

Incentivizing Economic Surplus Growth in the Cannabis Industry

düber White Paper for the Crowdsale of DBRs

Version 2.0

Note: This white paper was originally written and produced in English. Unless otherwise indicated, translations of this white paper into any other language have not been fully reviewed by düber and thus no assurance can be made as to the accuracy and completeness of such translations. In all instances, where there is a discrepancy or conflict between any such translation and the English version of this whitepaper, the English version shall always prevail.



Executive Summary

Network participants can increase total economic surplus by creating and distributing new information across a value chain. Blockchain technology—with a token-based cryptocurrency—is ideally suited to reward information exchanges fairly. It can provide an incentive for participants to create valuable information, while also functioning as a technical platform that tracks, measures, and acknowledges the economic value resulting from these exchanges.

The **düber** token (DBR) will incentivize and improve information exchange in the cannabis community including consumers, retailers, labs, processors and growers. Examples are rewarding community members for providing product information and photos, submitting product reviews, participation in loyalty programs and interaction with advertising and other communication channels.

The increased value will be distributed across the community and thus create a level playing field for small and medium local suppliers and retailers, while neutralizing the size advantage of brick-and-mortar and ecommerce giants outside the network.

düber is uniquely poised to help build this community. As an established cannabis technology platform, we have significant financial backing, multiple products launched, and happy customers. We have a proven management team and an experienced, 16-person developer group working full-time on a product pipeline. Because our technology is already integrated into our partners' retail operations and supply chains, we can gain immediate traction with our blockchain and token solution.

The legal cannabis market is one of the world's biggest growth opportunities. In North America alone, the industry is forecasted to top US\$20 billion by 2021, from US\$6.7 billion in 2016. Currently, 37 US states plus Washington, DC have passed medical or medical-and-recreational cannabis laws, and Canada is projected to legalize recreational cannabis by July 2018. **düber** is playing an important role in building the technology infrastructure to enable the growth of the cannabis market including distribution, consumer experience, and regulatory compliance. We believe that the introduction of the DBR token will improve the efficiency, security and privacy for everyone.

From experience, we know that building and scaling a platform like **düber** requires considerable effort and resources. Our token sale aims to raise 350,000 ETH using the SAFT (Simple Agreement for Future Tokens) structure. Presales will start 15:01 UTC on October 25, 2017, and end at 23:59 UTC on December 4, 2017. Our Crowdsale will start 15:01 UTC on December 5, and end at 23:59 UTC on January 19, 2018.



Table of Contents

Executive Summary	2
Table of Contents.....	3
The Problem: Weak Incentives to Grow Economic Surplus.....	5
The Zero-Sum Game of Supply and Demand.....	5
Lopsided Loyalty Programs	5
Fake Reviews.....	6
Inequitable Rewards for Customer Referrals	6
Wasted Advertising Spend.....	7
The Solution: Persuasive Incentives to Grow Economic Surplus	8
An Efficient and Effective Measurement and Incentive System.....	8
Earning Tokens for Contributing Cannabis Product Information.....	9
Earning Tokens for Verified-Purchase Consumer Reviews	9
Earning Tokens for Loyalty	10
Earning Tokens for Referring New Customers.....	10
Earning Tokens for Implementing Feedback Loops on Advertising.....	10
Earning Tokens for Content Contributions	11
Spending DBRs.....	11
Cannabis and the Opportunity for Blockchain	12
The Emerging Global Market for Cannabis	12
Challenges for Retailers	12
Challenges for Producers and Processors	13
Challenges for Distributors and Delivery Drivers	13
Challenges for Regulators	13
Challenges for Law Enforcement	14
The Payment Challenge for All Parties.....	14
Lack of Available Solutions.....	15
Blockchain as an Imperative to the Solution	16
Blockchain as a Superior Verification Technology.....	16
Blockchain as a Secure and Traceable Form of Payment	17
Technical Overview.....	18
Why Ethereum.....	18
Anticipated Issues.....	18
Solutions	18
The düber Platform: Off-Chain Processing with Results Published On-Chain.....	18
The düber Token: DBR	19
Introducing the DBR to Consumers	19
Introducing the DBR to Retailers, Processors, and Producers	19
Token Flows	19



The Economic Model for DBRs	21
Why we Chose 350,000 ETH to Fund the Ecosystem	21
DBR Token Supply is Capped	22
DBR Tokens will be Less Expensive to Accept than Cash or Credit Cards	22
Early Traction through Token Distribution	22
Alignment of Interests with Time-Based Lockups	22
Discounts (up to 15%) on Advertising and düber Software Platform Fees	22
Destruction of 50% of Transaction Fees	23
Equitable Rates and Exchange	23
The düber Reference Platform	24
The Story of düber	24
The Platform in the Market	25
Key Milestones	26
About Our Team	26
The Crowdsale and Financial Model	27
Crowdsale Token Launch	27
Use of Funds	28
Conclusion	29
Reference List	30
Appendix: More About düber	32
Big Hairy Audacious Goal	32
Our Vision	32
Our Mission	32
Objectives	32



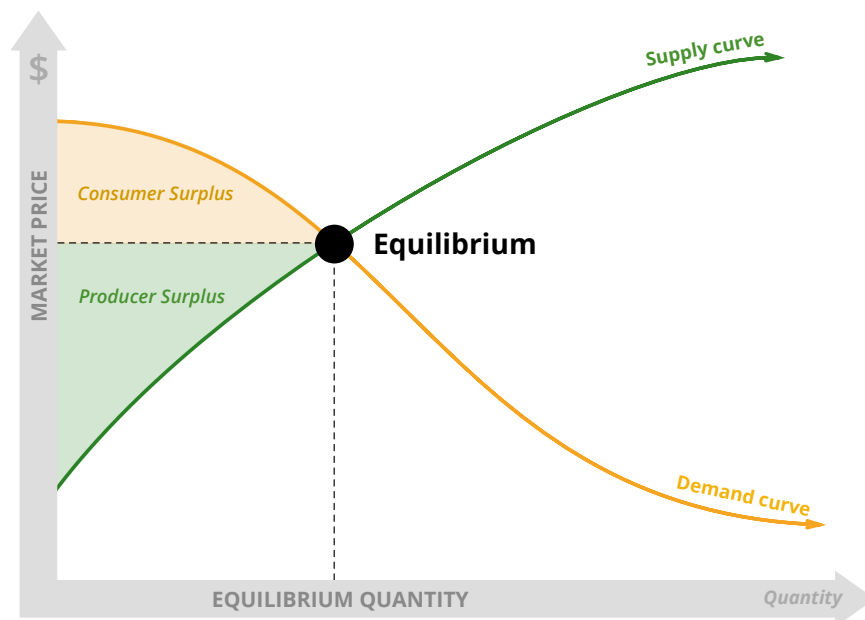
The Problem: Weak Incentives to Grow Economic Surplus

The Zero-Sum Game of Supply and Demand

In traditional economics, the concept of *surplus* refers to two quantities:

- *Consumer surplus* is the difference between the price a consumer pays for a product and the highest price they are willing to pay
- *Producer surplus* is the difference between the amount for which a producer sells a product and the lowest price at which they would be willing to sell (this is roughly equal to profit, since producers, normally, do not want to sell at a loss)

The graph below illustrates consumer and producer surpluses on a supply-and-demand curve. It reveals that economic surplus is a zero-sum game. Growing customer surplus happens at the expense of producer surplus, and vice versa.



Economic Surplus

While this reality may be true for price, however, it need not be true for the value of information. Network participants can increase total economic surplus by creating and distributing new information across a value chain (Akerlof, 1970). The challenge then becomes ensuring that the rewards for information are distributed equitably. In a standard fiat economy, as the examples below reveal, information exchanges tend to have asymmetrical rewards.

Lopsided Loyalty Programs

Loyalty programs benefit suppliers and retailers in driving higher share of wallet and potentially total consumption. When enrolling in a loyalty program, a consumer typically needs to share contact details, allowing the producer or retailer to communicate with the consumer and encourage further consumption. Increased sales benefit the producer and/or retailer.



Arguably, the consumer also benefits from earning points for potential rewards. That is the point of a loyalty program, after all. However, the average redemption percentage of loyalty programs is only 14% (Mceachern, 2016). The problem lies in universally unattractive rewards, driven by high redemption hurdles, combined with limited redemption locations and windows. (Anyone who has ever tried to obtain a “free” airline seat can attest.) Unattractive rewards dis-incentivize consumers to become active members and thus undermine these programs and compromise the growth of economic surplus.

Fake Reviews

Customer reviews are a key factor in purchase decisions for both professional and personal consumption. Brands with a high number of positive reviews benefit substantially from increased sales and profit. Brands even benefit from negative reviews, because they are a unique source of product and service improvement information. Consumers who read reviews benefit from both positive and negative reviews.¹

Writing a thorough and helpful review takes time and effort. Today, few writers receive an incentive for their effort. The benefits fall on review readers, but this one-sided advantage undermines the long-term health of the review arena.

And there is the problem of fake reviews. [Recent articles](#) about the problem of fake reviews in the cannabis space have highlighted the need for “Verified Purchase Consumer Reviews,” such as the ones Amazon has adopted. The challenge for non-ecommerce platforms lies in confirming that the consumer presenting the review actually purchased the product. This situation has left the cannabis industry continuing to accept non-verified purchase reviews when other industries require a purchase.

Inequitable Rewards for Customer Referrals

Referrals provide similar benefits to reviews. If someone you know and respect refers a brand, you will be more inclined to purchase, which benefits the producer and/or retailer. Currently, most referrals either receive no compensation (most often) or substantial but undisclosed compensation (e.g., bounty programs). Both situations are suboptimal because they fail to reward participants equitably.²

¹ “A long line of previous work has established the multidimensional importance of reputation mechanisms in marketplaces. In particular, researchers have found that reputation mechanisms in electronic markets (1) resolve various information asymmetries (Dellarocas, 2003; Dellarocas, 2006; Kokkodis and Ipeirotis, 2015) and (2) improve transaction efficacy (Bakos and Dellarocas, 2011; Bolton et al., 2004). Furthermore, other studies found that (1) negative ratings are far more influential and detrimental than positive ones (Chevalier and Mayzlin, 2006; Standifird, 2001), (2) reputable sellers create an increase in willingness to pay (Resnick et al., 2006), and (3) reputation scores appear to form J-shaped distributions (Hu et al., 2009). Finally, researchers showed a U-shaped relationship between reviewers’ posting propensity and their expected product quality (Ho et al., 2014). These findings set the background of our work, and they underline the importance of reputation mechanisms towards increasing efficiency of electronic marketplaces.” (Kokkodis and Lappas, 2016)



Wasted Advertising Spend

Advertising spend remains high because it works. People exposed to a particular brand's messages are more inclined to consider, purchase, and continue purchasing the brand. Brands pay dearly for the privilege of advertising. But although these costs benefit advertising agencies, media agencies, cable networks, cellular carriers, and other businesses, none of them go to the advertising recipient. Consumers are more inclined to watch, read, and listen to a commercial message if they are given an incentive—a situation that would not only benefit themselves, but also the brand, by increasing the effectiveness of its advertising spend.

Furthermore, a system that provides a feedback loop to show purchases resulting from advertisements helps close the gap for advertisers. This has been an elusive goal: verifiable cause-and-effect results from significant investments.

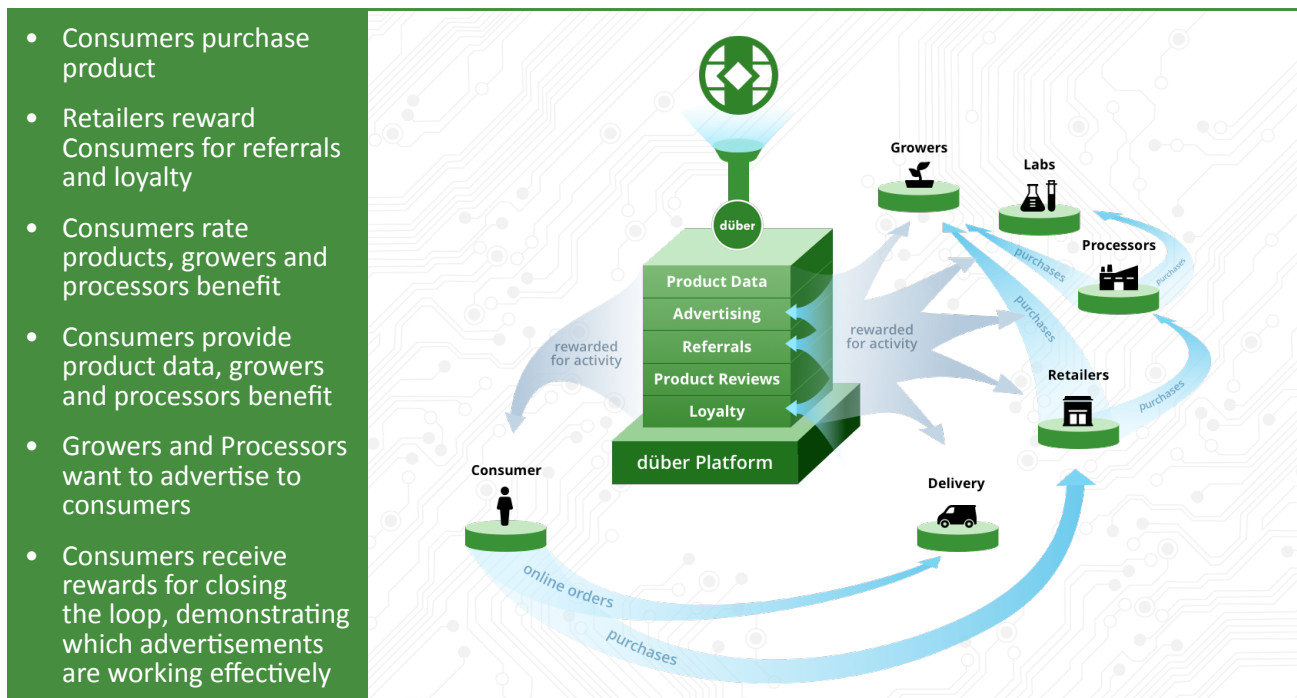
²“For companies wondering whether their referral programs are accomplishing anything other than giving established customers some extra cash, our research provides some reassurance: A customer referral program can in fact be strikingly profitable. We studied 10,000 accounts in a large German bank over a period of three years, and found that customers obtained through referrals are both more loyal and more valuable than other customers. After controlling for such factors as age and gender, we calculated that referred customers are, on average, about 18% more likely than others to stay with the bank. We also projected that they generate 16% more in profits (amounting to €40 each). Thus, the bank earns a return of about 60% on its €25 referral reward.” (Schmitt, Skiera, Van den Bulte, 2011)

The Solution: Persuasive Incentives to Grow Economic Surplus

An Efficient and Effective Measurement and Incentive System

The asymmetrical value of these information exchanges can be addressed by a system that offers incentives to producers, processors, retailers, and consumers equally. Blockchain technology and a token system are ideally suited to acknowledge and measure the growth in economic surplus, as well as to allocate the increase fairly across the network.³

In our system, tokens can be used at any participant across the network (e.g., producers, retailers, and **düber**), for any category and product (if legally allowed), and at any time (i.e., no blackout dates). The underlying efficiency driven by the **düber** reference platform will ensure that paying with tokens is more advantageous than paying in fiat currency, and thus increase the demand for tokens. There are numerous opportunities to achieve this potential for economic surplus growth, including the areas below.



3 “For an exchange to be executed, key attributes of a transaction need to be verified by the parties involved at multiple points in time. Blockchain technology, by allowing market participants to perform costless verification, lowers the costs of auditing transaction information, and allows new marketplaces to emerge. Furthermore, when a distributed ledger is combined with a native cryptographic token (as in Bitcoin), marketplaces can be bootstrapped without the need of traditional trusted intermediaries, lowering the cost of networking. This challenges existing revenue models and incumbents’s [sic] market power, and opens opportunities for novel approaches to regulation, auctions and the provision of public goods, software, identity and reputation systems.” (Catalini and Gans, 2016)



Earning Tokens for Contributing Cannabis Product Information

The cannabis industry has enormous challenges with data consistency. It lacks product pictures and descriptions, standard nomenclature, and central inventory catalogs. Packaging varies widely: cannabis can be delivered loose (bulk), in plastic sealed packaging, or in jars or other packages. As the products tend to be volatile in their availability, the product variants, their packaging, and accurate representations of the actual bud being ordered are currently ignored by the supply chain at the detriment of consumers.

With our token system, consumers (or any network participant) will earn **düber** tokens (DBRs) for:

- Providing detailed product information, including product names, descriptions, and pictures. Through a central upload mechanism, this product information will be available across the entire **düber** network, benefiting processors, producers, retailers, and consumers.
- Curating based on completeness, correctness, and quality (e.g., professional pictures). This system increases economic surplus through information, without the need for retailers and producers to add extra staff to do this work.
- Providing photos or descriptions for products missing this information
- Voting on the metadata for consumer-provided photos and descriptions (after an automatic review for improper language, photo suitability, and copyright restrictions). Photos and descriptions submitted by processors will automatically become the default metadata associated to products, but additional crowd-sourced photos will also be visible for products, including photos submitted as part of a consumer review.

Earning Tokens for Verified-Purchase Consumer Reviews

Consumers can also earn DBRs by writing product reviews. When **düber** members purchase products from a network retailer, they will be sent a notification via the **düber** app to leave a review to earn additional DBRs. There will be a base number of DBRs awarded for submitting a review, and additional DBRs will be awarded if other members vote that the review is useful. This practice encourages members to craft well-written and useful reviews. Reviews that are deemed to be poorly written or fake (based on machine and human judgment protocols) will cause the reviewer to be limited from leaving future reviews, and this in turn will discourage malicious or fake reviews from being submitted. The DBR token system offers a simple way to reward reviewers while also linking them to a verified purchase:

- Purchase reviews are only allowed from verified purchasers
- More valuable reviews (e.g., new product with few reviews, higher quality reviews, upvoted reviews) will receive more tokens than less valuable reviews
- Medical reviews will receive more tokens than recreational reviews
- Community participants who upvote a review receive a proportionate number of tokens for their effort



Earning Tokens for Loyalty

düber customers are currently asked to create an account and may opt-in to receive SMS messages and email from **düber** network participants (e.g., retailers). Upon integration of the blockchain technology, we will create a **düber** wallet for any member with an account, and offer DBRs at sign-up and on the first purchase at a **düber**-network retailer. The **düber** member will receive DBRs proportional to their spend.

The DBR token system will allow loyalty rewards to balance consumer and producer interests:

- Consumers receive tokens for every purchase they make. Retailers can be more generous (e.g., more tokens per dollar spent on specific product categories), but never less generous than the network minimum
- Consumers receive more tokens for purchase options that are more profitable for the retailer, such as home delivery rather than in-store purchase

Earning Tokens for Referring New Customers

Existing members can earn DBRs by inviting friends to sign up for a free **düber** membership and make their first purchase. Both the member who sends the invitation and the member who accepts and makes a subsequent purchase will be rewarded DBRs. The sign-up DBRs will be paid by **düber**, while the loyalty DBRs will be paid by the retailers where the purchase occurs.

The DBR token system will provide equitable, trackable reward mechanisms for customers who:

- Refer other customers to products and retailers
- Promote on social media

Earning Tokens for Implementing Feedback Loops on Advertising

When consumers see **düber**-network advertisements, they can earn DBRs by scanning advertisements or typing daily catch phrases into their **düber** app. The process will be gamified with the use of augmented reality, displaying fun animations on top of the camera-captured advertisements on a mobile screen, with a chance to gain additional DBRs by providing feedback about the advertisement. The **düber** back-office system allows retailers to send promotional SMS and email messages to consumers. Our solution will embed a unique URL for each message. Consumers will earn DBRs by clicking on the unique URL, and purchases for promoted products will be rewarded additional DBRs.

The ease of distributing tokens digitally allows our network advertisers (retailers, processors, and producers) to reward consumers with tokens when they:

- Opt-in to receive text and/or email messages
- Take action (watch, read, listen) upon receiving text in app messages
- Forward advertising to other consumers

Identifying areas for increasing content and quality helps increase the value of the **düber** network and hence its economic surplus. Our token system will compensate anyone who:

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- The diagram illustrates the Uber Platform ecosystem. At the center is the **düber Platform**, which acts as a hub. A **Consumer** interacts with the platform through various channels: **Product Data**, **Advertising**, **Referrals**, **Product Reviews**, and **Loyalty**. The platform then facilitates connections to several key stakeholders, each represented by a green circular base with a yellow arrow pointing to it from the platform. These stakeholders are: **Growers** (represented by a microscope icon), **Labs** (represented by test tubes), **Processors** (represented by a factory icon), **Retailers** (represented by a storefront icon), and **Delivery** (represented by a truck icon). Each stakeholder is accompanied by a stack of gold coins, indicating financial transactions. The entire system is set against a background of a circuit board pattern, symbolizing a digital or technological environment.



Cannabis and the Opportunity for Blockchain

The Emerging Global Market for Cannabis

As of September 2017, 37 U.S. states, plus Washington, DC have passed medical or medical-and-recreational cannabis laws. Canada is projected to legalize recreational cannabis federally by July 2018, and many other countries have announced plans to follow suit, making legal cannabis one of the world's largest growth opportunities. In North America alone, the industry is forecasted to top US\$20 billion by 2021, from US\$6.7 billion in 2016 (Arcview Market, 2017).

Projected Growth in Retailers, Producers, and Processors

Our internal forecasting models (based on state supplied data) show that to supply this demand, the number of retailers is likely to increase fivefold, from more than 4,000 in September 2017 to 20,000 retailers in 2020, and the number of producers/processors from 8,000 to more than 20,000 in the same timeframe.

Projected Growth in Home Delivery

Data on the popularity of home delivery versus in-store purchase and pickup is difficult to obtain. Our internal models and market research conducted in Canada, Washington, and Nevada indicate that cannabis home delivery is likely to become more popular than pizza delivery (30% of the US\$33 billion annual pizza sales in the U.S. is currently home delivery [Statista.com, 2017]).

Challenges for Retailers

In this growing market, retailers report numerous challenges, from distribution to regulation.

Overburdened Complex Delivery System

The lack of centralized distributions systems results in 50 to 60 incoming deliveries per week, requiring higher staff levels and complex lengthy receiving procedures.

Fragmented Supply Chain

The product supply is extremely fragmented. Washington has over 1,100 licensed processors and producers, while best estimates in California currently place the number of producers at well over 5,000. As crops go in and out of production, supply quickly dries up and consumers have difficulty finding their favorite products, while retailers struggle with forecasting and sending purchasing projections to the processors and producers.

Inability to Offer Integrated Home Delivery

The inability to quickly and easily file the data in state-operated systems for home delivery prompts a competitive black market, thriving at the expense of retailers.

Inaccurate Data Resulting in Lost Sales

Inaccurate inventory, long customer lineups, and salespeople with insufficient sales support systems lead to inefficiency and lost profit.

Tax Regime Resulting in 70%+ Taxation Levels

Finally, and perhaps most importantly, retailers in all U.S. states struggle to be profitable under the 280E tax structure.



Challenges for Producers and Processors

Forecasting Demand and Planning Production

With no centralized inventory system, producers and processors rely on spreadsheets, third-party forecasting systems, and emails and telephone calls. Obtaining a single, complete view of all product inventory in retail stores and projecting sales for crop and production planning are nearly impossible. With a shifting competitive landscape, dropping prices, and additional supplier licenses coming online, the risk for processors or producers getting a forecast wrong is significant.

Unique Crop Data with Each Harvest

Each harvested crop has different characteristics that, by law, are tested by labs and published in reports before the product is distributed. These lab results (e.g., THC or CBD levels) vary by crop. However, the lab results today are most often maintained on premise as printed paperwork in a filing cabinet, far from being readily available to consumers.

Non-Standardized Nomenclature, No Central Inventory Catalog

The nomenclature for naming products is not standardized, making it difficult for salespeople, purchasing managers, and retail operators to keep the data in their point-of-sale systems accurate. Poor nomenclature also hinders the creation of a centralized inventory catalog for all participants. Properly implemented, a central catalog would enable a streamlined order and supply-chain process, with the details professional buyers need to make ordering decisions. It would also publish product photos, descriptions, and packaging information that consumers consider when they make a purchase.

Challenges for Distributors and Delivery Drivers

Wholesale Delivery

Because of the point-to-point distribution structure and resulting number of daily delivery routes, distributors are only slowly emerging and delivery drivers are overburdened with long days and unprofitable deliveries. Being a driver often entails waiting behind other drivers—often for more than an hour—to complete a shipment to a retail store. Once through the line, the delivery itself takes another 30 minutes or longer.

Home Delivery

When it comes to home delivery, filing the appropriate paperwork in the state-operated seed-to-sale systems can take 15 to 20 minutes per delivery (manifests must include driver name, license details, route driven, and a complete list of the products delivered). The process renders any idea of efficient home delivery coordinated by retail salespeople nearly impossible.

Challenges for Regulators

State regulators lack the tools and logistics support to service legitimately licensed producers, processors, labs, and retailers. With product moving through a complex point-to-point distribution network, and more than 1,400 locations for potential enforcement in Washington state alone, regulators simply lack the resources to monitor all points effectively. The situation will only get worse: regulators in California expect to issue more than 15,000 licenses to industry participants for 2018.



Challenges for Law Enforcement

Law enforcement is almost completely without tools to protect licensed legitimate businesses and consumers. Much of the infrastructure for tracking crime is managed federally, so states that have legalized cannabis cannot use the standard law enforcement tools.

The Payment Challenge for All Parties

Settlement in Cash

Currently, most financial transactions in the legal U.S. cannabis industry are handled in cash. Federal regulations have made it so onerous for financial institutions to serve the industry that only a very few make the effort. This means that wholesale deliveries to retailers are settled in cash, and ultimately home delivery is being settled in cash because retailers, not having a bank account, also cannot accept debit or credit cards. Even taxes are paid in cash, with duffle bags dropped at the state tax collection agencies. The costs and risks of storing, counting, and transporting this cash are enormous, and everyone is struggling to find a solution.

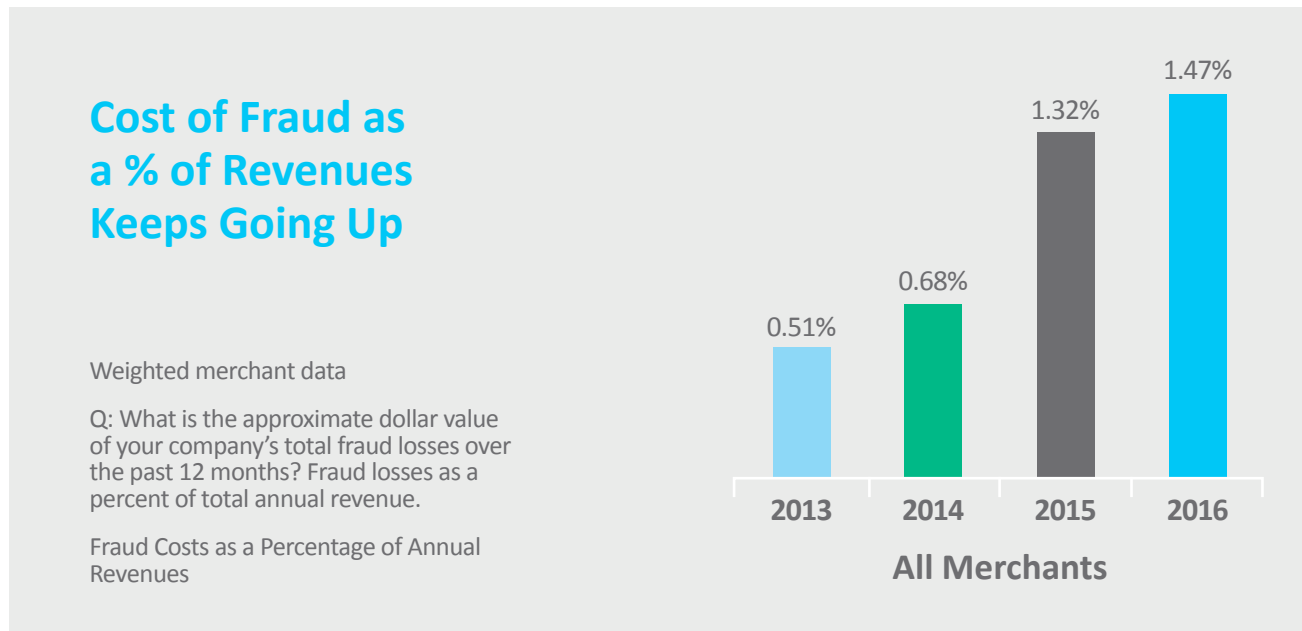
Credit Cards are Not the Solution

In the future, as regulations potentially change to allow banking and credit cards to be more widely accepted for cannabis products, merchants will be dis-incentivized to accept them because of the cost. In addition to the 1.5–2.0% transaction fee, merchants are liable for acceptance of losses from chargebacks that occur when a bank reverses a consumer credit card payment due to accusations of fraud. When the average transaction fees, losses associated to chargebacks, and administration costs of fighting chargebacks are compiled, the true cost of accepting credit card payments can total 4–7% of revenue. A recent report noted:

On average, U.S. merchants reported an 8% increase (2016 over 2015) in the cost-per-dollar of fraud losses, from \$2.23 to \$2.40. This means that for every dollar of losses, merchants are losing \$2.40 based on chargebacks, fees, and merchandise replacement (LexisNexis, 2016).



2016 LexisNexis® The True Cost of FraudSM Study



Fraud as a percentage cost of annual revenues (2013 - 2016)

Customers Lack Bank Accounts and Credit Cards

Another issue with credit cards is that 28% of adult Americans—or 67 million individuals—do not have one (Federal Reserve, 2014). Fourteen percent—or 33 million Americans—do not even have a bank account (FIDC, 2016). For these individuals, cash is currently the only solution.

Lack of Available Solutions

Many companies are jumping on the cannabis bandwagon, trying to eat their share of the growing cannabis pie. However, few realize the unique challenges that cannabis operators face due to stringent chain-of-custody requirements, marketing restrictions, and the absence of an adequate financial services solution for the industry.



Blockchain as an Imperative to the Solution

Blockchain as a Superior Verification Technology

Traceability

All jurisdictions that have legalized cannabis have done so with the mandate that transactions be transparent and traceable. Blockchain technology provides the ability to verify transactions, which provides transparency and traceability.⁴ By utilizing the blockchain, **düber** will provide this service for all transactions involving cannabis—from manufacture to purchase and delivery.

Immutable Records of Lab Results

In most legal cannabis jurisdictions, products must be lab-tested to ensure that they are safe and contaminant-free. Moreover, this information must be easily available to consumers so they know exactly what they are purchasing. Within the **düber** platform, once a lab result is provided for a product, it will be recorded and verifiable via the blockchain. Consumers have the added protection of knowing that lab results have not been manipulated after they enter the system.

Verification of Consumer Reviews

Customer reviews will also be verifiable in the blockchain, as well as the votes they receive from the community. Each reward for a customer review will only be released via smart contract to the reviewer after the piece has received a sufficient number of positive votes from the community.

Blockchain as a Secure and Traceable Form of Payment

Security and Payments

Wholesale and home delivery of cannabis products can be made more secure for delivery drivers and consumers by using DBR tokens for product payment. Consumers will have a non-cash payment option (without sacrificing privacy), and drivers will reduce the amount of cash in their vehicles. The blockchain ledger entries for delivered products will include data, such as transport manifests, retailer information, and driver information. This level of added traceability and transparency enhances the safety of all participants.

⁴ "When a transaction is born in the economy, it immediately inherits some basic attributes, such as the time it was created, information about the seller and buyer involved in it (i.e. where do the inputs come from, and where should the outputs be delivered), and the fact that it exists at all. Right after the transaction attributes are generated, we typically start relying on them to perform related actions (e.g., once funds are transferred, the seller may ship the goods). Some of these actions take place for every transaction (e.g. settlement), whereas others are only triggered by future events. A particularly interesting subset of future events are those that require additional verification. For example, a problem with the transaction may emerge, and original attributes will need to be checked again through an audit. The audit is often costly, as it may require a third-party to mediate between buyer and seller. Ideally, the outcome of the audit is the resolution of the problem that just emerged. Blockchain technology fundamentally changes this flow by allowing, when a problem emerges, for costless verification of all the attributes that can be stored effectively on a distributed ledger (e.g. timestamp of a transaction, other parameters of the original contract, but also, as we will see, digital 'fingerprints' of the individuals, goods or services involved). If we think of the audit capability of the third-party (e.g. intermediary or government) that intervenes when a problem emerges in a traditional market as surveillance (or monitoring), blockchain technology can deliver 'sousveillance' (Mann et al., 2015), i.e. an audit that is embedded within the marketplace itself. The ability to perform an audit at zero cost through a blockchain is what enables distributed, costless verification." (Catalini and Gans, 2016)



Storing the record of payment transactions solely on a blockchain ledger is beneficial for both cannabis businesses and consumers. It also protects consumers who want to safeguard their privacy in the face of cyber-security threats.

Dual Utility

The dual utility of tokens makes it a more attractive option for crowdsourcing efforts, since the token can be used either to pay for products and services in the **düber** network, or to convert to a national fiat currency. Crowdsourcing efforts such as obtaining product photos and descriptions constitute a value-added effort, and the blockchain ledger will include pointers to the actual work associated with each ledger entry.



Technical Overview

Why Ethereum

We chose Ethereum as the base blockchain technology for DBR tokens due to its powerful built-in scripting language that lets us build complex smart contracts for DBR tokens relatively easily. Ethereum has already proven itself to be a capable and well-documented blockchain at the heart of many successful ecosystems.

Anticipated Issues

There are some shortcomings with Ethereum related to slow transaction speeds and fees involved in processing transactions. Currently, Ethereum is built on a proof-of-work solution that limits the throughput of transactions. The current Ethereum block time (transaction throughput time) is approximately 24 seconds, and it is expected to increase as the price and popularity of Ethereum rises. While this is significantly faster than Bitcoin, for our solution we will need even faster transaction times, which currently cannot be fully achieved with the Ethereum blockchain. Transaction fees that are built into Ethereum also become a barrier, as it becomes cost-prohibitive for many small-scale transactions to be processed on the network.

Solutions

The Ethereum team—along with Vitalik Buterin—are actively working on a solution that involves switching the network to be based on proof-of-stake, which is codenamed *Casper*. In the interim, the upgrade called Metropolis is slated to be released before the end of 2017, and will provide significant improvements to the network. The Raiden Network also provides a promising solution to speed up transaction times, similar to the Lightning network for Bitcoin and Litecoin. The **düber** team is actively monitoring these developments and will adjust the technical strategy in accordance with these future improvements—with the ultimate goal of all transactions being hosted off the Ethereum blockchain in a cost-efficient and frictionless manner for our users.

The düber Platform: Off-Chain Processing with Results Published On-Chain

The Raiden Network is a form of off-chain transaction settlement. We will develop and utilize a similar off-chain ledger to expedite transactions and reduce fees. All transactions and data handled off-chain will be signed digitally by all involved parties, with the ultimate result stored and verifiable on the Ethereum blockchain. In this way, the **düber** network will be a fast, reliable, and secure solution that can safely handle near-instantaneous transaction speeds, while still recording the end results on the Ethereum network in a verifiable way.



The düber Token: DBR

Introducing the DBR to Consumers

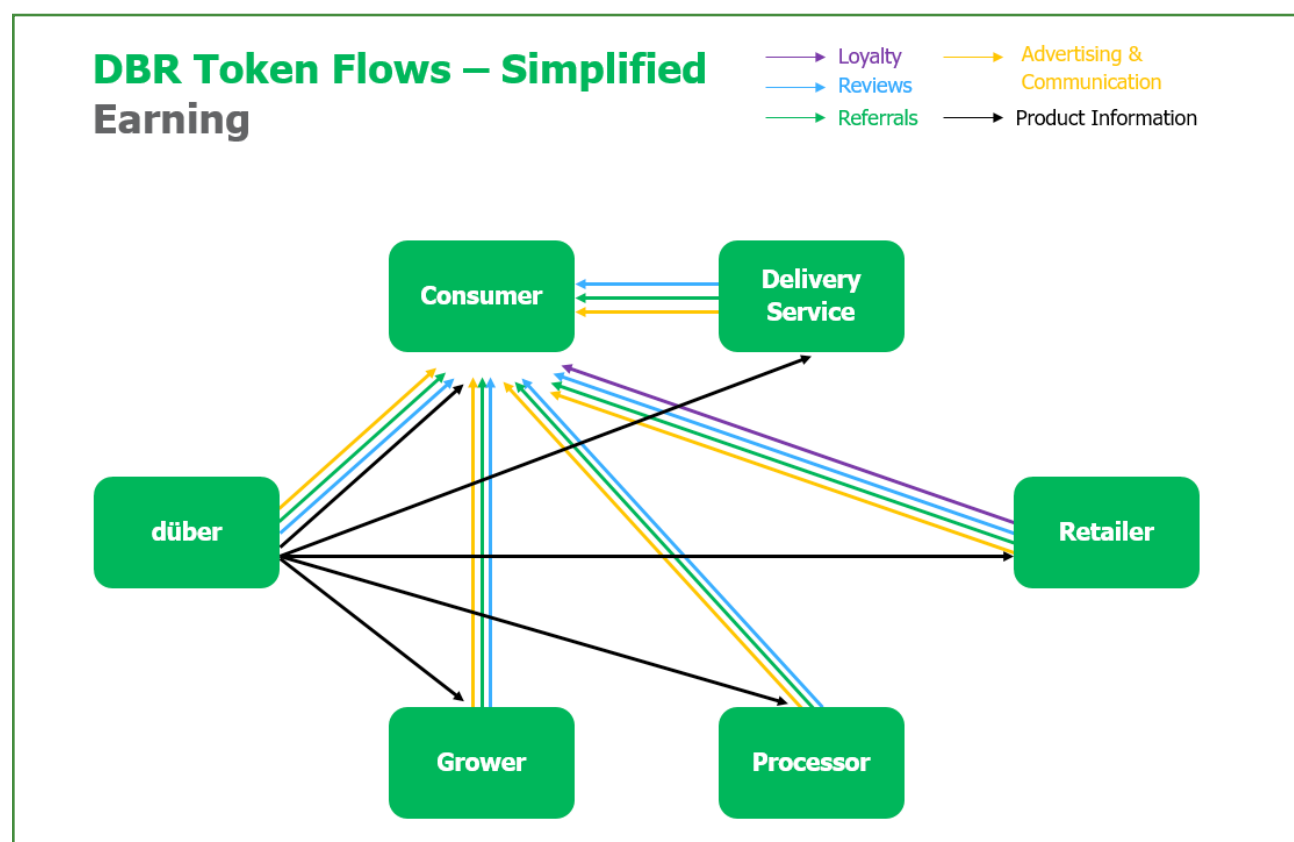
The **düber** platform will facilitate purchase of DBRs to vendor token wallets. Similarly, any consumer who signs up for a **düber** membership will have a digital wallet, and will be rewarded immediately with DBRs for the act of signing up. Any DBRs earned by consumers will be deposited into their wallets as soon as the rewarded action has been completed and validated. At any time, a vendor, consumer, or **düber** itself may purchase more DBRs from the open market.

Introducing the DBR to Retailers, Processors, and Producers

Vendors such as retailers, processors, and producers who exchange product from one another can pay in DBRs or their fiat currency for goods and services. The **düber** platform is already designed to facilitate submission of invoices, inventory management, automatic and manual order placement, and payment among **düber**-network vendors using both fiat currencies, and will be expanded to facilitate and encourage the use of DBRs. When token transactions are used for compensation among vendors, the vendor will be required to make payments to the wallet address of other vendors directly.

Token Flows

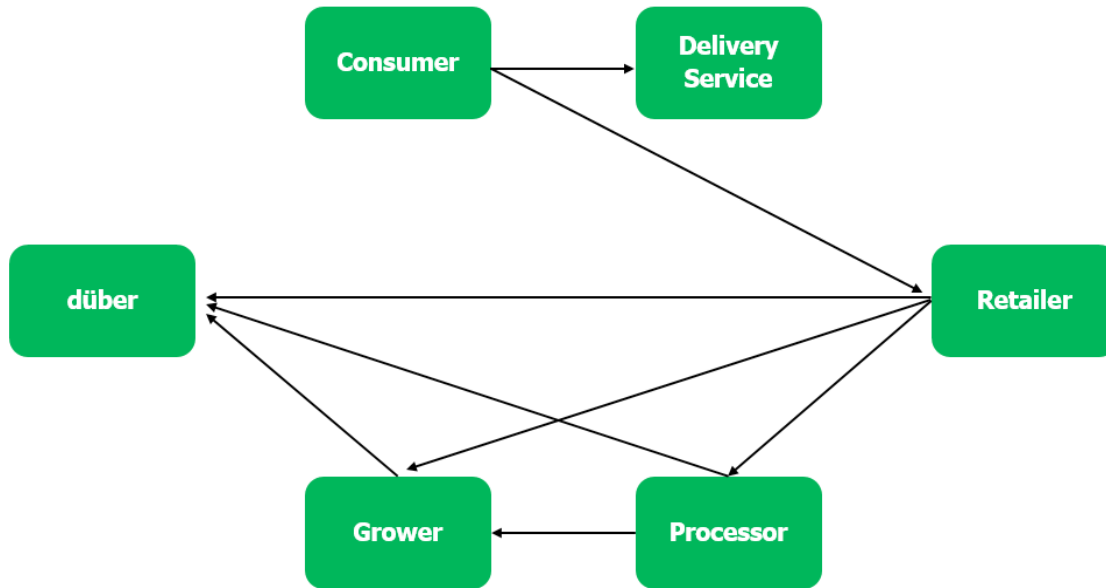
The diagrams below provide an overview of the main earning and spending DBR flows in the **düber** network.





DBR Token Flows – Simplified Spending

→ Paying for Goods & Services





The Economic Model for DBRs

The instant and sustained demand for DBRs is in the interest of all network participants. Below are some of the mechanisms designed to drive early adoption, popularity, long-term viability and scarcity of DBRs.

Why we Chose 350,000 ETH to Fund the Ecosystem

Our modelling shows a need for 350,000 ETH to fund the creation and sustained growth of the global network.

Within North America, there is a complex patchwork of legislation that starts at federal level, and then extends down to state, municipal, and city-level legislation. We believe that additional states (beyond those that have currently legalized cannabis for medical and recreational uses) may also change their stance on medical and recreational legislation, enabling further expansion but also requiring further development and promotion of the DBR network. Each jurisdiction requires integration with the state operated seed-to-sale networks, which requires customization and localization to each jurisdiction (examples include maximum purchase limits, product rejection and returns rules, blackout zones for delivery, lab testing requirements, insurance management and compliance with payment settlement regulations to name only a few high-level areas).

Supported by previous business-building experience, we have modeled the financial requirements of growing the North American düber network on a state-by-state and province-by-province level. Our assumptions are detailed in the table below:

Jurisdiction	Consumer Facing App	Delivery Modules	Retailer Modules	Processor Modules	Lab Modules	Producer Modules	Total
Small	\$75,000	\$37,500	\$150,000	\$75,000	\$18,750	\$75,000	\$431,250
Medium	\$150,000	\$75,000	\$300,000	\$150,000	\$37,500	\$150,000	\$862,500
Large	\$300,000	\$150,000	\$600,000	\$300,000	\$75,000	\$300,000	\$1,725,000

For the 28 US jurisdictions that have legalized medical and/or recreational cannabis, and Canada which will legalize recreational cannabis by July 2018, this adds up to a total required investment of US\$40 million. Even though Europe alone is larger than North America, we have conservatively estimated the investment requirements for Rest of World (current and expected countries changing the legal status of medical and recreational cannabis) including but not limited to Australia, Germany, Israel, Jamaica, Netherlands, Portugal, South Africa, Spain, Turkey and Uruguay to be similar in scope to North America. This gives a total of US\$80 million or, at an ETH value of US\$285, an equivalent of 280,000 ETH (rounded). However, given the exchange rate volatility between ETH and fiat currency, we have built in an exchange rate risk buffer of 25%, increasing the total investment requirement to US\$100 million or 350,000 ETH (rounded).



An absolute minimum requirement to create momentum for the düber network would be 10 small, 5 medium or 2-3 large jurisdictions (or an equivalent mix). This would provide the network with sufficient critical mass to allow for organic growth, albeit at a much slower pace than optimal. This would equal to a required investment of US\$5 million (after exchange rate risk buffer) or 5% of the projected token raise.

DBR Token Supply is Capped

The total supply of DBRs is capped at the amount raised during the initial coin offering. No further tokens will be created, neither through future coin offerings or other means.

DBR Tokens will be Less Expensive to Accept than Cash or Credit Cards

Previously, we explained the disadvantages of cash and credit cards for merchants in general, and for the cannabis industry in particular, which is currently shunned by most credit and debit cards. Payments made in cash are also cost-prohibitive for retailers, processors, and growers because of the need for counting, storing, enhancing on-site security and vaults, and ensuring secure transportation, as well as enduring losses from minor theft and the risk of counterfeit. Cash is also inconvenient for many customers. The ease of electronic payments with DBRs will create a significant advantage for merchants and customers in the cannabis industry.

Early Traction through Token Distribution

Thirteen and a half percent of tokens will go into a liquidity pool. A portion of these tokens will be distributed among cannabis industry participants (growers, processors, and retailers) who set up a DBR wallet, and a portion to consumers who establish a DBR wallet. The amount and timing of this cannabis industry token distribution are dependent on the number of DBRs held by cannabis industry participants after the initial coin offering. düber will distribute further tokens at future occasions if the liquidity of the network requires, until the liquidity pool is exhausted.

Alignment of Interests with Time-Based Lockups

Fifteen percent of tokens will be allocated to team members. These tokens will be released in two equal tranches – the first after twelve months and the second after twenty-four months. This aligns the düber team with continued interest in a stable or appreciating DBR value.

Discounts (up to 15%) on Advertising and düber Software Platform Fees

To incentivize the use of DBRs over fiat currency, düber will accept DBRs as payment for its technology services to retailers, processors, and growers. On higher margin services, such as advertising, the discount offered by düber will be substantial enough (up to 15%) for customers to want to pay in DBRs over a fiat currency.



Destruction of 50% of Transaction Fees

When a retailer pays a processor for goods received in DBRs, the network will charge the processor a small transaction fee. The exact amount is to be determined but will be lower than the cost of accepting cash or credit cards, ensuring that the payee is better off when receiving DBRs. This fee will be paid by the recipients of the token transfer but never the consumer. Half of the transaction fees will be burnt, driving future scarcity of DBRs.

Equitable Rates and Exchange

As a neutral party, **düber** will set and periodically review the rate card for the value of information exchanges in the network. The guiding principles are that rates should:

- Be fair for the token recipient (e.g., a fair compensation for the effort of writing a review) and the token payer (e.g., the brand being reviewed)
- Reflect marginal benefit (e.g., a first review for a new product will command a higher token amount than the n^{th} review)
- Be capped such that the liability of token payers is limited during a specific time interval

The rate cards will be expressed in fiat currency, to protect the **düber** network from potential artificial fluctuations in the DBR value driven by external forces. Not shielding the internal network rate card from these influences could lead to effort either being under-rewarded (insufficient incentive to write a product review) or over-rewarded (creating reluctance among brands to be reviewed). This would compromise the growth of economic surplus. Although not ideal, we prefer this solution over the artificial separation between an external and internal token.



The düber Reference Platform

The success of blockchain relies on the strength of the network using it. The greater the number of transactions/users, the greater the value of the tokens—which is a benefit for all. We are resting the **düber** token on three distinct advantages:

1. An established platform
2. A high-growth, emerging industry
3. An experienced team

The Story of düber

In January 2016, we started building a new platform for ecommerce that recognizes the unique opportunity in the cannabis space. The cannabis inventory supply chain is complex and fragmented; the retailers are in desperate need of better solutions; consumers are dealing with a massive lack of information; and everyone in the supply chain is suffering under an unusual federal tax regime.

Our geographic location in the Pacific Northwest (which includes the legalized states of Washington and Oregon) positioned us at the geographic crossroads of the changes in federal laws (Canada legalizing across all provinces) and state recreational laws. Our unique perspective has helped us build a federal-level system and then test and deploy it across individual states.

Our online ordering platform launched in the latter half of 2016. Normally, an online ordering platform could simply be bought and placed into service from a company such as Shopify, Bigcommerce, or Yahoo Stores. However, cannabis as a controlled substance requires all systems to be integrated with government-operated seed-to-sale systems, such as Biotrack or Franwell METRC, which themselves are also integrated into each retailer point-of-sale system. Obtaining access to these systems requires training and certification on each system. And then there are the unique laws of each state. Washington, for example, allows online ordering but neither online payment nor home delivery, while Oregon does allow home delivery. Finally, there is a supply chain and inventory problem—there is no definitive source of data as to whether a product is in or out of stock.

As a platform, **düber** was designed to reduce the friction for conducting ecommerce by removing numerous data entry and re-entry points and centralizing the inventory ordering and supply chain functions. The **düber** platform is based on proven economic and supply chain principles to reduce friction and improve economics for all participants. A centralized set of resources allows retailers, processors, producers, and other value-add participants in the supply chain to connect their existing hardware investments to the **düber** platform.

Once connected, small businesses benefit from the ease of a single point for updating inventory quantities, rather than an entire workload of photographing and entering massive amounts of data about each product. For retailers, using a standardized set of product data helps automate re-ordering, reduce staff training costs, and improve the accuracy of information.

For processors and producers, this centralized inventory function allows far better forecasting for production and product replenishment. For distributors and couriers, it offers better coordination of resources, fewer wasted trips, less rejected product, and, ultimately, reduced costs.



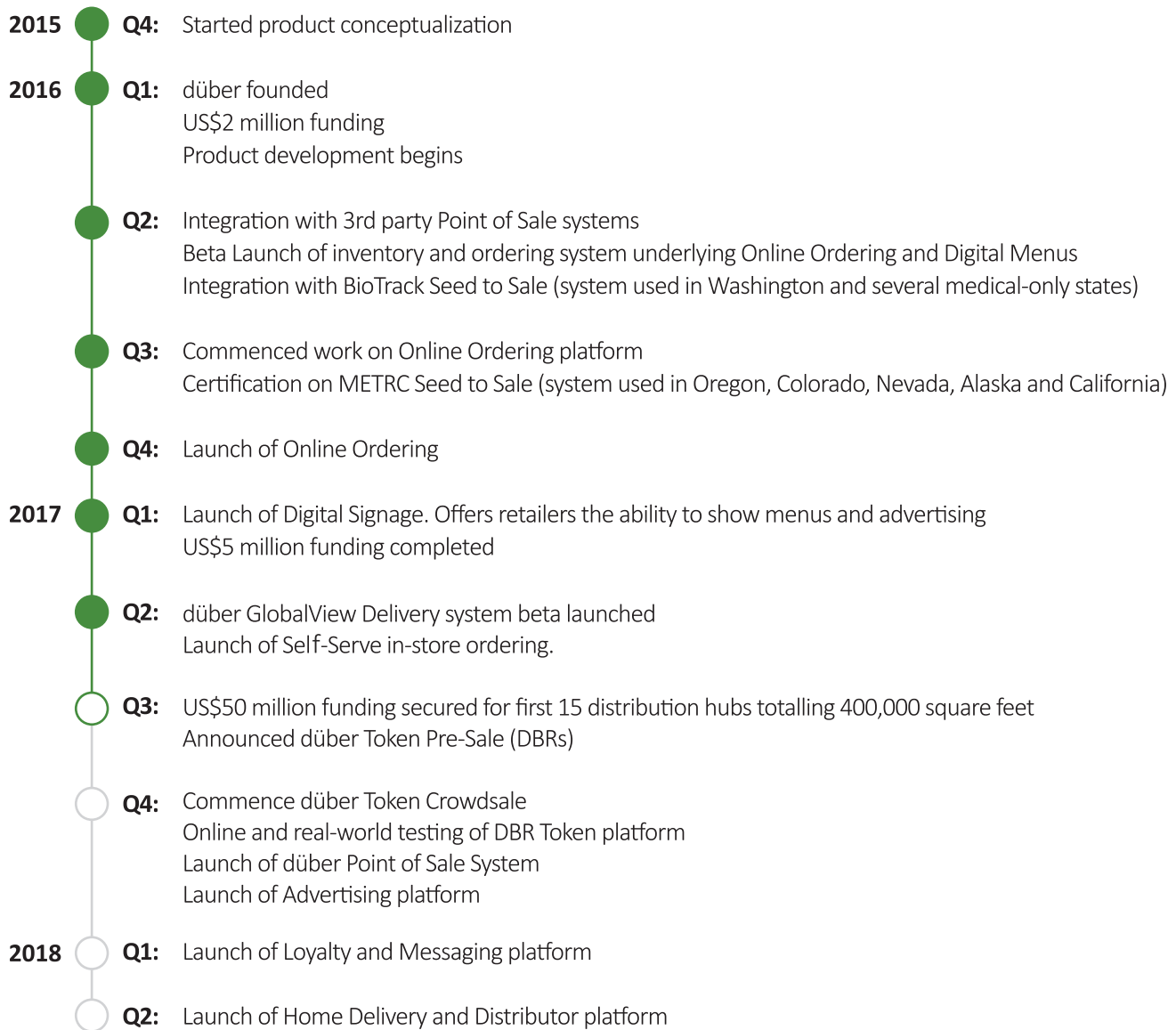
The Platform in the Market

As we have built out the system, we have received numerous enhancement requests from retailers, consumers, and regulators. Our solution now extends into the supply chain for producers, brand owners, labs, distributors, courier companies, and processors, and is integrated in its entirety to the online ordering and point-of-sale terminals. We have emerged to be the only “omnichannel” retailing solution entirely comprised of a modern, event-based architecture, built from the ground up to function as a unified system. This platform helps local businesses expose their available inventory in an online ordering system and coordinate delivery of controlled substances, without having to step away from the point-of-sale terminal.

The düber platform is used by some of the largest and fastest growing cannabis retailers in Washington State. The largest retailer (monthly revenue of \$1.4 million) has two stores on the ordering system. Others are adopting our in-store ordering and digital menus system, while others are focusing on the unique opportunities brought by our integrated digital advertising platform that provides millions of annual page views and in-store advertising impressions for customers every day. Consumers have motivated the development of our duberex.com ordering platform, which allows customers to find accurate product inventory at any retailer on our system in Washington, and immediately place an order with them. In total, we have more than 23 retailers live on one or more modules of our system, and another 30 under contract for installation as we conclude our beta trials and move into the commercial launch of our online ordering and advertising modules in October 2017. In Q4 we will be beta-launching the first POS-integrated seed-to-sale home delivery platform (using local retailer inventory) in Canada and the United States.



Key Milestones



About Our Team

Our team is composed of like-minded individuals with two important characteristics. First, we have solid track records creating significant shareholder value by building and managing startups through to publicly traded companies, including in the technology, environmental products, recycling, grocery, banking, and mobile payment industries. Second, we have a shared vision for a planet with increased access to medicine and health care, reduced waste, and a wider distribution of prosperity. We believe in using local resources and the Internet to connect people, products, and services, and we found a unique avenue in which to do that within the cannabis industry. With a seasoned management team and 16 full-time, experienced developers, we are confident that we can fulfill this mission. Our financial backing includes more than US\$7 million invested to date, and a recently secured \$50 million real estate line for the acquisition and fit out of 15 distribution centers, under which we will be the master lease holder.



The Crowdsale and Financial Model

Crowdsale Token Launch

We will raise up to 350,000 ETH to build out and scale our platform:

- 175,000 ETH for the North American cannabis market (U.S. and Canada)
- 175,000 ETH for the remaining global cannabis market

The pre-sale of our Crowdsale Token Launch (CTL) will start 15:01 UTC on October 25, 2017, and end at 23:59 UTC on December 4, 2017.

- Up to 35,000 ETH received during the period from 15:01 UTC on October 25, 2017 to 23:59 UTC on November 6 will be allocated 30% bonus tokens (3,900 DBR per 1 ETH)
- Up to 35,000 ETH received during the period from 15:01 UTC on November 7, 2017 to 23:59 UTC on November 20 will be allocated 20% bonus tokens (3,600 DBR per 1 ETH)
- Up to 35,000 ETH received during the period from 15:01 UTC on November 21, 2017 to 23:59 UTC on December 4 will be allocated 10% bonus tokens (3,300 DBR per 1 ETH)

Our Crowdsale Token Launch (CTL) will start 15:01 UTC on December 5, 2017, and end at 23:59 UTC on January 19, 2018. During this period purchasers will receive 3,000 DBR per 1 ETH.

If we receive 350,000 ETH before 23:59 UTC on January 19, 2018, we will end the CTL. If, at the conclusion of the CTL at 23:59 UTC on January 19, 2018, we have received less than 17,500 ETH we will cancel the CTL and return all ETH received.

We will issue 66,780,000 DBR tokens as bounties, and up to a further 47% of the total number of DBRs will be allocated as follows:

- 13.5% to seed the network liquidity
- 13.5% in controlled reserve
- 5% for partners
- 15% for the team

The 15% allocated to team tokens will be locked up as follows:

- 50% locked up for 12 months
- Remaining 50% locked up for 24 months

The value of DBR as expressed in USD is a function of the exchange rate between ETH and USD, but is intended to be around \$0.06–\$0.12 at the conclusion of the Crowdsale Token Launch.



Use of Funds

The funds collected through the CTL will be used to cover the expenses of the project until the project starts generating sufficient positive cash flows to sustain itself. If we pursue the full extent of the international and vertical markets that our technology can address, we expect to be break-even in 2020.

We plan to utilize the funds received as follows:

Further development of the düber platform	40%
Sales and Marketing	29%
Working Capital	15%
Operating Expenses	10%
General and Administrative	6%



Conclusion

Growing economic surplus for all network participants by providing proper incentives to those who create and distribute new information is a significant opportunity. Blockchain technology and a token are ideally suited to acknowledge and measure the growth in economic surplus, as well as allocate this increase fairly across the network. This equitable distribution supports local suppliers and retailers in the network, as well as the consumers who frequent them. It fosters competition and growth and prevents domination from large players external to the network.

düber is uniquely positioned to stimulate the growth of economic surplus. We are an established business with multiple products launched. Our technology is already integrated into our partners' supply chains at the inventory level, which enables us to get immediate traction, and our offering targets a high-growth, emerging industry with ideal characteristics for a blockchain platform.

The DBR token, our blockchain cryptocurrency based on Ethereum, will be used to measure and allocate growth in economic surplus across the value chain. With its strong technical foundation and comprehensive incentives, we expect DBRs to become the preferred method of payment by all participants (growers, processors, labs, distributors, retailers, and consumers) in the legalized cannabis market.



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Appendix: More About düber

Big Hairy Audacious Goal

Any product delivered in one hour or less or it's free

Our Vision

To be the leading consumer platform for cannabis including online ordering and same-day home deliveries

Our Mission

Our mission is to level the playing field for small and medium businesses by providing them a platform where they can effectively compete with large ecommerce players in online sales and home delivery

Objectives

- To deliver a superior integrated low-cost platform for the un-integrated supply chain to consumers
- To leverage the local inventory of retailers, wholesalers, and distributors as a competitive advantage to provide same-day delivery to consumers
- To provide a superior consumer ordering and trust experience
- To integrate rewards with consumer contributions
- To remove redundant distribution costs that act as hidden costs to consumers
- To build a billion-product description and consumer reviews database