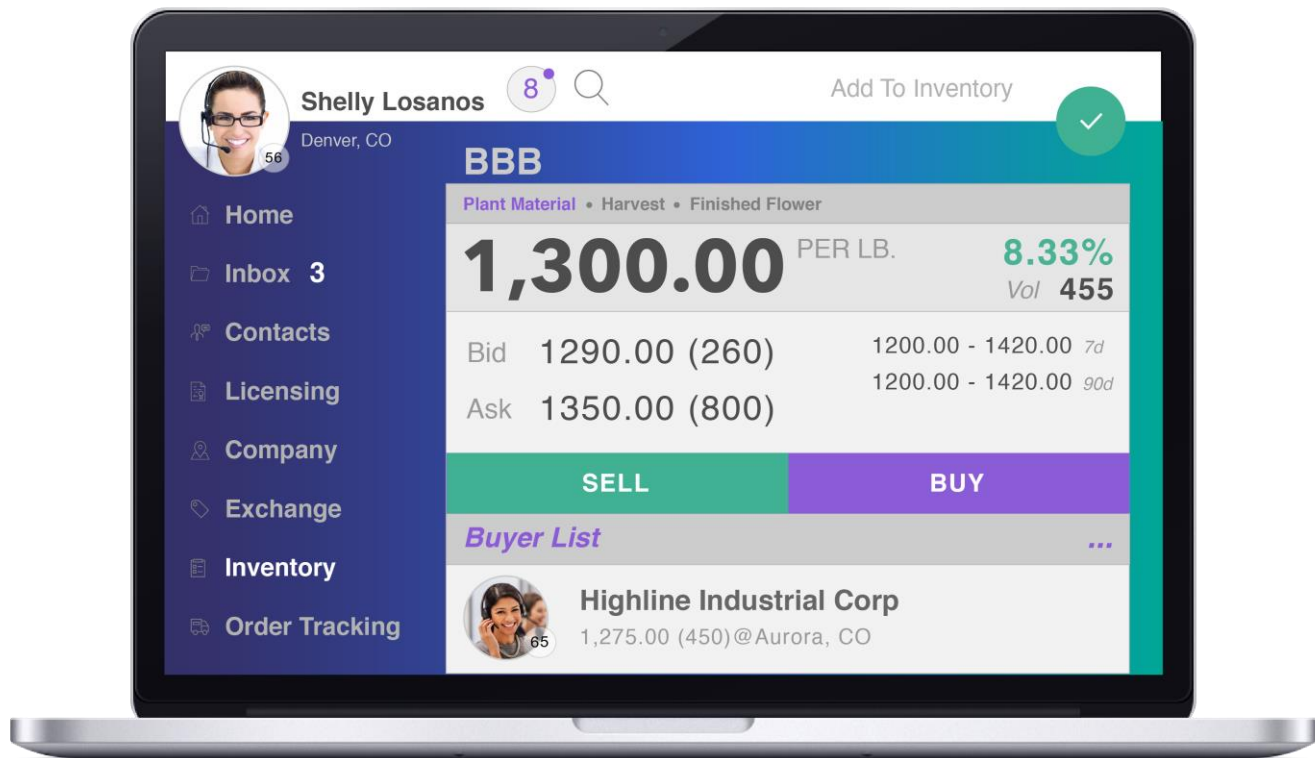
❑ CNEX (Cannabis Exchange) is a cannabis commodities and futures exchange; a platform that connects legal cannabis farms, wholesalers, and consumers. This allows B2B transactions between providers and consumers.

❑ CNEX integrates every part of the cannabis industry from upstream raw materials to downstream final products. Providers, consumers, and investors can easily see price trends, making it easier to buy and sell futures contracts. CNEX lowers the criteria to invest in the cannabis industry, creating an accessible environment for all investors expanding the futures market beyond cannabis businesses.
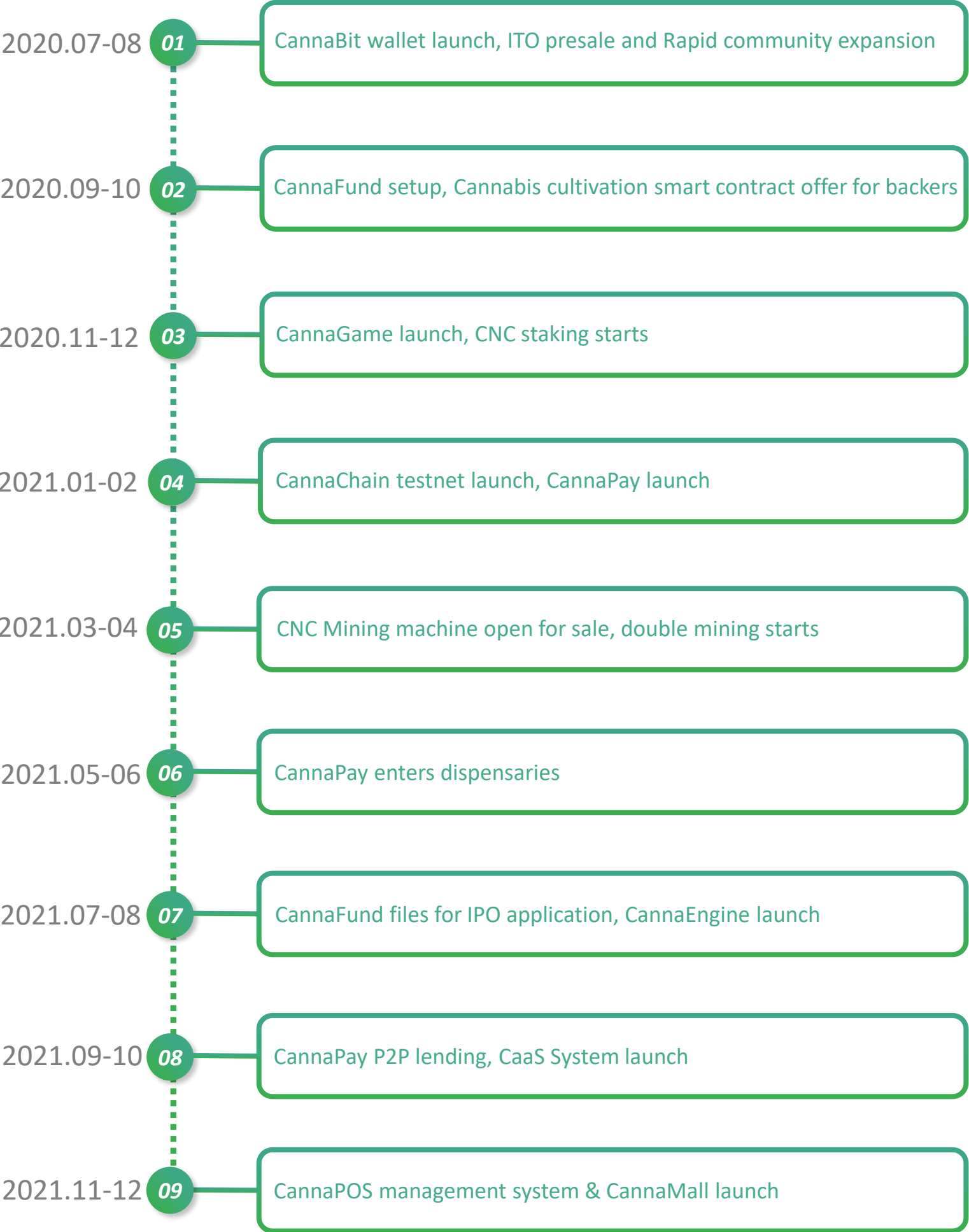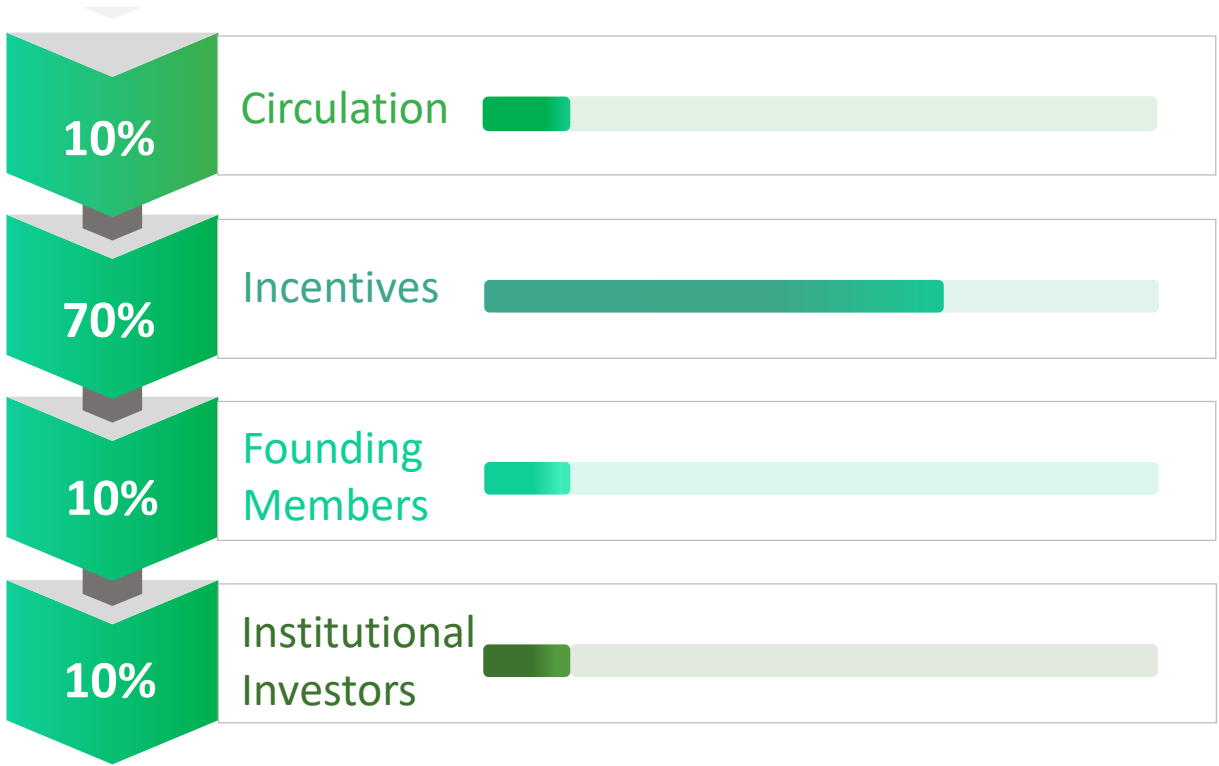
CannaChain Ecosystem

Cannabis businesses and consumers can use CNC Token to achieve value exchange. Businesses can publish their own tokens on CannaChain, and then trade them on CNEX with the option to create cannabis futures contracts. CannaFund has opened a $100 million account at Signature Bank, a New York-based commercial bank that accepts cryptocurrencies. This opens the channel between cryptocurrencies and fiat currencies, allowing for cannabis businesses to have a more efficient deposit and cash out experience. Cannabis businesses can use CannaEngine to raise funds from the cryptocurrency market. CannaFund invests in Cannabis cultivation, extraction, and consumer products, and uses 20% of the profits to buy back CNC Token. This forms a powerful closed-loop ecosystem and economy.

CannaChain

Roadmap

2020.07-08 — **01** — CannaBit wallet launch, ITO presale and Rapid community expansion

2020.09-10 — **02** — CannaFund setup, Cannabis cultivation smart contract offer for backers

2020.11-12 — **03** — CannaGame launch, CNC staking starts

2021.01-02 — **04** — CannaChain testnet launch, CannaPay launch

2021.03-04 — **05** — CNC Mining machine open for sale, double mining starts

2021.05-06 — **06** — CannaPay enters dispensaries

2021.07-08 — **07** — CannaFund files for IPO application, CannaEngine launch

2021.09-10 — **08** — CannaPay P2P lending, CaaS System launch

2021.11-12 — **09** — CannaPOS management system & CannaMall launch

Token Allocation

10%	Circulation	
70%	Incentives	
10%	Founding Members	
10%	Institutional Investors	

CNC Token has a total supply of 1.1 billion Tokens, with 110 millions CNC in circulation. Initial circulation will be 11 millions CNC.

70% of CNC is used as incentives to reward community builders and CNC holders.

10% of CNC is allocated for CannaChain founding team and for foundation operational purposes. These tokens will be locked for 24 months.

10% of CNC is allocated for institutional investors for strategic investments. These tokens will be locked for 24 months.

CannaChain

Investors

MERKLE
默克资本

链杉资本
Chain Fir Capital

HASH VENTURE

Nonce Capital

NB
NEWBRIDGE

Partnerships

weedmaps®

CBDPure

eaze

BAS RESEARCH

Trichome INSTITUTE

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THANK YOU