



CYDigital™

Meaningful Relationships
Between Consumers
and Advertisers

v4.0

October, 2018

© 2018 CYDigital, Inc.

Table of Contents

Disclaimer.....	3
Executive Summary.....	4
The Parasitic Status Quo for Consumers and Advertisers in the Digital Advertising Market.....	4
The CYDigital Platform and Its “Control Your Data” Value Proposition.....	4
Overview of the CYDigital Platform’s Mechanics	5
Background: Problems and Opportunities in the Digital Advertising Market	7
Problems for Consumers	7
The Data Control Problem	7
The Identity Theft Problem.....	7
The Malware Problem	8
The Ad Blocker Problem.....	8
The Lack of Value-Added and Well-Targeted Advertising Problem	8
Problems for Advertisers.....	9
The Behemoth Middleman Problem	9
The Fragmented Data Problem.....	10
The Advertising Fraud Problem.....	10
Opportunities for the CYDigital Platform	11
The Digital Advertising Market Opportunity:	11
The Blockchain Technology Market Opportunity:	12
The Value Proposition and Architecture of the CYDigital Platform.....	12
System Architecture	13
Consumer DApp.....	18
Private Decentralized Data Record.....	19
The CYDigital Service	19
CYDigital Sequence Diagrams	20
Analysis Layer	23
Advertiser Portal.....	24
Smart Contract Layer	25
CYDT: The CYDigital Token	13
Advertiser “Offers”	14
The Standard Offer	14
The Moment of Truth Offer	15

The Super Offer	15
Differences Between the CYDigital Platform and Other Blockchain Platforms in the Digital Advertising Market	26
Plan for the CYDigital Platform's Launch	26
The CYDigital Team	27
<i>John Rizzo</i> , CTO & Visionary: https://www.linkedin.com/in/rizzo/	27
<i>Joe Rizzo</i> , CEO: https://www.linkedin.com/in/joemktg/	27
<i>Morgan Pierce</i> , CMO: https://www.linkedin.com/in/morgnpierce/	27
<i>Nicholas Lepley</i> , PhD Data Scientist & Advisor: https://www.linkedin.com/in/nicholas-lepley-91148915/	28

Disclaimer

This White Paper sets forth the structure of the CYDigital Platform envisioned and under development as of the publication date of this White Paper. This White Paper is for informational purposes only. Readers should be aware that aspects of the CYDigital Platform described in this White Paper may not be incorporated into the CYDigital Platform once launched. CYDigital reserves the right in its sole discretion to modify the functions of the CYDigital Platform in light of technological, business, and other considerations. Neither Consumers nor Advertisers will be able to purchase or obtain CYD Tokens ("CYDT") until the CYDigital Platform is fully functional and CYDT has available consumptive uses to both Consumers and Advertisers. Ownership of CYDT will be subject to a Token Purchase Agreement, terms of use, privacy policy and other similar agreements. The CYDT will not entitle holders thereof to any equity rights in CYDigital as a corporate entity.

Executive Summary

The Parasitic Status Quo for Consumers and Advertisers in the Digital Advertising Market

Behemoth Internet companies like Facebook and Google have generated hundreds of millions, if not billions, of dollars by selling individuals' online data to advertisers for exorbitant fees. Today's consumers understand that their personal information and online data are at risk when these middlemen aggregate and sell such data without each consumer's case-by-case approval. Meanwhile, today's advertisers understand that the intermediaries are exploiting them by charging excessive fees for data and advertisements that end up reaching a wrong audience.

Consumers should have the flexibility to control how their personal info is being used to personalize their experience.

The CYDigital Platform and Its “Control Your Data” Value Proposition

To disrupt the current oligopoly in the digital advertising market and provide the value-add that both consumers and advertisers so desire, CYDigital, Inc. (“CYDigital”) is creating a blockchain-based, smart contract-enabled platform (the “CYDigital Platform”) to provide:

1. Consumers of goods and services (“Consumers”) with the ability to track, guard, selectively share and derive value from the data generated by their online activities; and
2. Business-to-Consumer companies (“Advertisers”¹) with the ability to (i) reach their targeted Consumer groups with targeted advertisements and (ii) incentivize such Consumer groups to engage with their advertisements in order to receive the Advertisers' rewards or discounts.

To facilitate the selective exchange of Consumers' online data for Advertisers' rewards or discounts, CYDigital is creating an Ethereum-based blockchain token (the “CYD Token” or “CYDT”²) to function within the CYDigital Platform. Within the CYDigital Platform, Consumers will be able to:

- Earn CYDT by signing up for a Consumer account on the CYDigital Platform;

¹ For purposes of clarity, Advertisers include commercial brands and retailers. Political and advocacy groups will not be permitted to join the CYDigital Platform as Advertisers.

² For purposes of clarity, CYDT will not entitle holders thereof to any equity rights in CYDigital as a corporate entity. CYDT will not be exchange-listed upon the launch of the CYDigital Platform and CYDT will function exclusively within the CYDigital Platform.

-
- Earn CYDT by allowing the CYDigital Platform to track and store their online-generated data;
 - Earn CYDT when sharing their CYDT with friends and family when said friends and family sign up for the CYDigital Platform;
 - Receive CYDT when they selectively share the Digital Picture created by their online data with Advertisers;
 - Receive CYDT by engaging with Advertisers' advertisements;
 - Use their CYDT to access rewards and discounts offered by Advertisers; and
 - Buy CYDT from CYDigital when they need a certain amount of additional CYDT to access a desired reward or discount offered by an Advertiser.

Advertisers will be able to:

- Receive CYDT when Consumers exchange their CYDT for the Advertisers' rewards or discounts;
- Use their CYDT to reward targeted Consumers for granting them access to their Digital Pictures;
- Use their CYDT to reward targeted Consumers for engaging with their advertisements; and
- Buy CYDT from CYDigital when they need a certain amount of additional CYDT to access to Consumers to present their advertisements and offers.

Thus, there will be a variety of covetable consumptive uses for the CYDT for all participants within the CYDigital Platform.

Overview of the CYDigital Platform's Mechanics

The CYDigital Platform will operate, in part, via a decentralized application (a "DApp"), available on both a mobile app and a website. Consumers will be able to sign up for Consumer accounts on the mobile app or the website and will be able to input preliminary demographic data upon account sign-up. This preliminary demographic data will create a baseline Digital Picture of each Consumer.

The DApp will also include a plug-in, browser extension that Consumers will be able to toggle on or off, such that Consumers can enable or disable the DApp's tracking of their online activity. When a Consumer toggles the browser extension's tracking "on," the DApp will track the Consumer's online activity and create a more nuanced Digital Picture of the Consumer, which is stored in the DApp's secure data vault (the "Data Vault"). Consumers will be able to view and exclude certain previously-tracked data from their Digital Pictures on an ongoing basis. Within this infrastructure, Consumers will be able to selectively share their Digital Pictures with Advertisers for the Advertisers' market analysis or advertising purposes.

If a Consumer opts in to receive opportunities to share his or her Digital Picture with Advertisers, the decentralized analysis layer in the Data Vault (the "Vault Analysis Layer") will aggregate high-level demographic and interest-related information from the Consumer's "Digital Picture."

Advertisers will be able to request reports generated by the Vault Analysis Layer ("Analysis Layer")

Reports”) to identify the subset of Consumers participating in the CYDigital Platform that are likely interested in the Advertiser’s product or service. Once an Advertiser has identified this targeted subset, the Advertiser can issue a “Standard Offer” to the subset, in which the Advertiser offers CYDT to the Consumers who agree to receive advertisements and/or offers.

As a result of these “Digital Pictures,” Advertisers will be able to:

- Better understand and cater to their target market;
- Determine the best way to tailor advertisements to their targeted Consumers;
- Create “Standard Offers” or “Moment-of-Truth Offers” (“MOT”) in which they offer CYDT to Consumers who engage with their advertisements as the ads pop-up via the targeted Consumers’ browser extensions; and
- Determine how to structure “Super Offers”, which are discounted offers for their products or services, to attract the targeted Consumers to their brand.

CYDigital expects that Advertisers will adopt our philosophy of shared value, respect for Consumers’ time and attention, noninvasive communications with Consumers, and a Consumer’s right to own their data.

Background: Problems and Opportunities in the Digital Advertising Market

Problems for Consumers

The Data Control Problem

Consumers are creating tens of thousands of data points daily as they surf, chat, shop, or otherwise consume information online. At the mercy of the oligopoly in the digital advertising market, Consumers are sacrificially granting the rights to their online data to mammoth Internet companies, like Facebook and Google, who are then selling access to the Consumers' data and/or profiles to third-parties. Many third-parties are then bombarding Consumers with poorly targeted advertisements and messages for which the Consumers did not subscribe. According to research published by the DMA, Acxiom and Future Foundation, 80% of Consumers believe that personal data is their property and that they should be able to share their data as they see fit.³ In that vein, Consumers have reason to demand a system in which they are able to (i) determine which third-parties may have access to their online data, and (ii) receive rewards in exchange for granting such data to third-parties.

The Identity Theft Problem

Even if Consumers have knowingly agreed to grant certain rights to their data to huge Internet companies, these Consumers have not implicitly agreed to allow such companies or third-parties to exploit their personal data or identities. That said, many of these companies and third-parties wantonly put Consumers' personal data at risk. Exemplifying this risk, Facebook breached Consumer trust when they attempted to cover up a significant hacking initiative in which Cambridge Analytica stole the online data and personal identities of 87 million Facebook users, allegedly in order to help manipulate the 2016 U.S. Presidential elections.



Breaches in data
privacy will only
get worse, not
better.

³ Acxiom, *Data Privacy: What the Consumer Really Thinks*, June 2015 at 5, https://dma.org.uk/uploads/ckeditor/Data-privacy-2015-what-consumers-really-thinks_final.pdf.

The Malware Problem

According to OpenX, in 2016, the use of malvertising (using digital ads to spread malware) increased 132% compared to 2015.⁴ Malicious ads that deliver viruses and ransomware are becoming more sophisticated; some are even activated as soon as a user visits a compromised website and the ad is served.

The Ad Blocker Problem

Consumers have turned to ad blockers to improve their online experiences and reduce their mobile data costs related to unwanted ads. Research published by PageFair reports that, as of 2016, 11 percent of the total Internet population was blocking ads and that ad blocker usage was growing 30 percent year over year.⁵ That said, the report also indicated that 77 percent of the ad blocker-using Consumers were willing to view certain advertisements. In a different report, Kantar Media, surveying adults in the world's largest advertising markets, found that overall, 20 percent of connected adults always use an ad blocker.⁶ Again, 47 percent of survey respondents who used ad blockers claimed to like or tolerate advertising, but took issue with the excessive frequency and unsophisticated use of retargeting (the form of online advertising in which consumers receive ongoing ads from a site that they visited once). Thus, Consumers seem to be employing ad blocker technology not simply because the ads are an annoyance, but because the ads that they receive lack relevance to their unique interests.

In 2016, 11% of the total Internet population was blocking ads, and ad block usage is growing 30 percent year over year.

The Lack of Value-Added and Well-Targeted Advertising Problem

A growing body of evidence suggests that Consumers want advertising, but only desire well-targeted advertising that offers tangible or personalized value. To assess Consumers' advertising preferences and problems, Accenture conducted a study in 2012 in which they surveyed 2,000 Consumers in the United States and United Kingdom.⁷ While 86% of the Consumers in the study were concerned that their data was being tracked, 85% of the Consumers also said they realized

⁴ OpenX Staff, *How We're Protecting Digital Advertising from Malware*, The Xchange (Aug. 7, 2017), <https://blog.openx.com/how-were-protecting-digital-advertising-from-malware/>.

⁵ Sean Blanchfield, *The State of the Blocked Web; 2017 Global Adblock Report*, Page Fair (Feb. 2017), <https://pagefair.com/downloads/2017/01/PageFair-2017-Adblock-Report.pdf>.

⁶ Sara Guaglione, *Excessive Frequency, Retargeting Account for Ad Blocker Usage*, PublishersDaily (Feb. 21, 2018), <https://www.mediapost.com/publications/article/314919/>.

⁷ Grace Nasri, *Why Consumers Are Increasingly Willing to Trade Data for Personalization*, Digital Trends (Dec. 10, 2012 12:00 PM), <https://www.digitaltrends.com/social-media/why-consumers-are-increasingly-willing-to-trade-data-for-personalization/>.

that Advertisers need personal data to deliver relevant and targeted content. In addition, nearly half of the respondents said they were receptive to allowing trusted brands to track their data in return for relevant recommendations and targeted offers. Of note, 88% of the respondents believed that Advertisers should give Consumers the flexibility to control how their personal information would be used to personalize their shopping experience.

Problems for Advertisers

The Behemoth Middleman Problem

In order to reach Consumers, Advertisers almost always need to engage high-cost intermediaries. Research published in 2016 from Margaret Boland at BI Intelligence suggests that for every \$1 spent on digital advertising, only \$0.44 of value is delivered to the Advertiser, with the rest going to intermediaries.⁸ Massive intermediaries have been able to siphon value out of Advertisers' pockets because of the limited state of competition in the digital advertising industry. Today, two of these intermediaries, Google and Facebook, essentially control the digital advertising industry. In 2017, these two Internet giants controlled 63.1 percent of the U.S. digital advertising investment, while Google alone controlled 33% of worldwide digital advertising revenue,⁹ and Facebook earned an average of \$20.21 in advertising revenue per user annually.¹⁰ Moreover, data indicates that these two players are absorbing almost all digital advertising industry growth, with a whopping 85% of 2017's growth attributed to these two companies. Because these companies have cornered the digital advertising market, Advertisers have little choice but to pay large sums to reach Consumers, even though an incredibly large portion of that sum goes directly into the pockets of enormous intermediaries, who are delivering little value-add to Advertisers in return.



In 2017, Google and Facebook controlled 63.1% of the U.S. digital advertising investment.

⁸ Margaret Boland, *The US Digital Media Ad Revenue Report: The path to \$100 billion in annual revenue by 2021*, Business Insider Intelligence (Aug. 16, 2016, 2:32 PM), <https://intelligence.businessinsider.com/analysts/margaret-boland>.

⁹ Rani Molla, *Google Leads the World in Digital and Mobile Ad Revenue*, Recode (July 24, 2017, 2:31 PM EDT), <https://www.recode.net/2017/7/24/16020330/google-digital-mobile-ad-revenue-world-leader-facebook-growth>.

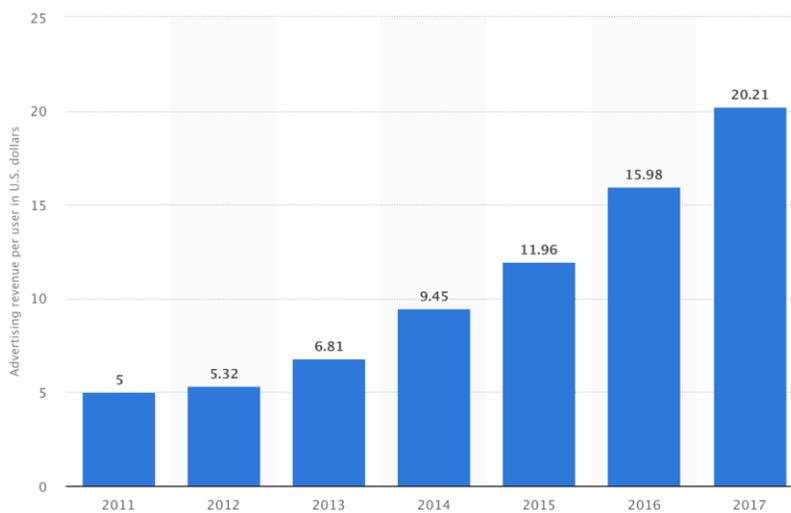
¹⁰ Statista, *Facebook's Annualized Revenue Per User from 2012 to 2017 (in U.S. Dollars)*, Internet, Social Media & User-Generated Content (2018), <https://www.statista.com/statistics/234056/facebooks-average-advertising-revenue-per-user/>.

The Fragmented Data Problem

There is no 'single source of truth' for customer data.

Advertisers typically depend upon an array of advertising technologies and more than one intermediary to obtain adequate customer data because each of the technologies and intermediaries only provide fragmented consumer data. For example, Google, Facebook and Amazon each have a profile of each Consumer from the perspective of their own limited scope. These companies do not have the means to create a Consumer blueprint which combines all search, view, and purchase histories. Although Advertisers are increasingly demanding more granularity in targeting capabilities to reach Consumers, Advertisers are currently only able to try to piece together a complete digital picture of Consumers' wants and needs based on fragmented data.

The Advertising Fraud Problem



Data visualized by + a b l e a u

© Statista 2018

A number of entities in the digital advertising market have created armies of bots to view and click on ads, creating huge volumes of fake traffic that garner them excessive fees from Advertisers. A study published by Juniper Research in September 2017 found that Advertisers will lose an estimated \$19 billion in 2018 from fraudulent activities creeping into the fragmented digital advertising supply chain.¹¹

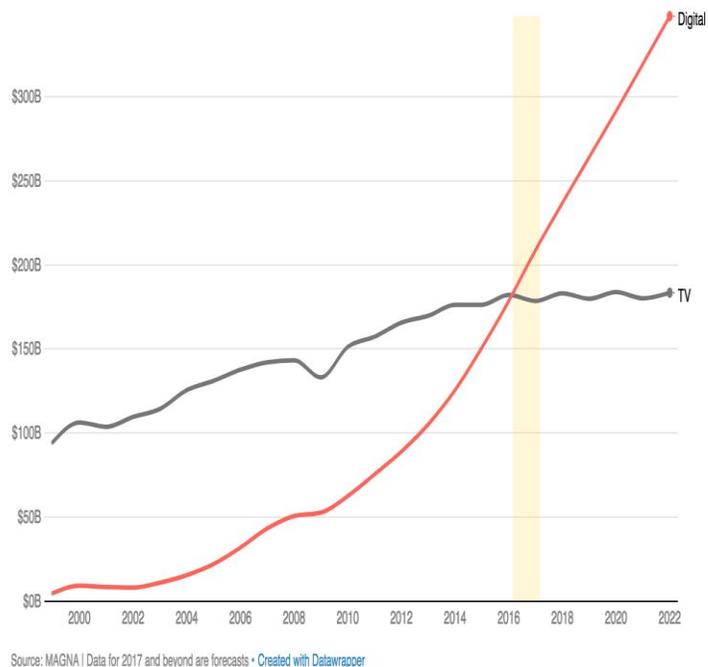
The same report indicated Advertisers' costs due to advertising fraud are expected to continue to rise, reaching \$44 billion by 2022.

¹¹ Juniper Research, *Ad Fraud to Cost Advertisers \$19 billion in 2018, Representing 9% of Total Digital Advertising Spend*, Business Wire (Sept. 26, 2017, 4:30 AM EDT), <https://www.businesswire.com/news/home/20170926005177/en/Juniper-Research-Ad-Fraud-Cost-Advertisers-19>.

Opportunities for the CYDigital Platform

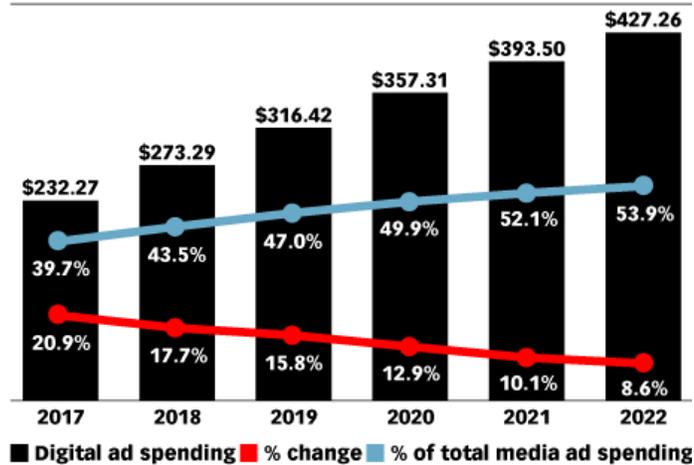
The Digital Advertising Market Opportunity:

According to Magna, the research arm of media-buying firm, IPG Mediabrands, 2017 was a flagship year for the digital advertising market because it was the first year that digital advertising surpassed television advertising in annual spend.¹² Magna's report specifically indicated that, in 2017, digital advertising raked in \$209 billion globally or 41% of total advertising spend, while television advertising accounted for \$178 billion or only 35% of total advertising spend. Meanwhile, according to eMarketer, digital advertising will continue to exhibit robust growth, expanding to 52.1 percent of total media spend in 2021 from an estimated 43.5 percent of total media ad spend in 2018.¹³



Source: MAGNA | Data for 2017 and beyond are forecasts • Created with Datawrapper

Digital Ad Spending Worldwide, 2017-2022
billions, % change and % of total media ad spending



Note: includes advertising that appears on desktop and laptop computers as well as mobile phones, tablets and other internet-connected devices, and includes all the various formats of advertising on those platforms; excludes SMS, MMS and P2P messaging-based advertising
Source: eMarketer, March 2018

236087

www.eMarketer.com

¹² Peter Kafka and Rani Molla, *2017 Was the Year Digital Ad Spending Finally Beat TV*, Recode (Dec. 4, 2017, 1:46 PM EST), <https://www.recode.net/2017/12/4/16733460/2017-digital-ad-spend-advertising-beat-tv>.

¹³ eMarketer Releases New Global Media Ad Spending Estimates: Digital channels will overtake traditional mediums by 2021, eMarketer (May 7, 2018), <https://www.emarketer.com/content/emarketer-total-media-ad-spending-worldwide-will-rise-7-4-in-2018>.

The Blockchain Technology Market Opportunity:

With the advent of blockchain technology, there is a market opportunity to (i) create a decentralized vault to store Consumers' online data, (ii) empower Consumers to determine the Advertisers with which they want to share their online data, (iii) enable Consumers to receive rewards or discounts in exchange for sharing their online data with Advertisers, (iv) enable Advertisers to reach their targeted Consumer groups with tailored advertising, and (v) provide Advertisers access to more comprehensive Consumer data from their target market.

The Value Proposition and Architecture of the CYDigital Platform

To provide the value-add that Consumers and Advertisers demand in the digital advertising market, CYDigital, Inc. is creating a blockchain-based, smart contract-enabled platform (the "CYDigital Platform") to provide:

1. Consumers of goods and services ("Consumers") with the ability to track, guard, selectively share and derive value from the data generated by their online activities; and
2. Business-to-Consumer companies ("Advertisers¹⁴") with the ability to (i) reach their targeted Consumer groups with targeted advertisements and (ii) incentivize such Consumer groups to engage with their advertisements in order to receive the Advertisers' rewards or discounts.

CYDigital will adhere to its philosophy of shared value, respect for Consumers' time and attention, noninvasive communication with Consumers and, most importantly, Consumers' ownership of their data. Integrity goes hand in hand with regard for privacy. Advertisers that participate in our system will be building loyalty and trust with Consumers from which all will benefit.

CYDigital will build integrity through:

- Sharing in the value chain
- Respect for Consumers' time and attention
- Noninvasive communications
- Consumer ownership of data
- Protection of Consumer data from abuse
- Shielding Consumers from uninvited advertising

¹⁴ For purposes of clarity, Advertisers include commercial brands and retailers. Political and advocacy groups will not be permitted to join the CYDigital Platform as Advertisers.

CYDT: The CYDigital Token

To facilitate the selective exchange of Consumers' online data for Advertisers' rewards or discounts, CYDigital is creating an Ethereum-based blockchain token (the "CYD Token" or "CYDT"¹⁵) to function within the CYDigital Platform. Within the CYDigital Platform,

Consumers will be able to:

- Earn CYDT by signing up for a Consumer account on the CYDigital Platform;
- Earn CYDT by allowing the CYDigital Platform to track and store their online-generated data;
- Earn CYDT when sharing their CYDT with friends and family when said friends and family sign up for the CYDigital Platform;
- Receive CYDT when they selectively share the Digital Picture created by their online data with Advertisers;
- Receive CYDT by engaging with Advertisers' advertisements;
- Use their CYDT to access rewards and discounts offered by Advertisers; and
- Buy CYDT from CYDigital when they need a certain amount of additional CYDT to access a desired reward or discount offered by an Advertiser.

Advertisers will be able to:

- Receive CYDT when Consumers exchange their CYDT for the Advertisers' rewards or discounts;
- Use their CYDT to reward targeted Consumers for granting them access to their Digital Pictures;
- Use their CYDT to reward targeted Consumers for engaging with their advertisements; and
- Buy CYDT from CYDigital when they need a certain amount of additional CYDT to access to Consumers to present their advertisements and offers.

Thus, there will be a variety of covetable consumptive uses for the CYDT for all participants within the CYDigital Platform.

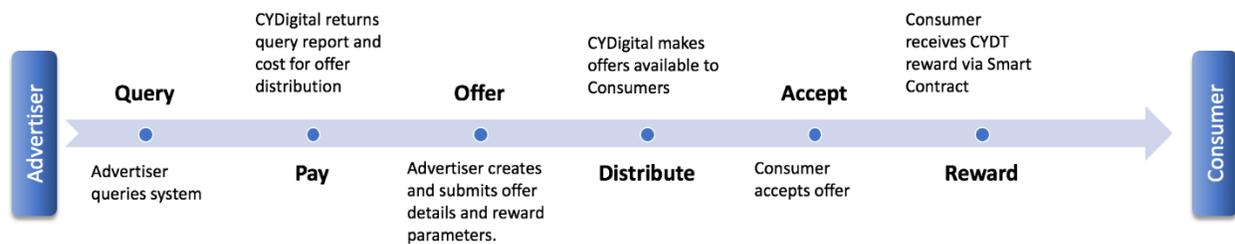
¹⁵ For purposes of clarity, CYDT will not entitle holders thereof to any equity rights in CYDigital as a corporate entity. CYDT will not be exchange-listed upon the launch of the CYDigital Platform and the CYDT will function exclusively within the CYDigital Platform.

Advertiser “Offers”

CYDigital has three types of products meant to address Consumers who are at different stages of the buyer journey. In all stages, CYDigital strives to make the consumer experience noninvasive. All stages are opt-in with clear and easy-to-understand tools to toggle on and off.

Many Consumers are not yet familiar with cryptocurrency or digital tokens, so CYDigital has factored this into the system. CYDigital is creating a user-friendly DApp that will allow the Consumer to earn and use CYDT similar to how they interact with other user reward systems.

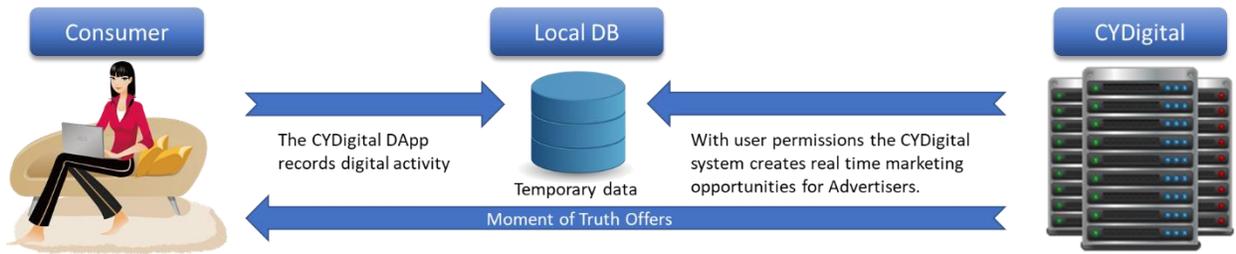
The Standard Offer



In the Standard Offer, Advertisers submit a query to CYDigital for the target Consumers they are seeking. CYDigital then searches the accessible consumer-decentralized records to find suitable matches. This is done by searching through the Level 2 data for a first pass and then acting on those findings to further refine the results by searching through the Level 1 data (this is delineated further in the CYDigital Platform section of this White Paper). Once the results are calculated, CYDigital then presents the Advertiser with a report showing the number of suitable targets that match the query.

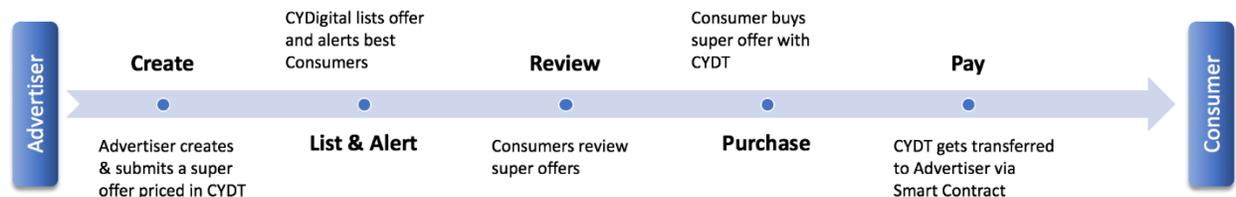
CYDigital will invoice the Advertiser, payable in CYDT, to reach the suitable targets. The invoice amount to reach suitable targets is payable before the offer presentation takes place. CYDigital will then deliver the reward directly to the Consumer. A Consumer who accepts the offer will earn a CYDT reward and enter into a smart contract with CYDigital where the Consumer receives the offer and the Advertiser receives a snapshot of the user’s data consistent with the original query.

The Moment of Truth Offer



Moment of Truth (MOT) offers are real time offers from Advertisers to Consumers that are made at the most relevant time -- while Consumers are seeking to acquire goods or services. CYDigital achieves this through access to the transient local data source built into the Consumer DApp. This only happens with the permission of Consumers, who also can easily turn off access. While a Consumer is looking for goods or solutions, CYDigital will search its list of offers for those relevant to the Consumer's desires. When a suitable match is found, CYDigital will inform the Consumer that an offer is available and serve it to them if desired. MOT offers are the most timely and relevant connections an Advertiser can make with a Consumer. The CYDigital real-time MOT offer engine will be a key technology in the system.

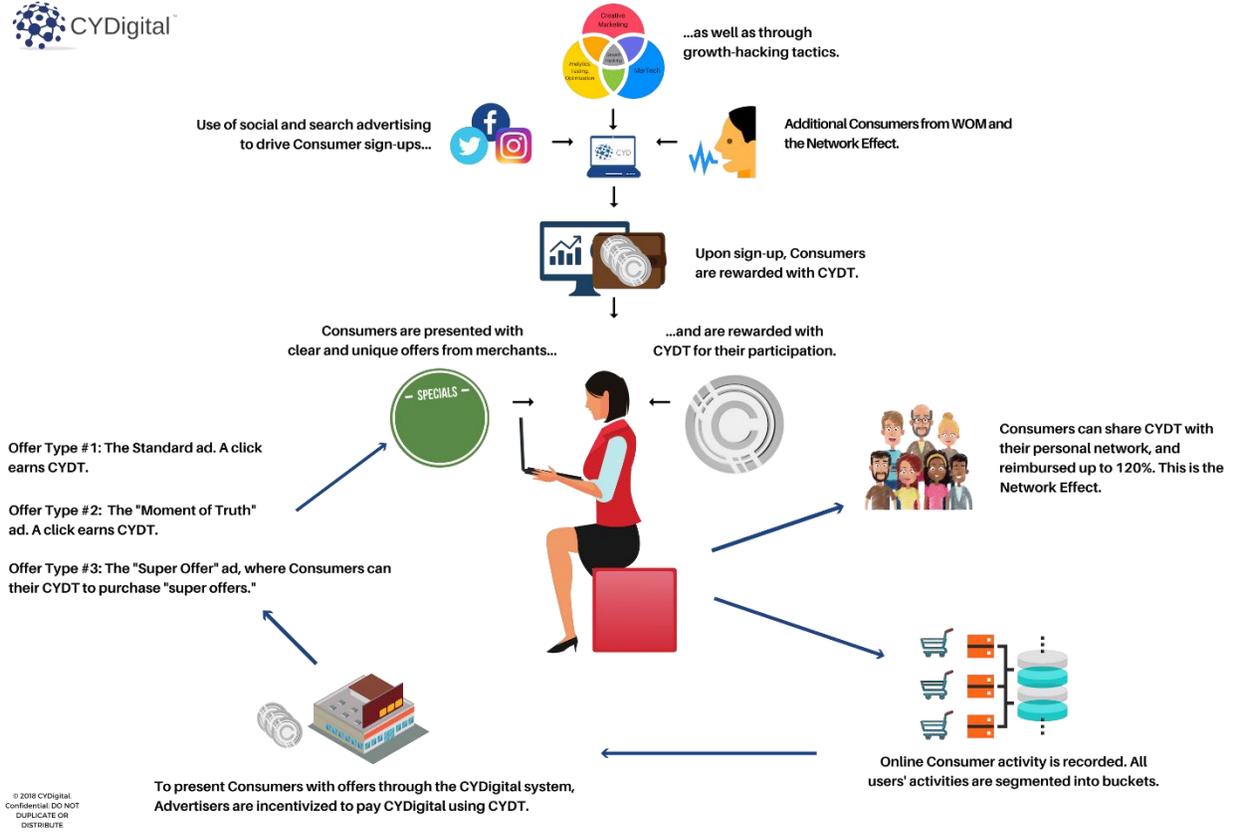
The Super Offer



With Super Offers, Consumers can exchange CYDT for digital coupons via the Super Offers portion of the CYDigital Platform. A Super Offer is a high-value offer from Advertisers that are open to all CYDT Consumers. Blockchain technology enables the creation of unforgeable digital coupons. The CYDigital Platform lets Advertisers create smart contract-based digital coupons and allows Consumers to take advantage of these coupons using CYDT.

Super Offers allow the Consumer to benefit from all their data capture activities, rewards earned, etc., and convert their earned CYDT into real, tangible discounts from Advertisers.

The Advertiser is billed upfront by CYDigital for the placement of the Super Offer, where it is distributed to any segment of Consumers specified by the Advertiser. Should the Consumer accept the offer, a smart contract is created between the Consumer and Advertiser where in return for the offer acceptance, the Advertiser receives a pre-specified amount of CYDT from the Consumer. The Advertiser can then, in turn, use that CYDT for other CYDigital services.



© 2018 CYDigital. Confidential. DO NOT DUPLICATE OR DISTRIBUTE.

System Architecture

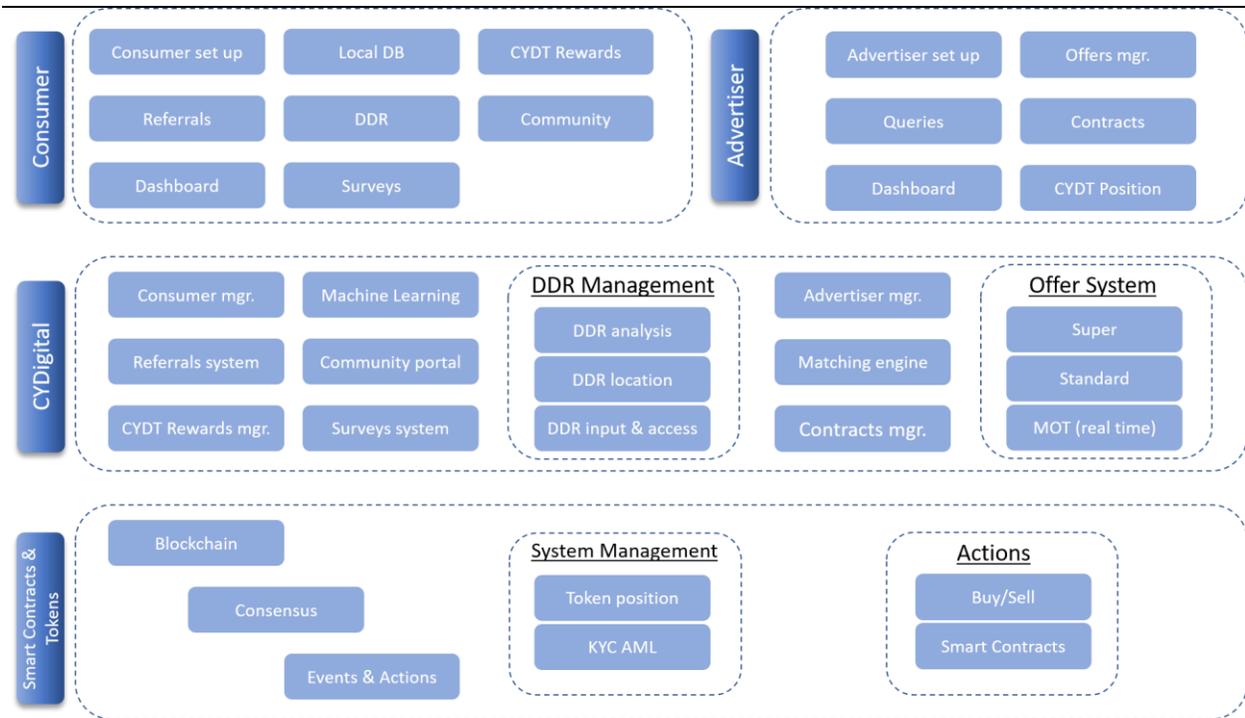
The system architecture is designed to provide granularity and transparency while maximizing value for Advertisers and for Consumers. The key components of the system architecture are the data store, the abstraction and query layer, and the smart contract interface.

The data store is an encrypted, multi-profile storage medium that captures user-selected, data-relevant actions such as browsing history, bookmarks, online shopping transactions and ad engagement. Consumers can view the data recorded in this data store and use it to track their own behavior. This data store creates a Digital Picture of the Consumer, and Consumers with data in the data store have the option to share the encryption keys for that Digital Picture with CYDigital, allowing Consumers to participate in the CYDigital Platform.

The data store is a two-component system. The local component of the data store captures and encrypts Consumer data from the browser, while long term storage for the data happens via a decentralized data store (“Private Decentralized Data Record” or “DDR”) where participants are compensated with CYDT when stored data is accessed. This distributed system is inherently resistant to hacking and data breaches since there is no single store of user records.

Once a Consumer shares their Digital Picture with CYDigital, an anonymized index corresponding to the user gets added to the CYDigital Consumers database via the data abstraction layer. This allows CYDigital to direct relevant offers to the Consumer. Searches against the database return anonymized and aggregated results for the number of Consumers matching the criteria specified in the search.

Data is obtained from Consumers via a smart contract layer. Advertisers who wish to obtain a Consumer’s data make a smart contract offer for the data they are requesting, which is forwarded to the corresponding Consumers. If they accept the offer, a snapshot of their data is transmitted to the Advertiser and an amount of CYDT corresponding to the contract value is credited to the Consumer’s account.



CYDigital System Architecture

Consumer DApp

The primary purpose of the Consumer DApp is to allow Consumers to capture and encrypt their data. It also serves as a portal for Consumers when interacting with the CYDigital Platform. It provides tools to help Consumers manage the cryptographic security of their data, create and maintain their CYDT account, and provides insight for Consumers into their Internet usage (e.g. time spent on various websites). The Consumer-centric DApp allows Consumers to collect, manage, and securely store all the data from their various online activities.

The DApp has these features:

1. Can be toggled on or off.
2. Consumers can blacklist sites from data collection.
3. Certain types of data will not be collected, such as: financial data (credit cards, payment gateway info, banking) and adult content.
4. CYDigital Access to the collected data and processes can be turned off.
5. Consumer access to dashboard showing collected data.
6. Consumer tracking of what entities/Advertisers have been given data snapshots (time, reason/offer, content)
7. CYDT balance and usage reports.

Private Decentralized Data Record

As part of fulfilling CYDigital’s commitment to user privacy, Consumers’ data will be stored in a private decentralized data record (DDR) to which only the Consumer controls access via cryptographic keys. This data record serves as the secure storage for the Consumer’s collected online activity data and will contain the history of all actions taken by the Consumer around that data. These actions can be in the form of data snapshot access, who received it, why was it given, and what did they get for it.

The interactions with the Consumer DApp are shown in the graphic to the right.



The CYDigital Service

The CYDigital service connects to the Consumer’s data and processes to facilitate connections between them and Advertisers that have offers that may be of interest to the Consumers. Note that this interaction and the sharing of Consumer data with Advertisers is completely at the discretion of the Consumer.

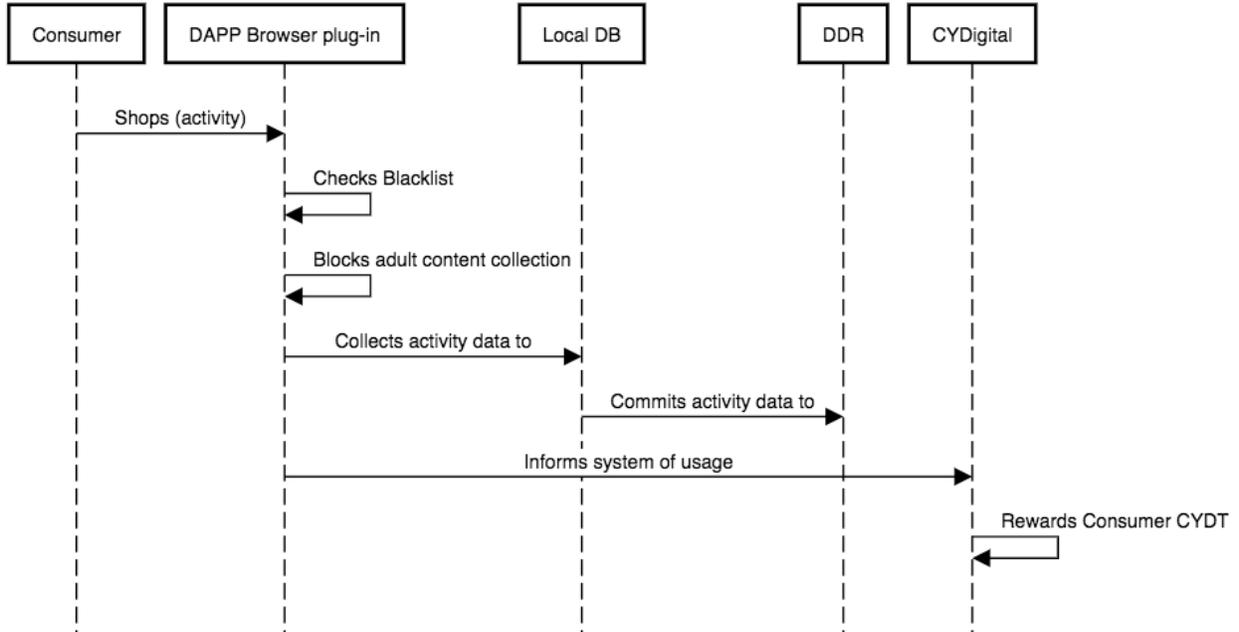
CYDigital is the mediation point between the Advertiser and the Consumer. CYDigital works with the Advertiser to make high-value and rewarding offers available to Consumers. The Consumer decides if the Advertiser can have a limited snapshot of their data by accepting the offer and the accompanying CYDT reward. The CYDigital Service Analysis Layer accomplishes this by digesting and structuring Consumer usage data stored in the Consumer’s private location node.

CYDigital takes steps to make sure that Consumer data has not been tampered with and is structured in a consumable way for the CYDigital processes. CYDigital does not record or store any of the Consumer’s underlying data in its own database.

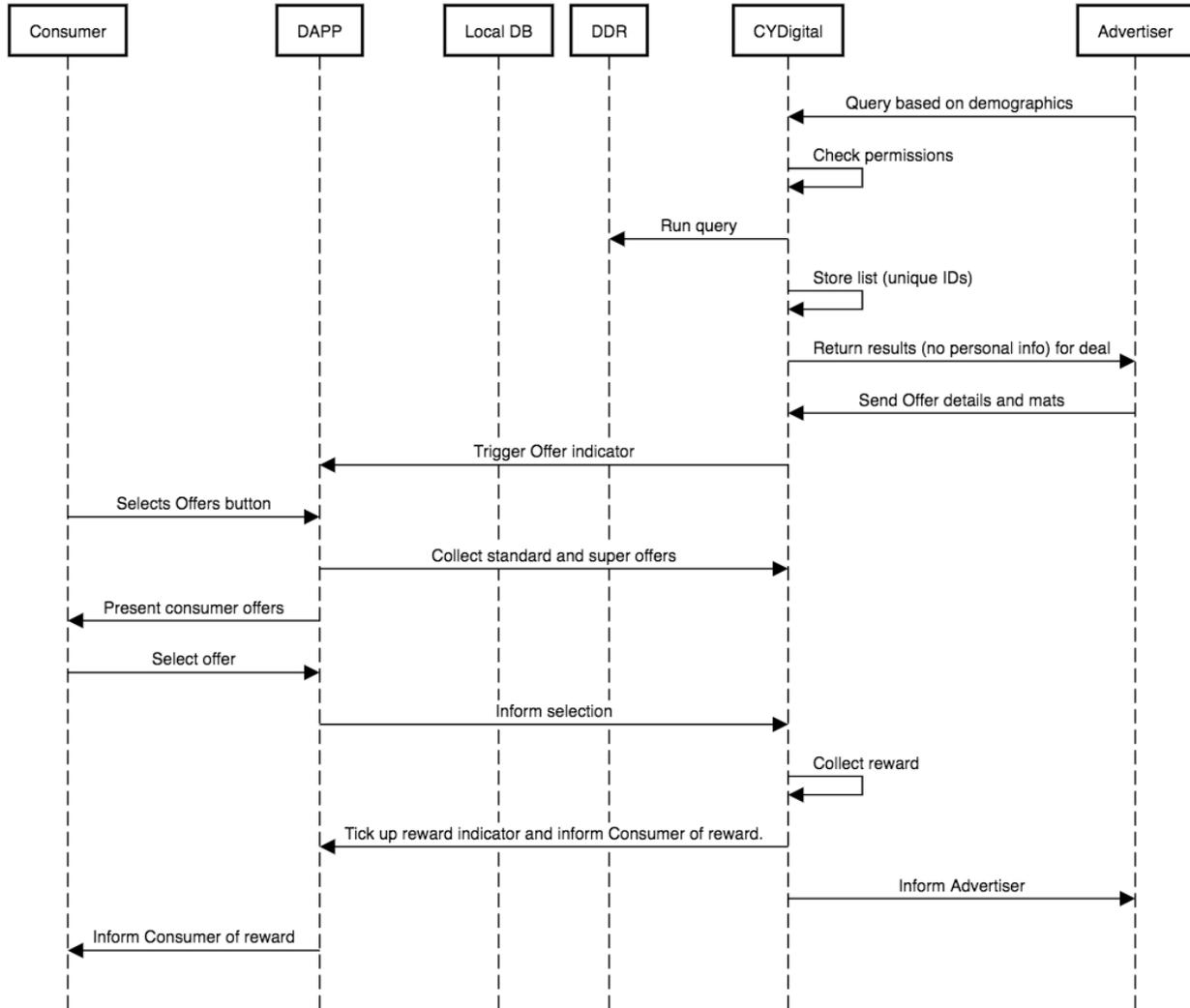
Another feature of the CYDigital system is its real time ad engine. With consumer permission, CYDigital can serve up offers from Advertisers to Consumers while Consumers are shopping for a product or service. These are high-relevancy offers made while the Consumer is showing the most interest.

CYDigital Sequence Diagrams

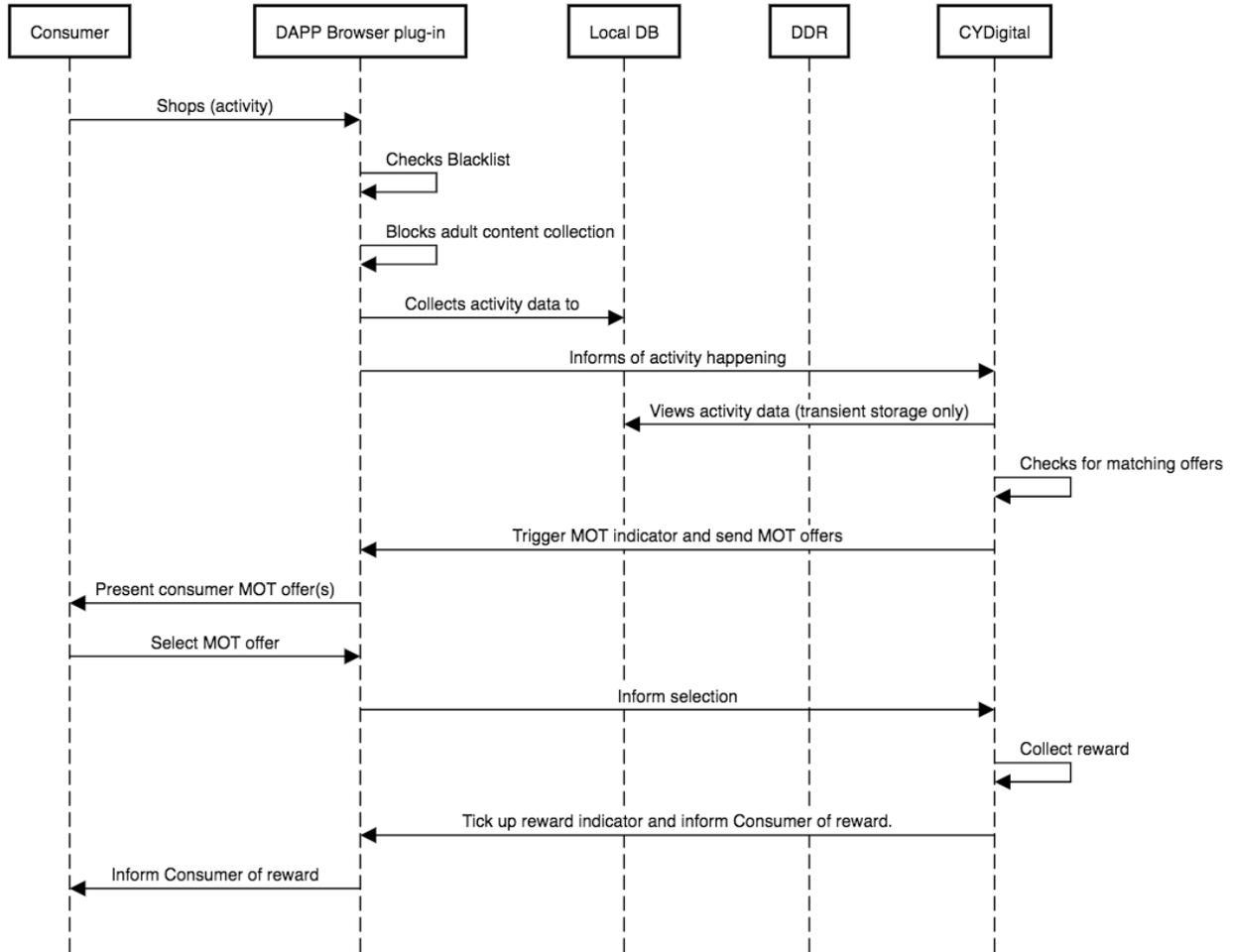
Base Consumer DAPP interaction for activity data collection



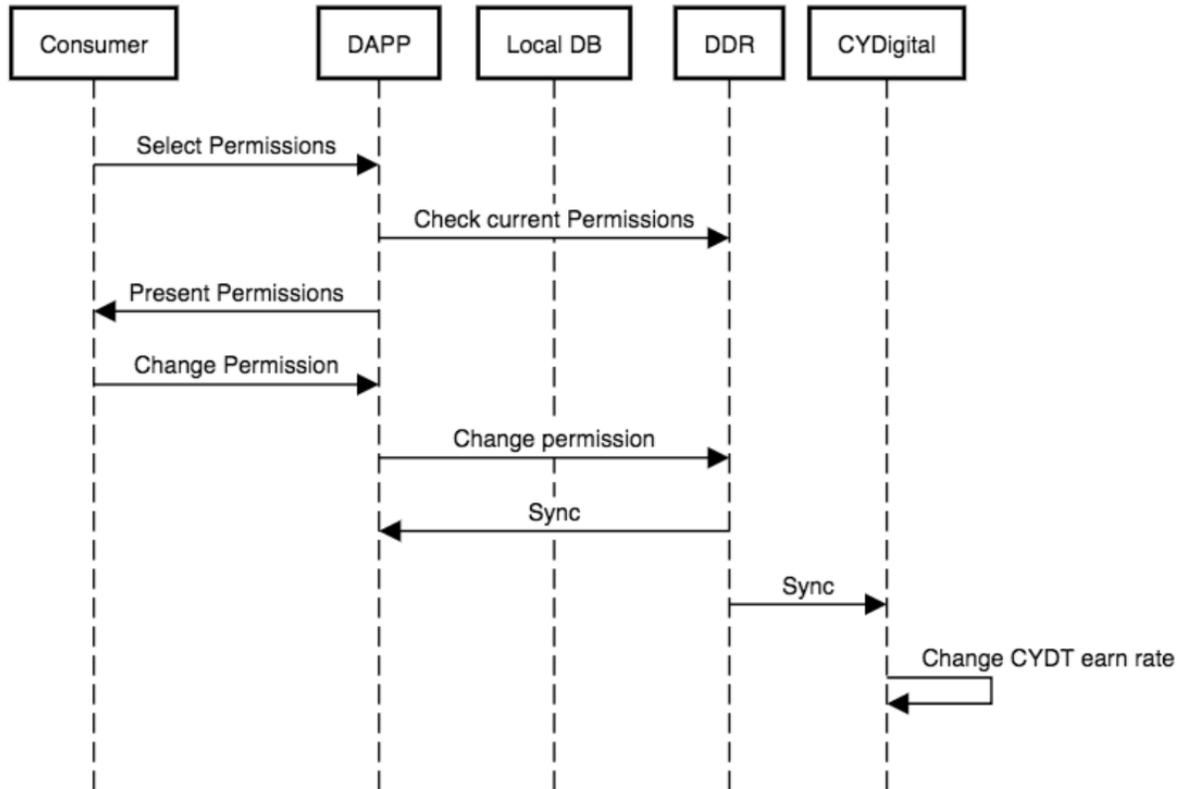
Standard Offer & Super Offer Interactions



MOT Offer Interactions



Permissions interactions



Analysis Layer

The Analysis Layer, acting on the decentralized record, will stratify Consumer data into several levels. These levels can be divided into three broad categories, although additional segmentation will exist in practice.

Level 0 data ('raw level') represents the raw data stream created by Consumers captured by the local storage application.

Level 1 data ('insights level') will take the raw data and abstract it into a human readable format that can be used by the data owners and, if selected by Advertisers with whom they choose to share their data.

Level 2 data ('metadata level') will be used to uniquely identify Consumers, to track participation in the CYDT ecosystem, prevent fraud, and verify users.

Consumers will be able to peer into the contents at all levels so they retain control and ownership of their data.

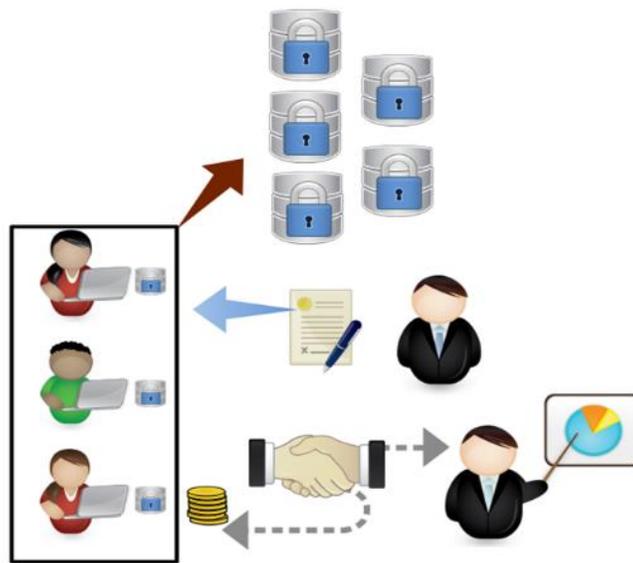
Advertiser Portal

The Advertiser Portal will allow Advertisers to submit query requests so that CYDigital can find matching Consumers that have granted access to CYDigital. It will also provide analytics tools that Advertisers can use to manage and understand the impact of their CYDT campaigns.

Pages	Page items and functions
Login page	We will have a business process for signing up Advertisers. One of the items in that process will be setting up credentials for a custom portal. Later we will have an automated system for signing up and vetting Advertisers.
Dashboard	Shows all active offers and activity on those offers. Past offers and historical activity such as executed smart contracts, clicks without commits, mouseovers, and more.
Advertiser Portal	This page is the start page for Advertisers. It includes: <ol style="list-style-type: none"> 1. Dashboard link 2. Standard Offer page link 3. MOT page link 4. Super Offer page link NOTE: All offers will be curated.
Standard Offer Query and Set Up	This starts with a demographic query made by the Advertiser which leads to a response from CYDigital for the query. The Advertiser then sets up the offer much like they would in the MOT offers and CYDigital delivers the offer to the Consumers.
MOT Offer Set Up page	We will do this via an automated process for taking in multiple items that can be shown to Consumers along with bounties for accepting the MOT offers.
Super Offer set up page	Super Offers are high value coupons that Consumers use CYDT to access. The Advertiser can set up super offers and can also set up target demographic boundaries for the super offers.

Smart Contract Layer

Both the Advertiser Portal and the Consumer DApp will provide tools for Consumers and Advertisers to manage smart contracts centered around data exchange. Advertisers can offer targeted smart contracts to Consumers who meet certain criteria. Consumers who accept the terms of these contracts will agree to share a snapshot of their Digital Picture with Advertisers in exchange for a reward in CYDT.



Smart Contract Layer

Differences Between the CYDigital Platform and Other Blockchain Platforms in the Digital Advertising Market

CYDigital believes that the following chart represents the differences between the proposed CYDigital Platform and CYD Token, as compared to those of its likely competitors.

Direct Competition						
Who	URL	Country of Origin	Description	Status	Positioning	Comparison
Basic Attention Token	https://basicattentiontoken.org/	US (SF)	Through their proprietary browser , user attention is tracked. Publishers receive coin based on user attention, Users receive more targeted ads and earn coin. Advertisers receives better data.	System development complete; tokens issued	Requiring consumers to use their browser vs. Chrome, Firefox, etc. Even with this significant required change in Consumer behavior, they currently have 4.6MM active users of their "Brave" browser.	CYDigital does not require a different browser from that which the Consumer is familiar and uses. CYDigital's solution is innocuous, operating in the background without interfering with the Consumer's online behavior.
Datawallet	https://datawallet.com	US	Datawallet provides tools to the enterprise to create applications around a consumer wallet , with the incentive of coin.	System development in progress; tokens issued	<ul style="list-style-type: none"> • "Take control of your data"; Provides users with a wallet that puts them in charge of their data, and allows them to monetize • Empowers Enterprise developers to build advanced applications • Still in beta (as of 10/9/18) 	CYDigital does not require any development within the value chain. CYDigital's solution is complete.
Shopin	https://tokensale.shopin.com/	US	Retailers upload their consumer data to allow consumers to own that data , then ML recommendation engine drives additional sales; Coin used as incentive.	System development complete; tokens issued	Own Your Data: A secure profile that enables shoppers to own their complete purchase data. Shopin enables retailers to better understand and serve their customers. Requires retailers to take an out-of-process step to give up their crown jewels to the consumer. Many competitors in the upsell/resell space.	This is a retailer-centric solution where it is incumbent on the retailer to manage the application, e.g., upload data, track, upsell. CYDigital's solution does not require application management . NOTE: the CEO recently indicted.
APEX	https://apex.chinapex.com/	China	An exchange: An application that allows consumers to store all data, and an application for Enterprises to purchase that data.	System development complete; tokens issued	An enterprise play. An ecosystem that will decentralize the way B2C interactions take place across the entire consumer lifecycle.	This is an exchange where consumers are provided an opportunity to offer their data up for sale. CYDigital's solution does not require any effort from the Consumer: the Consumer only needs to sit back and watch offers come to them.

Plan for the CYDigital Platform's Launch

CYDigital is conducting an early-stage private securities offering to raise capital to bring a fully-functional CYDigital Platform and CYD Token to market. Once the CYDigital Platform is fully functional and CYDT has available consumptive uses for Consumers and Advertisers within the CYDigital Platform, CYDigital plans to make available CYDT to Consumers and Advertisers seeking to participate in the closed-loop ecosystem offered by the CYDigital Platform.¹⁶

¹⁶ Upon the launch of the CYDigital Platform, CYDT will not be exchange-listed and CYDT will only function within the closed-loop CYDigital Platform.

The CYDigital Team

John Rizzo, CTO & Visionary: <https://www.linkedin.com/in/rizzo/>

With over 30 years of experience in the ad tech-related industry, John set out to start a company that would leverage blockchain technology to create a system that enabled Consumers to control their online data. Bringing his vision to fruition, John co-founded CYDigital, Inc., so named to reference the Company's mission of empowering Consumers to "Control Your Data." Before co-founding CYDigital, John held senior technology positions such as: Chief Architect at Vodafone Global, VP Technology at Aplix Corp, and SVP of Products and Innovation for Ubitus Inc. John has also worked on technology standards in the OMA (Open Mobile Alliance), OMTP (Open Mobile Terminal Platform), LiMo (Linux Mobile), OSGi (Open Services Gateway initiative), and the JCP (Java Community Process) where he was a two-term executive committee member. John was also awarded JCP Member of the Year in 2010 for his leadership. Thanks to these experiences, John brings to CYDigital his skills in engineering management, software architecture, embedded platforms, telecommunications, IP formation and management, mergers and acquisitions, business development, and advising start-ups in the technology sector.

Joe Rizzo, CEO: <https://www.linkedin.com/in/joemktg/>

Recognized as a leader in the marketing technology industry (including as the #3 MarTech Influencer by Onalytica), Joe has been providing strategy, software, and support guidance to B2B and B2C companies in the marketing technology (MarTech) industry since 2001. Eager to apply his expertise to create a new and improved market solution for Consumers and Advertisers in the marketing technology industry, Joe co-founded CYDigital with CTO John. Before co-founding CYDigital, Joe founded OnDialog (was PluraPage), a landing page application integrated with Salesforce, and raised \$7 million up through Series A (at peak, the company's valuation reached \$25 million). Joe has dedicated his career to digital marketing since 1996, when he started one of the first eCommerce sites for Altec Lansing, the leading provider of desktop audio. At Altec Lansing, he helped break open the consumer market for digital audio utilizing then-new USB (in conjunction with Intel), and was named one of the top marketers throughout the technology industry. Joe has held CEO, CMO, and VP Marketing positions since the early 1990s, and has managed teams ranging from a handful to a team of 150.

Morgan Pierce, CMO: <https://www.linkedin.com/in/morgnpierce/>

Leveraging her backgrounds as a serial entrepreneur, global speaker, venture capitalist and growth hacker, Morgan joined CYDigital in order to help bring the company's vision to life and, thereafter, to the lives of Consumers and Advertisers in the digital advertising industry. Morgan started her first technology business in 1988, and has since been involved with more than 30 successful start-ups in cybersecurity, fintech, MarTech, CRM and HR. A graduate of Columbia University with a degree

in Computer Science and Economics, Morgan started her career as an entrepreneur launching two start-ups in three years, both with multi-million dollar exits. She then gained experience in the multinational arena as Director of Marketing for EMEA at Oracle. In 1999, while at Oracle, she designed the first multilingual Internet marketing platform to enter the market. Recruited out of Oracle to launch a technology investment fund for a group of high net-worth investors, Morgan began her role as venture capitalist and led a dozen companies through successful fundraising initiatives during the dotcom boom. She is now also an advisor to other start-ups aiming to leverage blockchain technology in the fintech and MarTech industries. Morgan is an accomplished public speaker and lectures globally about the blockchain technology industry.

Nicholas Lepley, PhD Data Scientist & Advisor:

<https://www.linkedin.com/in/nicholas-lepley-91148915/>

An experienced and credentialed data scientist, Nicholas serves as a key advisor to CYDigital. Nicholas began his career as an academic researcher, where he studied medical diagnostics, thermoelectric power generation, and completed a physics PhD focused on applied quantum mechanical modeling of lithium ion batteries. Upon witnessing the ways in which data was fundamentally changing culture, Nicholas left the field of physics to focus on data science and, thereafter, take part in CYDigital's mission of enabling Consumers to control their online data.