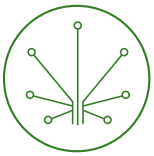

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SOLUTIONS

Green DLT Solutions Whitepaper

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PART ONE

Cannabis Industry Growing Pains

How did we get here?

An understanding of the US cannabis industry has to start with its legal history. Prior to the early 20th century, cannabis didn't have any prohibitions. In two surprising ironies, prohibition began on the state level, and it was Massachusetts in 1911 followed by California in 1913 leading the charge. A number of states followed suit, banning and criminalizing marijuana up until 1937. That year the Marijuana Tax Act was enacted, effectively prohibiting cannabis at the federal level. The act allowed some exceptions for medical use, though fees and regulations significantly curtailed its use. In 1970, the Controlled Substances Act was passed, which officially prohibits cannabis for any use at the federal level. Marijuana became a Class 1 narcotic.

After 1970, some states slowly began an effort to decriminalize cannabis. The strategy focused on decriminalization, as opposed to legalization, as pro-cannabis forces realized small incremental changes would be more likely to be accepted than sweeping overhauls. Oregon acted first in 1973, reducing the penalty of possession to a monetary fine. In 1978, New Mexico passed the Controlled Substances Therapeutic Research Act, opening the door for medical marijuana research and applications. As other states passed limited medical cannabis laws and pushed for decriminalizing the use of cannabis the tension between State and Federal laws increased. The conflicts were limited to medical use and decriminalization, as opposed to recreational use and legalization, so there was not much impetus for action.

That changed in 1996, when California became the first state to legalize medical cannabis with the passage of Proposition 215. Legalization versus decriminalization marked a pivotal divergence between state and federal authorities, but again, pushing for only medical use reduced the incentive for Federal lawmakers and enforcers to fight with much vigor. It was a masterful strategy, and as a result, a handful of other states followed California's lead, with varying degrees of success up until 2012. That year marked the first state efforts to legalize the recreational use of cannabis. For the first time since 1970, states' rights versus federal rights takes center stage for the average citizen. By this time, society's attitudes had shifted significantly towards a positive view of marijuana, which provided the opportunity for legitimate business expansion. But in order to capture business from a pro-cannabis population, the business community now has to navigate the often conflicting legal environments on the state versus federal levels.

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Uncertainty is the Great Inhibitor

How does a legal business entity in Colorado continue to operate legally on the federal level? First and foremost is the question of taxes, as no legitimate business wants to run afoul of the IRS. But even before paying the "proper" taxes, how a does a business process transactions? If the Colorado business buys empty cartridges on a credit card from a near-by business that is across state lines, have they committed a federal crime? Has the bank behind the credit card transaction committed a crime? These are serious topics, and there is a lot of evidence that the risk is not worth any potential reward, particularly from the perspective of the banking community.

It is estimated that the legal marijuana business recently hit $9BB USD in sales. Of those businesses involved, only 30% have bank accounts. Putting aside the logistic and security concerns that ~$6BB in cash transactions would entail, why would banks turn down such large chunks of business? The short answer is criminal prosecution and regulatory punishment.

The long answer is even more ominous for banks. Any bank that provides services to a marijuana business could face possible criminal prosecution for "aiding and abetting" criminal activity and is particularly susceptible to Anti-Money Laundering (AML) Laws. This is in addition to potential regulatory punishment from the Treasury Department for failure to comply with the Bank Secrecy Act, as well as independent bank regulators who can impose civil monetary penalties, fines, cease-and-desist orders and banishments. Listing on US stock exchanges is not an option. All of which makes the requirement to submit Suspicious Activity Reports (SAR) for every transaction with a marijuana business seem like expensive child's play. Given all this, the real surprise is that 30% of marijuana businesses are actually given banking accounts at all.

Life in the World of The Unbanked

The legal and regulatory environment has led to many US marijuana businesses joining the ranks of "The Unbanked". Without access to banking services, including lending, bank accounts and payment processing, these businesses are severely restricted. They most often lack funding to scale their business. The lack of liquidity and access to credit, makes regular business functions difficult, and expansion is also severely restricted. Businesses are forced to revert to cash-n-carry business practices, which are logistically prohibitive. For example, $10,000 USD composed entirely of $20's is 2.15 inches thick. The $20 dollar bill is also the most frequently counterfeited bill in the US. Cash-n-carry business practices are also prohibitive from a safety and security perspective. These businesses are prime candidates for robbery, assault and fraud crimes. Entities try to limit their risk by reducing the number and size of their transactions, or incur the additional costs of security and verification.

The explosion of the cannabis industry in Canada is obviously a result of its universal (in Canada) legality, however even in Canada US Federal laws inhibit growth. Most Canadian based companies have used access to capital markets via the stock exchanges to raise the funds needed to scale business. This is a onetime capital injection. For daily business operations, the services of the banking system are required. Most banks are international, and risk averse, particularly when it

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comes to US banking laws and regulations. This makes banks reluctant to facilitate cross border transactions. The clear cut illegal activities are easy to avoid, but it's the grey areas that cause the most concern. Consider the Canadian company whothat wants to source its packaging and containers from a US company? All cannabis adjacent activities must submit SAR reports, and run the risk of AML laws among other negative consequences. As a result, even in places where cannabis is fully legal, US Federal laws have a strong gravitational pull.

Can and Should You Provide Banking-Like Services to The Unbanked?

The two biggest challenges facing the nascent cannabis industry are: 1) Iis there a way to provide banking services in a legal, transparent and trustworthy way? We address this question here. 2) Will the US maintain cannabis illegality long enough on the Federal level to make any investment in solving #1 worthwhile? Another way to frame the second part of the question is to ask if the US Federal situation changes in the near future to make cannabis fully federally legal, will any of the solutions provided in part 1 of the question still have commercial value worth the investment. This question is addressed here.

History is filled with business ventures combining and applying existing technologies in novel ways to generate value. Think the Ford Model T. We will take that approach here as well. One promising area for potential solutions is the world of Distributed Ledger Technologies (DLT). DLT solutions are already being applied to Main Street businesses in the US today and new applications are being tried and deployed constantly as innovation expands the modern business toolkit. In Part 2 of this series, we examine what DLT is, and just as importantly what it isn't. We look at some of the problems it is currently solving, how it solves them, and if any of this technology can be expanded to new and exciting areas in the intersection of business and banking in the future.

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PART TWO

A Hitchhikers Guide to Distributed Ledger Technology (DLT)

In Part 2, we aim to define the key terms in the suite of technologies that comprise the DLT ecosystem. Calling things by their proper names helps to avoid confusion and provide clarity, and is the prerequisite for understanding the goals and purposes of DLT. Once we have a clear understanding of the terminology and purpose, we will examine the way in which DLT accomplishes these goals. This includes the ecosystem architecture, the data structure, as well as the key problems and obstacles facing any DLT solution.

Terminology

Blockchain vs DLT? There are many strong opinions on the difference between blockchain and DLT. We think of blockchain as a type of DLT, in the same way that a Kleenex is a type of tissue. The popularity and early adoption has caused both terms to often be used interchangeably. For most casual purposes, this is fine. For us, DLT is a suite of technologies and the application of these technologies to solve business solutions. Its primary features are 1) it runs on the internet 2) it consists of a series of nodes that distribute and verify all of the ledgers in the system 3) it requires security solutions to ensure the integrity of the data and prevent malicious actors and 4) its value proposition is that it disintermediates many middleman functions.

Blockchain is a specific type of DLT with a unique and specific set of features. It has a decentralized database. Its database is shared by means of blocks that form a chain. A block is a packet of information that is protected by a cryptographic signature called a 'hash'. Each subsequent block in time begins with the same hash, which is the mechanism that ensures the encrypted information has not, and cannot, be manipulated. The most famous, as well as the first, application of blockchain technology is Bitcoin currency. This is the reason the term Bitcoin, blockchain and DLT are often conflated. To be clear, Bbitcoin is a cryptographic currency, which uses blockchain technology, which is a very specific type of distributed ledger technology.

There are two more terms to define. The first is 'algorithm'. An algorithm is a sequence of instructions to be completed by a computer. The second is 'peer-to-peer' (P2P) systems, or networks. A P2P system consists of distributed software to a set of nodes, the number of which is usually unknown, which makes their computational resources directly available to one another. P2P networks are the key to disintermediation. However, a P2P network cannot exist on its own. This network must maintain its integrity in an environment of unknown trustworthiness, especially when there is great incentive and opportunity for malicious actors within the environment. We address this here.

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Purpose of DLT Suite of Technologies

The original application of blockchain technology was Bitcoin. Blockchain was the key technology that Bbitcoin sat on and was first introduced in Satoshi Nakamoto's seminal 2008 white paper "Bitcoin: A Peer to Peer Electronic Cash System". Bitcoin was described as a "purely peer-to-peer version of electronic cash", and the key problem that blockchain solved was how to ensure digital trust in an open and uncertain (from trustworthy perspective) environment. It took some time for the marketplace to recognize blockchain technology's use cases away from the cryptocurrency ("coin") application. The key characteristics that allows blockchain to be applied independently from cryptocurrencies are: 1) it can be applied to any asset, not just currency and tokens 2) anonymity is not required for blockchain to work and 3) in a non-anonymous, non-currency, application consensus can be achieved via selective endorsement as opposed to proof of work. These differences will become important when thinking about appropriate applications.

Upon recognizing blockchain's ability to establish digital trust, the door was opened for many other blockchain applications above and beyond the world of cryptocurrency. Creating an open, decentralized ledger that records transactions between parties in a permanent way without needing third party authentication, allows practitioners to create networks that significantly reduce transaction costs by cutting out as many of the middle men as possible. It also can be used to solve work flow inefficiency problems. Finally, the market is beginning to recognize a secondary benefit for non-coin applications as well. Database scientists are rapidly expanding their use of DLT to organize, store and retrieve data in many new and exciting ways.

Proof of Work (POW) is the key to blockchain's trust and consensus models. There are a host of other trust models that can also be used within DLT. This includes Proof of Stake, Proof of Importance, Tangle, PBFT and DBFT. In addition to achieving consensus thru mining, system architecture can provide elements of digital trust. The most common being full or partial centralization of the P2P. Centralization can take the form of white lists, clearing corporations, regulatory oversight to name a few. There are pro's and con's to achieving trust throughu centralization. Purists see decentralization as a key libertarian goal, while business practitioners are more agnostic. The choice made here should be best fit for purpose.

To summarize: P2P systems are the key to unlocking value in the ecosystem by removing middlemen, thus efficiently processing and recording transactions and as a result reducing transaction costs. Blockchain is the technology that uses cryptographic hash functions in a sequential order as Proof of Work (POW) for the purpose of establishing the digital trust required for market actors to transact confidently in the ecosystem. DLT is the suite of technologies which allows the P2P system to interact in a robust, secure, decentralized and usable manner. More succinctly, the purpose of P2P system is to increase efficiency and reduce transaction costs, DLT solutions exist to provide the trust in, and integrity of, the system. Blockchain is a specific solution that uses cryptographic hash functions in POW as one element of providing trust to a P2P system.

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DLT Ecosystem Architecture

Let's now examine the design process of DLT architecture. We must first start with a few assumptions:

A purely distributed P2P uses the internet to connect nodes

The number of nodes, the reliability of the nodes, and the trustworthiness of the nodes can never be known with 100% confidence

The goal of our DLT solution is to manage the ownership of digital goods (please note, it is the P2P system that provides value to the ecosystem, the DLT solution is merely a cost, making sure theat system is safe, secure and reliable)

There are a few critical steps to managing the ownership of digital goods.

1. Describe what constitutes ownership and define what rights ownership confers.

2. Ensure ownership rights are protected.

3. Store data transactions, both for trust reasons and also because at some point in the future that data can be transmitted into actionable intelligence, and therefore has value.

4. Prepare a ledger system to be distributed in a trustworthy way into an untrustworthy environment.

5. Define and implement the system of distributing the ledgers.

6. Define and implement the protocols for adding and verifying new transactions to the ledger.

7. Design and implement the protocol that defines which ledgers represent the truth.

Describing and Protecting Ownership

When documenting ownership of a digital asset, it is useful to differentiate between inventory data and transaction data. Inventory data is the stating of assets and identifying which party has claim to said assets. This describes any sets of assets and the claims related to those assets at any unique point in time. Transaction data provides the functionality of explaining and justifying the changes to claims on assets and is useful in describing the history of changes in ownership over a period of time. Both concepts are critical elements in protecting ownership when it is most vulnerable: during the transfer of ownership.

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During the period of vulnerability when ownership is transferred, there are 6 pieces of information required to minimize this vulnerability.

1. ID seller (i.e. account #).

2. ID buyer (also account #).

3. Amount of goods to be transferred.

4. Time of the transaction.

5. Fee paid to the system. In a typical DLT system, users will tell the system, in advance, how much they would pay for a transaction.

6. Proof that the seller agrees to transfer ownership.

These 6 pieces of data need to be augmented with additional protocols to provide robust security during transfer. First, the system must maintain order, in a time based manner. Second, formal correctness is required, i.e. all fields must be populated. Third, the system must be designed with semantic correctness, i.e. there must be a correct business understanding of the fields required. Finally, there must be an authorization from the seller that says it's ok to complete the transaction. There is a subtle distinction between this final criteria and information item #6 in the previous sectionparagraph. Proof that a seller agrees to transfer could be a signed contract that says if $100 hits my account by 5pm, I will transfer ownership, whereas authorization from the seller would be the seller seeing the $100 hit the account and saying transfer is approved.

Data Structure as a (Critical) Component to DLT Ecosystem Architecture

When it comes to data structure, the main goal is to ensure integrity throughout the system. System integrity reinforces human trust in the overall ecosystem, and is critical to the adoption, use and long term success of any platform. Achieving system integrity through data structure requires two core concepts.

One core concept is that more independent witnesses verifying ownership is better. Verifying ownership means identifying the owner, the object being owned and then mapping the owner to the object. This mapping can be done via ledger or register. Ownership has two main elements, proof of ownership, and use of ownership. For proof of ownership, the data structure has to include mapping, and identification, which properly id's both the property and the owner. For use of ownership, the data structure must account for authentication, which is similar to providing a password, and authorization, which is analogous to providing a signature.

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The second core concept is transparency. System architects must have a clear policy stating their position on transparency, which increases integrity and trust on the platform, versus privacy, which is a critical element for businesses wishing to transact in the marketplace. System architects must also decide if the platform will prove ownership, allow the transfer of ownership, or a combination of both. Another transparency design consideration is deciding who can read the ledgers and how they can access them, versus who is allowed to write to the ledger, as well as the protocols required to make writing to the ledger robust, safe and secure. The final transparency consideration is how to purely distribute the ledger in which a majority of the peers on the network agree.

It is often the case when designing something new that only the current use case is considered. This may lead to an optimal solution for the current problem, but may restrict future use cases down the road, or at the very least require patches, adaptations and code changes later. No one person can think of every potential future use case, however the infrastructure and data collection and storage of any DLT system solution lends itself very strongly to factoring, peer-to-networking lending, and securitization use cases. Time spent considering these potential future uses during the planning phase of development would be a wise investment.

Known, Fundamental Problems in the DLT Ecosystem

Even the most thoughtfully designed architecture will encounter obstacles that could threaten the entire ecosystem. The common elements of all obstacles is that they introduce a threat to the trust in the system, the integrity of the system, or both. Each obstacle can be further categorized as the result of either technical failures or malicious actors. The main problem for system architects is designing a system in which there are an unknown number of nodes in the system, and trustworthiness of each node is also unknown. In the case of an open, truly decentralized system, not only are these both unknowns, but they are unknowable always, as new nodes are constantly added and removed from the system.

The system architect must also consider three common problems that threaten the trust and integrity of their system. They are widely known as the Double Spending Problem, the Byzantine General's Problem and the 51% Attack. We'll briefly review each here, but leave investigation of the ways to combat and prevent each to future investigation.

The Double Spending Problem

A single dollar can be spent multiple times as it moves throughout the economy, but it can never buy two packs of gum at the same time. This is not the case with digital assets. Digital assets can "buy two packs of gum at once" in one of two ways. One way is by the copying of the digital good and having that copy appear in the distributed, and consensus approved, ledgers. When copying digital goods, the malicious actor has in fact duplicated a digital asset, as opposed to creating a reasonable facsimile of one. This violates the integrity of system by creating inconsistency in the data.

The second way a double spend could occur is by taking advantage of the time it takes for a transaction to happen and the system determining the new consensus ledger and distributing it to the system. Flaws in design could allow for a digital good to be "sold" to two parties at the same time,

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and have both transactions become part of the approved consensus ledger. This threatens the integrity of the system by introducing doubt as to true ownership, as well as the loss incurred by at least one of the parties that paid for a digital good they will not receive.

Byzantine General's Problem

The Byzantine General's Problem (BGP) is a classic problem faced by any distributed computer system network. Using a fictitious historical event as an example, the Byzantine Empire that has decided to capture a city. The city is surrounded, but won't surrender and is capable of putting up a devastating fight that could cripple the Byzantine army. The key to taking the city and keeping the army intact is for the surrounding army to act completely in unison. They must either all attack at once, or if resistance is too fierce, they all must retreat at the same time. If either action is not done simultaneously, then the army faces complete annihilation.

The army is led by commanders, who can give orders to lieutenants, who give orders to the men. In the case of BGP, some of the commanders and lieutenants are actually enemy spies, and actively want the Byzantine army to fail. To achieve their nefarious ends, they can either disobey the message or they can transmit the message to the next lieutenant incorrectly. In the applied case of DLT systems, there are only lieutenants, no commanders, but it doesn't change the crux of the problem. That crux is "how do you get every lieutenant (node) to agree and act upon every message that is transmitted between them?" The answer lies with algorithms that have been created which require highly computationally expensive replications in order to retransmit the message, and there needs to be a critical majority of retransmissions in agreement in order for the message to be agreed upon as true. Blockchain, and its Proof of Work algorithms are the most famous of these solutions. The major weakness in this solution is the vulnerability to the system when more than 50% of lieutenants are spies.

51% Attack

A malicious entity that achieves >50% of the network nodes could hack the system. This weakness was identified in the earliest days with the birth of Bitcoin, but it was assumed that the protocols employed via cryptography and the cost of computation (aka "mining") would make any hacking attempt uneconomical in the extreme, and thus the system was safe from hackers. Recently however, the number of attacks on specific DLT systems, specifically cryptocurrency has been increasing. This is largely due the change in economics (from boom to bust for most, if not all cryptocurrencies). Any system designed for business must be cognizant of the 51%, and prepare multiple layers of defense.

Summary

In this section we clarified the terminology commonly used in DLT ecosystems, we've identified the purpose and goals of each key component in the DLT system, identified some core system and data architecture considerations, and finally examined a few common and structural problems that every DLT solution must face. We take this background with us to Part 3 of this series, where we examine the application of DLT solutions to the cannabis business.P uses the internet to connect nodes5. Fee paid to the system. In a typical DLT system, users will tell the system, in advance, how much they would pay for a transaction.

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PART THREE

Come Together, Right Now, Technology

In Part 1, we concluded that the biggest problem currently facing the cannabis business is the lack of access to banking services. We stand by that assessment. But any solution that attempts to circumvent and end run the banking and legal systems is doomed to fail, and spectacularly so. We are firm believers in "render undo Caesar what is his". Given this outlook, we look to reformulate the primary issue facing cannabis companies in a way that allows businesses to provide meaningful economic and legal solutions.

If you strip away all the many financial features and services that banks provide to businesses, the main bank functionality is the introduction of TRUST to a network of buyers and sellers and producers and consumers. The store owner is confident enough to let a customer walk out of their store with one of their goods after swiping a piece of plastic thru a machine because they TRUST that they will be paid. That is a powerful idea, and a very valuable service. But it is not the exclusive domain of the banking industry. Let's examine a few examples to how this works.

The cash-n-carry business model puts severe limitations on market participants. The logistics of large amounts of cash, combined with the risk of theft, restricts most fiscally responsible business owners. Even if the amount of cash could be carried in a single bill, and no criminals ever existed, the use of cash for business constricts that business's ability to grow and expand. The introduction of trust, via the mechanisms of credit and liquidity, is one of the most compelling use cases for a DLT solution in the cannabis industry.

Use case 1: Introducing Trust, via credit and liquidity, to the network

Here's how it works. There are four major ways to introduce trust into a network, via credit and liquidity.

1. Extend days to pay

2. Conditional volume discounts

3. Performance guarantees

4. Introducing margins structure

We'll address each way in detail in due course, here we will highlight two points. First, each way

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changes either the timing of the payment, the amount of the goods in the transaction, or the risk of loss. Second, each of these ways has an exact compliment in the main street business world, except the problem and the solution are inverted.

For example, on "Main Street", the manufacturer who makes board games "sells" their product to big box distributors, but big box distributors do not have to pay the bill for 30, 60 or 90 days in the future. Meanwhile, the board game manufacturer has weekly payrolls and monthly utility bills, etc., and needs the money now. To get this money, the manufacturer may need to take a small business loan, usually at a high rate of interest. Meanwhile, the big box distributor is sitting on a pile of cash, with limited opportunities to earn return on that cash on a short duration horizon. In this main street example, economic value can be extracted for all parties by compressing the payment delay. There are real world solutions currently addressing this.

In the world of cannabis, and any cash-n-carry business, the exact opposite problem exists. A vape pen distributor has orders to fill 100,000 THC oil infused cartridges, and could sell them for $10 apiece, wholesale. The oil required to fill the order costs $500,000. Each empty cartridge costs $2. The vape pen distributor only keeps $100,000 of cash on hand, and as such cannot possibly meet the full extent of demand. If the order is all-or-none, the distributor has just lost a $200k profit (you must subtract labor, distribution, etc.). Efficient market economists will conjecture that this demand will be met by other vape pen distributors. But the point is that this market is not efficient, because transactions requiring large amounts of cash immediately are not efficient, and thus economic opportunity is lost.

In the vape pen example, extended days for payment would be an excellent solution. The pen distributor could buy the cartridges and oil on 60 day payment, get delivery within a week, have the cartridges filled and distributed mere days later. Now the purchaser of the filled cartridges would be faced with the same dilemma, i.e. paying in full in cash. The pen distributor could offer a few potential solutions: the buyer could pay in 30 days, which would benefit everyone involved, or the buyer could pay on margin, which is to say, pay some percentage of the total immediately and the rest 60 days later. If the buyer paid the pen distributor $700,000, then the pen distributor would have some cash on hand for ~40 days, and still be able to pay both the oil producer and the cartridge maker, and their only risk is the loss of labor and profit. If cartridges are normally $10 a piece, the pen distributor could propose to the buyer that paying in 30 days or less would reduce the unit cost to $9. Finally there could be an investor or marketplace of investors who would be willing to provide a performance guarantee on said transaction for 10% of the value at risk. All of these solutions are viable independently or in conjunction with one or more other solution. The beauty of this framework is that those who can best bear the risk, as indicated by the price at which they are willing to sell it, will bear that risk, while those unable to bear the risk have an outlet to offset that risk. This is capitalism at its absolute best.

Use case 2: Building Credit Profiles

What do FICO scores, Uber ratings and Yelp reviews all have in common? They are all useful metrics for making decisions on who to interact with, and on what terms. A well designed DLT system can capture similar information on market participants. More importantly, that information can be used to the benefit of all beneficent actors within the network. Just a good FICO score can get you a better interest rate on a car loan, so too can a good credit profile for a business within the network provide better terms. Those better terms can come in many forms, such as improved

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conditional volume discounts (instead of buy 10 get 1 free, you may get 2 free), longer extensions of payment delay (from 30 days to 60 day), lower margin requirements (only need 20% down payment, as opposed to 40%) or a performance guarantee that only costs 600bps instead of 800bps.

Use case 3: Back end risk management Netting Risk Management and Default Management

Back end risk management, or back office risk management, describes all the functions of the business that are not client facing. These functions are the lifeblood of any business. When done well, it is often underappreciated. When the back office experiences failures, it can cripple a company. Some back office functions include finance and accounting, checking payment requests, vendor additions, client invoicing and capex approvals. DLT systems can be applied usefully to all of these functions, primarily through efficient processing and tracking of large amounts of data. However, there are two Back End Risk management realms where DLT solutions can really provide significant added value. Those realms are Netting Risk Management and Default Management.

Netting Risk Management is defined as offsetting the value of 2 or more transactions, payments or positions in order to create a single value. It is a widely used method for reducing a number of the risks from financial contracts. Those risks include credit risk, systematic risk, settlement risk and liquidity risk.

There are four main types of netting:

1. Payment netting (aka settlement netting)

2. Novation netting

3. Close out netting

4. Multilateral netting

Novation netting is a more legal, formal version of payment netting used by financial firms, while close out netting becomes effective upon a default by one of the parties. Both of these types can be examined at a later time; it is the payment netting and multilateral netting that are most relevant at the moment.

With payment netting, the only payment required is the difference in aggregate amount owed between two. For businesses facing the limitations of a cash-n-carry ecosystem, payment netting can be a very effective tool in increasing the efficiency of settlement, as well as the logistics of cash management. Payment netting can be done formally in a Master Agreement with a Payment Netting Clause, slightly less formally with a standalone Payment Netting Agreement or in an informal "ad hoc" arrangement. These are most often done via bilateral netting agreements between two parties. Whichever route is chosen, the end result is the reduction of settlement risk, and a significantly reduced cash usage requirement. Multilateral netting is similar in concept to payment netting, except multilateral nettings occurs between more than 2 parties. Because of this added layer of complexity, most multilateral netting arrangements occur on an exchange.

Default management includes all the steps in the process to identify, prevent, mitigate and ultimately resolve the issues that occur when a party approaches default or actually defaults. To

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identify and prevent defaults, businesses can track performing, sub-performing and non-performing accounts. To mitigate or resolve accounts at risk, businesses can design work out plans and anticipate cash flows that will impact pending transactions with other partners. If that is not feasible, they can begin the foreclosing on the collateral and anticipate recovery rates. All of this can be greatly benefitted by an intelligent and robustly designed DLT system.

Use case 4: Better Business Decisions

Once you start combining transaction histories, with credit profiles and a back end risk management system, you have all the building blocks in place to make better business decisions. The first order business decision is always to avoid catastrophic loss, and hopefully that case has been made evident. The second order is to recognize opportunity for growth and profit. From a conceptual perspective, this means recognizing opportunities as soon as possible, minimizing opportunity costs and deploying investment into the enterprises and activities with the risk/reward profile that best fits your individual business model. From a practical application perspective, the information contained within your own business that is captured by a DLT system may reveal that even though you think you're making a lot of money with the big bulky customer, you are actually getting better margins and more consistent business with a customer who buys smaller amounts but more often and quite regularly. Conversely, you may determine that clients with particular credit profiles are willing to pay "bad credit" rates for access to credit, while their prepayment and default characteristics are more in line with a "good credit" customer and that the market has not yet adjusted to the new information. Here, you can offer this person better terms, without taking on more risk, thereby providing both the business and the client economic improvement.

Back to the Future: Making Cannabis an Asset Class Just like any other

In the world of finance, it's often joked that the only two ways to make money are leverage and securitization, and there's certainly a kernel of truth in that. The introduction of credit and liquidity is the equivalent of leverage, and leverage is almost always the first financial tool introduced to emergent industries. Throughout recent history, we have seen almost every asset class adopt some aspect of securitization. From mortgages to car loans, student loans to aircraft leases, asset classes across the spectrum have benefited from the securitization process. When done correctly, everyone wins. Investors get access to new opportunities, which in turn lowers the rates and cost for the borrowers, which allows for more transactions for the producers, and ultimately more value for the society as a whole. We believe introducing credit and liquidity to the cannabis industry is a prerequisite for securitization. We also believe once credit and liquidity are established, securitization will quickly follow. We will have more to say on securitization in the future.

If US Federal Legalization Occurs Soon Will Any This Matter in 2 Years?

A strong case can be made for imminent legalization of medical and recreational marijuana in the United States. If that happens, and the banking industry is allowed to provide all their services to the cannabis industry, won't any investment in DLT solutions now be wasted? It's our opinion that nothing could be further from the truth. First, DLT system solutions, just like the cannabis industry, are a new and expanding industry. Innovations are being developed every day, and industry leaders are thinking of new applications and use cases regularly. Any investment in DLT solutions for the cannabis industry will be an opportunity for each industry to learn from each other, and new innovations and applications will inevitably result. US federal legalization won't revoke any

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of that intellectual property. Second, we fully embrace US Federal legalization, and would happily partner with any banks that wished to expand. We believe it is still way too early for a "winner take all" marketplace, and the best and most robust solutions will be the result of collaboration, and not first to market strategies. Not to mention, by design, this solution gains strength and increases with value as the network expands. Including the banking sector would only make any existing solution that much more valuable to all participants. In addition, while some banks have DLT research, development and strategy departments, many do not, and many of those will be looking to adopt working, off the shelf solutions. A working proof of concept, not to mention a viable business model, would be an attractive commodity in a post-legalized world. Finally, members of the cannabis industry have a long history of being ignored and shunned by the banking community. Overcoming a history of mistrust and mutual dislike will not happen overnight. We very much look forward to the time when these groups work harmoniously together, but we are pragmatic enough to know that emissaries will provide a valuable function.

Conclusion

We believe that DLT systems can be introduced into the cannabis industry in a cost effective, logistically efficient way, all while injecting the requisite trust required for businesses to prosper and grow. More importantly, we believe that a properly planned DLT ecosystem can also provide both the foundation and the accelerant needed to introduce many tools that can produce sound business practices as well as growth. Businesses which can track and analyze the information captured within their own organization and their network will make better decisions. DLT systems can be the backbone for growth producing financial tools, such as peer-to-network lending, factoring, and securitization. If you're interested in learning more, please contact us info@greendltsolutions.com or visit us at greendltsolutions.com

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