The truth is the truth no matter who speaks it.

Trive™

Truth Discovered ...

Powered by

ethereum

Trive™ Whitepaper

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Abstract

Trive™ solves the problem of fake news for our users for $1 a month.

Trive™ is a social science consensus engine that researches and clarifies facts through Human Swarmed crowd wisdom. We incent people to do primary research into news stories, compensate them with our own coin, Trive Coin, and hash/stash the results on the Block-Chain.

Trive™ creates a Nash Equilibrium incentive structure for the research into news story claims. An antaganistic relationship between researcher and verifier creates a checks/balances process that reinforces research quality.

Trive™ creates a feedback loop to media companies who monetize your attention. By reducing their revenue when they aren't honest, we can send a strong signal that

"The truth is the truth no matter who speaks it".

Our mission is to eradicate fake news worldwide through alternative feedback mechanisms, incentivizing media to tell the truth. We also anticipate many traditional media fact-checking functions can be done faster and more efficiently using Trive™.

Introduction

During the 2016 United States electoral process, #FakeNews entered the popular narrative. The competing disinformation interests consisting of United States, Russian News and other media sources, new social media outlets like Breitbart and Huffington Post, and the abject failure of mass-media polling to predict the outcome of the 2016 United States general election demonstrated that the current news process is broken. Now more than ever, we find ourselves in the perpetual search for truth; in an age of "fake news," lies and deceit.

To that end, we, the authors of this whitepaper, came together to create a platform that determines the "truth" in *most* scenarios. We have designed a process using the "wisdom of crowds" as a tool to quickly analyze news stories and discover truth.

Equally important in the search for truth is the provenance and immutability of the research effort. A well-researched truth is irrelevant if later the sources can be changed to make it a lie. This is where the blockchain's utility shines. By committing not only the final information, but the copies of the primary sources, the research and details of the process to the blockchain, we can guarantee the long-term sanctity of the truth Trive™ discovers...

Wisdom of Crowds

The “wisdom of crowds” is the collective opinion of a group of individuals rather than that of a single expert. A large group's aggregated answers to questions involving quantity estimation, general world knowledge, and spatial reasoning has generally been found to be as good as, and often better than, the answer given by any of the individuals within the group.

Trial by jury can be understood as “wisdom of the crowd,” especially when compared to the alternative, trial by a judge, the single expert. In politics, sometimes sortition (governance by a random sample) is held up as an example of what “wisdom of the crowd” would look like. Decision-making would happen by a diverse group instead of by a homogenous political group or party.

In the case of Trive**, Human Swarming** is the specific method we are using.

Designed as an optimized method for unleashing the “wisdom of crowds”, this approach implements real-time feedback loops around synchronous groups of users, with the goal of achieving more accurate insights from fewer numbers of users. Human Swarming (sometimes referred to as Social Swarming) is modeled after biological processes in birds, fish, and insects; and is enabled among networked users by using mediating software such as the UNU collective intelligence platform. Early testing shows that human swarms can out-predict individuals across a variety of real-world projections.

James Surowiecki[1], the author of “The Wisdom of Crowds” defines that the key to a rational “wise crowd” is:

Diversity of opinion	Each person should have private information even if it's just an eccentric interpretation of the known facts.
Independence	People's opinions aren't determined by the opinions of those around them.
Decentralization	People can specialize and draw on local knowledge.
Aggregation	Some mechanism exists for turning private judgments into a collective decision.

In addition, Oinas-Kukkonen[2] describes the “wisdom of crowds” approach thusly:

1. It is possible to describe how people in a group think as a whole.
2. In some cases, groups are remarkably intelligent and are often smarter collectively than the smartest people in them individually.

[1] https://en.wikipedia.org/wiki/The_Wisdom_of_Crowds
[2] Harri Oinas-Kukkonen, *Knowledge Management: Theoretical Foundations, (Santa Rosa, California: Informing Science Pres), pp. 173-189.*

3. The three conditions for a group to be intelligent are diversity, independence, and decentralization.
4. The best decisions are a product of disagreement and contest.
5. Too much communication can make the group as a whole less intelligent.
6. Information aggregation functionality is needed.
7. The right information needs to be delivered to the right people in the right place, at the right time, and in the right way.
8. There is no need to “chase the expert.”

Additionally, in the online article Digital Maoism[3], Jaron Lanier argues that the collective is more likely to be smart when:

1. It isn't defining its own questions.
2. The goodness of an answer can be evaluated by a simple result (such as a single numeric value), and
3. The information system which informs the collective is filtered by a quality control mechanism that relies on individuals to a high degree.

Lanier argues that only under those circumstances can a collective be smarter than a person. If any of these conditions are broken, the collective becomes unreliable or worse.

Keeping all these guidelines in mind, Trive™ creates a Nash Equilibrium to incentivize people to score the truth. We believe the game has all four "Surowiecki attributes," namely Diversity of Opinion, Independence, Decentralization, and Aggregation.

[3] https://www.edge.org/conversation/jaron_lanier-digital-maoism-the-hazards-of-the-new-online-collectivism

How it works

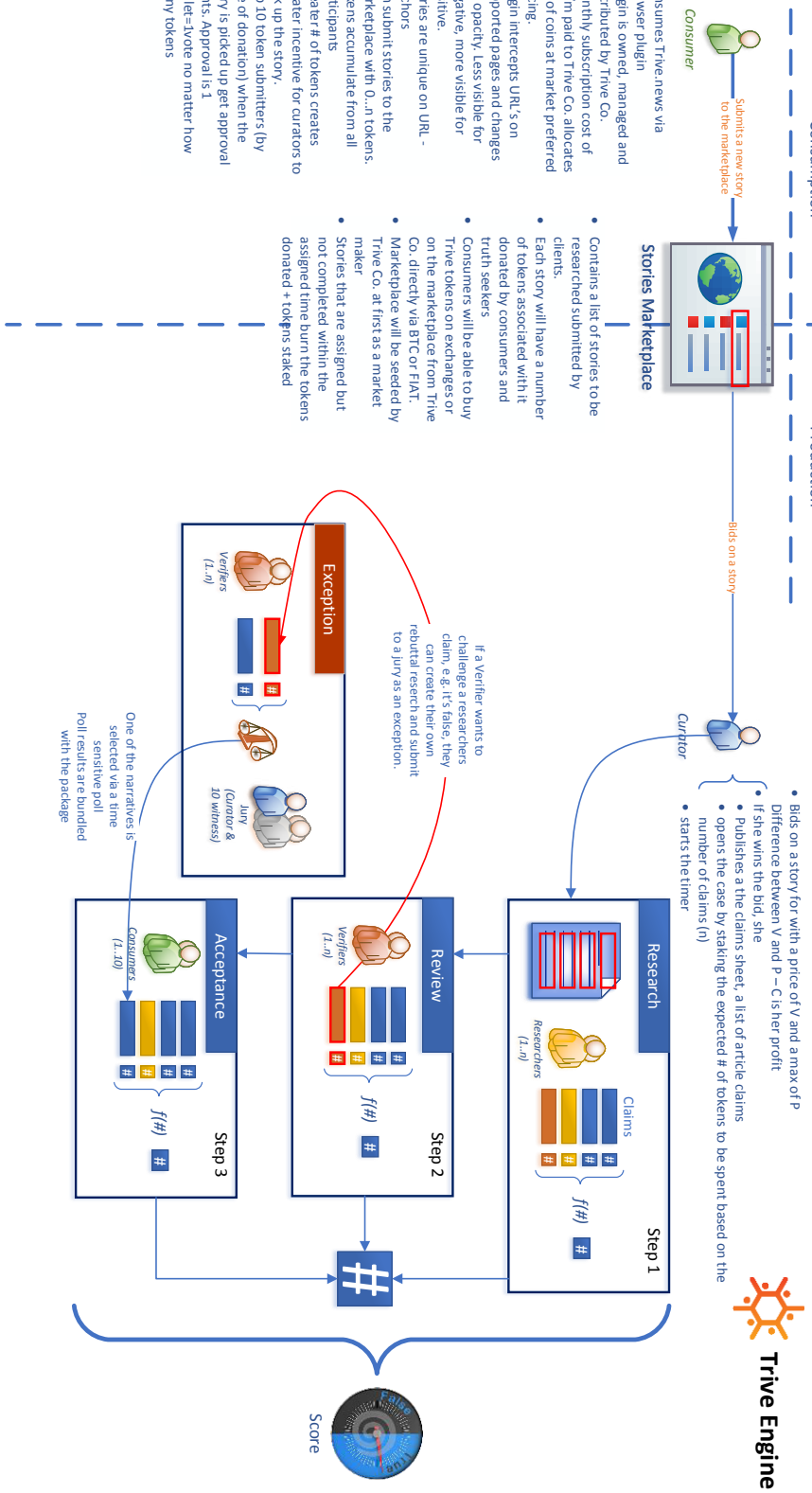
To enforce system behavior and to prevent users from "gaming" the process, we ensure that all participants are *pseudonymous*, that witnesses are assigned randomly, and that no one can participate in the same game in more than one role.

Trive™ has 5 types of "players". Each "player" is pseudonanymous wallet with an attached reputation score, no personally identifying information (pii) is ever collected. Anonymity must be sacrosanct if we are to preserve the santicity of the Trive™ process.

- **Consumers** who consume the news and send stories of interest to the marketplace for Curators to find and research;
- **Curators** who bid on stories and publish lists of article claims with an incentive to maximize profit, reduce research costs and deliver quality;
- **Researchers** who are incentivized to find and document convincing true data quickly and efficiently, lest their time be spent for nothing and their reward taken by someone better;
- **Verifiers** who verify the supporting evidence collected by the Researchers above, and are rewarded if/when the Researcher's err;
- **Witnesses** who review research and participate in the truth scoring process, earning a small fee and enjoying the truth discovery process.

Each of these roles have a set of incentives that maximizes the search for the truth and minimizes gaming.

Trive™ Engine Diagram



Trive™ Game Mechanics

Trive™ seeks to establish a Nash Equilibrium among the game participants such that only by acting within game boundaries are the participants rewarded for their labor. We also intend to create antagonistic relationships between some participants to create a series of "checks and balances" to reduce system gaming.

Each of these roles is pseudonymous Trive™ DAC (Distributed Autonomous Corporation) wallet with a specific reputation score. As reputation events are registered and scores adjust, wallets come into and out of compliance with each role. Each role inherits the rights of the role below it. Roles are listed in order of increased functionality. Curator, Researcher, Verifier, Witness and Consumer.

Trive™ Game Players and their Function

Curator

- Bids on a story for with a price of V and a max of P
  Difference between V and P – C is her profit
- If she wins the bid, she
  - Publishes a the claims sheet, a list of article claims
  - opens the case by staking the expected # of tokens to be spent based on the number of claims (n)
  - starts the timer

Researcher

- Picks up claims to be researched from public claims sheets.
- Is responsible for researching the claim and attaching:
  - A score (-100 … +100)
  - An explanation of the score
  - A URL reference for the explanation
- Is paid for each verified claim researched

Verifier

- Reviews research claims as they're closed
- Either agrees with the researcher or can file an exception
- If exception is settled in their favor grabs researcher bounty for that claim
- Is paid for the verification

Witness

- Review two anonymous claims
- Decide which is true
- Is paid no matter the outcome
- Is randomly selected

Consumer

- Consumes Trive.news via browser plugin
- Plugin is owned, managed and distributed by Trive Co.
- Monthly subscription cost of $1/m paid to Trive Co. allocates a # of coins at market preferred pricing.
- Plugin intercepts URL's on supported pages and changes the opacity. Less visible for negative, more visible for positive.
- Stories are unique on URL - Anchors
- Can submit stories to the marketplace with 0…n tokens.
- Tokens accumulate from all participants
- Greater # of tokens creates greater incentive for curators to pick up the story.
- Top 10 token submitters (by size of donation) when the story is picked up get approval rights. Approval is 1 wallet=1vote no matter how many tokens

Consumer Process

Trive™ begins with the Consumer.

As Consumers use the Trive™ Browser Plugin and interact with the web, they will come upon stories with information they will find dubious. In cases where an actual answer is determinable, i.e. “did more people attend Donald J. Trumps inauguration than Obama's,” the consumer can submit the dubious URL to the Trive™ Story Marketplace for research. He does this by submitting the URL, a stake of Trive™ tokens, and a maximum time to the marketplace via our easy to use browser plugin/wallet. Until the story is opened by the Curator, the consumer may stop staking the story and recover their funds.

On the marketplace side, the Stories are aggregated by unique URL (minus session IDs and anchor tags) and the bounties accumulate. For each story the max times submitted are averaged after the statistical outliers are removed.

Curation Process

As stories are listed, Curators bid their fee for the right to research a URL on the Trive™ Story Marketplace. They take into account their personal expertise and the time allotted and calculate anticipated costs prior to bidding.

If the Curator loses the bid she incurs no penalty. A Curator is able to bid on as many stories at once as she wants, but she is only able to open/lock one story at a time.

If the Curator wins the bid, she has won the right to try to earn the difference between her bid and costs for the allotted period of time. If she has bid well, she will earn a profit; if not, she will lose coin and reputation (a negative reputation event). Her anticipated costs include Researcher, Verifier and Witness bounties and estimated storage fees. The system will over time automate suggestions to make this process easy & intuitive.

The difference between the bid and the stake is distributed back to the consumer's wallet proportionally. This earns the consumer's wallet a positive reputation event (and coins?).

In order to begin the process, the Curator stakes her anticipated costs in Trive™ coin and starts the case timer. She then creates a “Claims Sheet” for Researchers to follow. This is a simple document created by highlighting parts of a story and marking each one as a claim. For each claim, the Curator attaches a research cost, which is the price she is willing to pay for the research of that claim, and an expected research time. The sum of those costs, as well as Verifier and Witness costs, are costs she bears.

A claim is any claim of fact of the story. i.e. “This person was in this place at this time,” or “She said ‘A’ and the crowd reaction was ‘B,’ etc...

The claims sheet that the Curator created becomes the primary score sheet in the search for the “truth” of the story. The claims on the claims sheet should be verifiable facts, not opinions. For example, the time, place, and attendees of an event are facts. However, how

the attendees felt about being there, absent an attendee verifiably saying something, is opinion.

Once ALL the claims are validated, the Curator reviews the final document and closes it. The system then broadcasts a need for close approval. It takes any 3 of 5 participants to approve closing the case. The approvers are any members of the system, including consumers, creating another positive reputation event for them, excluding anyone who has participated in the research.

The timer for this stage of the process is very short, around 1 minute for an average article. The approvers here are NOT reviewing the work for accuracy or completeness. They are simply looking for garbage. Lorem Ipsum and other nonsense texts, spam, porn images and links.

If the approver team rejects the work, the Curator suffers a negative reputation event and is able to then try two more times to get the work approved. If she cannot or if the timer expires, she and the consumers lose their staked coins (these coins are automatically sent to the foundation address to be reused).

Research Process

After creating the claims document, the Curator assembles Researchers by broadcasting a need for research work on the Trive™ network using the Trive™ DAC client. Researchers see the broadcast requests and are able to grab them. Once one Researcher grabs the claim, others are precluded from doing so, and that researcher's clock starts ticking. A Researcher can research only one claim at a time. Researchers will be paid the associated fee upon successful task completion.

The Researchers use their own online tools and expertise to find, aggregate, and storyline their research. For each claim, the Researcher attaches a score, a short write up about the claim justifying that score; and any links, videos, images, PDF files, or other BLOBS (Binary Large Objects).

Once the Researcher is done, he closes the claim. The system then automatically submits the claim for verification by broadcasting a "Verifier Need" message to the network. The contents of the research are kept hidden from everyone, but the selected Verifier until the verification process is complete.

Verification Process

As the research claims are completed, each claim moves to the verification phase. This is where Verifiers (who are separate from Researchers) verify the claims the Researchers made.

Verifiers are selected on a first come/first serve random method, with some exclusions. Specifically: up to 256 verifiers who indicated interest in the first broadcast are randomly selected. However, a verifier can only verify 1 claim per story, and cannot play any other role on that story.

Verifiers are paid 20% of the Researcher's claim. The Researcher, Verifier and Witness costs are cumulative for the Curators, resulting in total cost of 125% of the researcher fee.

A Verifier, however, has the ability to capture the entire research bounty AND the verification bounty if he believes and can prove that the Researcher is wrong.

To do so the Verifier uses the same tools the Researchers do to create their own version of the research for this specific claim. Once they are done they open the Exception process. If they are successful in their challenge, they will earn the Researcher's bounty, their usual verification bounty, and a positive reputation event. If they are not successful in the exception process, they will suffer a negative (or neutral?) reputation event.

Witness

Exception Process

If the Verifier believes that the Researcher made an error and is willing to invest the time necessary to debunk the item, then the Verifier is able to claim an exception to the process.

The Exception Process sends a continuous broadcast message to the network, accumulating 10 random witnesses + the Curator for an online voting process. Once all 11 are assembled, the Researcher and Verifiers work is presented to the pool in a double-blind manner. The witnesses do not know which work is Researcher and which is Verifier work, and the participants do not know who the witnesses are.

Again, a witness can only participate once per story.

Witnesses vote on which research they find more believable, and are paid 5% of the research fee for that claim. This is a positive reputation event.

Reputation Scoring

In order to discourage "Sybil attacks" (multiple forged identities) and maximize positive behavior by game participants, Trive™ will implement a User Reputation score. Trive™ will keep reputation scores of all users, and will require higher reputation scores for the more responsible roles.

Users can score positive or negative reputation events as outlined earlier in the game mechanics. The intention is to create a pyramid of reputation scores based on the 15%, 25%, 25%, 35% ratio of Curator, Researcher, Verifier and Witness.

Specific reputation event scores have not yet been assigned. Assigning and adjusting specific reputation event scores is a post Beta Test process.

Trive™ Ecosystem Structure

Trive, the ecosystem, consists of several components:

Trive™ Inc

Trive™ Inc will serve as an incubator and parent of the Distributed Autonomous Corporation for several years, until the ecosystem, the platform, and the economy are mature enough to stand on their own.

Trive™ Inc will monetize the Trive™ DAC at $1/month for US consumers. In exchange for the monthly payment, Trive™ LLC will supply users with 10 Trive™ coins/customer/month for a limited time to enable them to contribute to the truth discovery process. The amount of coin given away will change over time and based on market conditions. Submitting stories and participating in the ecosystem is how consumers will earn a high enough reputation to become witnesses and assume other more responsible and profitable roles in the system.

Trive™ Inc will seed the marketplace of stories for several years in order to create the demand for Trive™ DAC. After establishing a significant story research capacity, Trive™ LLC will open the marketplace to other research clients. We expect that media clients will want to use our marketplace as a replacement for their in-house research teams, because we expect Trive™ DAC to be both faster, more accurate, and cheaper than current in-house processes.

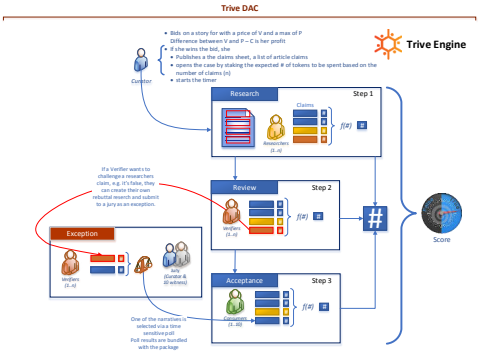
Trive™ Inc will found and fund the non-profit Trive™ foundation to provide for the long-term maintenance and development of Trive™ DAC. The foundation will maintain the foundation wallet, the address of which will be hardcoded in the code. A 0.25% (0.0025) transaction fee on all coin moves will allow for the long-term viability of the foundation.

Trive™ Inc will run a series of IPFS (InterPlanetary File System) nodes to store Trive™ research data. Trive™ DAC will incentivize the creation of more IPFS nodes among the participants in order to increase decentralization.

Trive™ Inc will develop, own the right to, and monetize the Trive™ Browser plugin which will consume Trive™ DAC services as a service to its clients.

Trive™ DAC

The Trive DAC is the beating heart of Trive. It's going to be a Meteor.js application that could be installed either in the browser as a plugin or as a desktop application running from the tray. Both installation on the same device will be supported. Mobile platforms will also be supported via Meteor's native mobile handling process.



The application will consist of several tools to make the players tasks easier:

- Trive Wallet
- Trive Profile Manager
- Document Management System
- Reference Source Management System
- Research Cross Referencing tools
- Trive Bidding Engine
- Witness Voting Platform

For each of these functions we've identified best of breed LAMP/MEAN applications and will customize or rebuild as appropriate. Components will launch individually starting in Q1 2018.

Using the Trive™ DAC, Trive™ ecosystem participants will be able to complete their tasks and earn Trive™ coin in addition to better reputations. The DAC will support all of the activities of all of the participants as well as archive searching, blockchain explorer and other future capabilities.

Trive™ Token

The Trive™ Coin, (TRV) is a an Ethereum erc220 standard token. It ensures that you are able to participate in the Trive™ DAC.

TRV is the token emitted and consumed by the Trive™ DAC. It will consist of the 1 billion TRV tokens issued at the initial sale. TRV is a closed loop, fixed amount token. All tokens to be used in the game will be issued and sold by Trive Inc during and prior to the Token Sale Event.

Trive™ Systems Architecture overview

Our systems development philosophy is simple. We are pragmatic, we re-use components, we extend and fork code whenever possible. We support open source projects and will open source, when appropriate, the bulk of our development effort. We believe in continuous integration, unit testing and the KISS approach

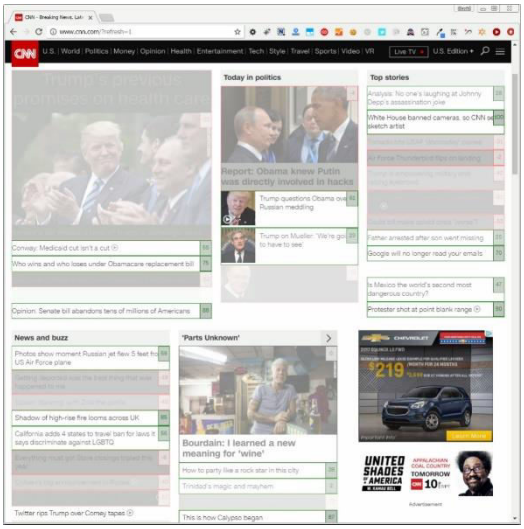
Trive™ Browser plugin

The Trive™ browser plugin is a browser plugin that allows consumers to reduce how much attention they spend on news that is false. It is a fork of the Hypothes.is github repo and will be the primary initial revenue source for Trive™ LLC.

When a participating user visits a website we support (like CNN.com), the browser plugin checks whether each URL is cataloged in the Trive™ system. If it is, the plugin will retrieve the score and color the URL and its surrounding text according to user preferences. Consumers will be able to choose from 3 versions:

1) The URL and the text remain uncolored, but a color score appears next to the url. If the score is <0 the score is displayed in red. If the score is >0 the score is displayed in green, and if the score is 0 it's displayed as 0 in black. (For reference purposes, stories are scored between -100 to +100. -100 means the story is a complete lie, +100 a complete truth and 0 for "we don't know or it's an opinion".)

2) We change the opacity of the story based on how true/false it is. Stories become harder to see as they are deemed less true by the Trive™ community. This conserves Trive™ users' attention, and allowing users to focus on things that are more likely to be true. At the same time, this creates a needed feedback mechanism for internet media companies of all types & sizes. By making the headline hard to see, users are less likely to click and, therefore, less likely to bring click revenue. If Consumers really want to see the story anyway, it is still clickable and a simple hover over the link restores the opacity to normal.



3) False stories simply do not appear in your feed. The Trive™ user can choose a score below which the links disappear. The plugin changes the CSS (Cascading Style Sheet) of the news page by making the CSS selector "visible=false". This removes the URL from the user's view, while keeping it within the page.

Trive™ DAC (Distributed Autonomous Corporation)

The Trive DAC is a Meteor.js application that can be installed either in the browser as a plugin or as a desktop application running from the tray. Both installation on the same device will be supported. Mobile platforms will also be supported via Meteor's native mobile handling process.

The application will consist of several tools to make the players tasks easier:

- Trive Wallet
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- Witness Voting Platform

The bulk of this effort will come post the Token Sale.

Trive™ Story Marketplace

Trive™ LLC will operate the Trive™ Story Marketplace. The Trive™ Story Marketplace is a centralized repository of news stories and URL's waiting for research. Curators use the marketplace as a medium to bid on stories that they want to do research on. Consumers submit stories they are interested in to the marketplace by staking Trive™ tokens to their research requests.

Trive™ LLC will seed the marketplace with stories to research from its own Trive™ coin funds based on its own editorial discretion. Once the Trive™ ecosystem has grown to the point of self-sustainability and scalable capacity, Trive™ LLC will open the market place to other media companies for their use. Trive™ will charge for that access and will provide onboarding services, token sales and systems process education.

Consumers will be able to submit news stories and claims for verification by using the easy to install Trive™ browser plugin. By attaching/stacking Trive™ tokens to the story, they make it more likely that a Curator would be interested in vetting that story. Since the stories are URL unique, if multiple consumers stake coins for the same story, the bounty could rise significantly.

The Curator bids on jobs they think they can fulfill profitably in the required time. Then, they will bid (V), the maximum they think will win them the job, in open competition with others keeping in mind their costs for the labor involved. The Curator can only have 1 job open at a time (in the beginning), and so must bear in mind all opportunity costs.

If they win the job, they have exclusive rights to the payment for the successful on time completion of the job. If they are unable to complete the job on time, the job expires and is rebid or given to the next lowest bidder as the customer requires.

Trive™ Storage Module

The Trive storage module is the abstraction layer between the Trive DAC and file/data storage. By abstracting this functionality into it's separate layer we can optimize storage efficiency.

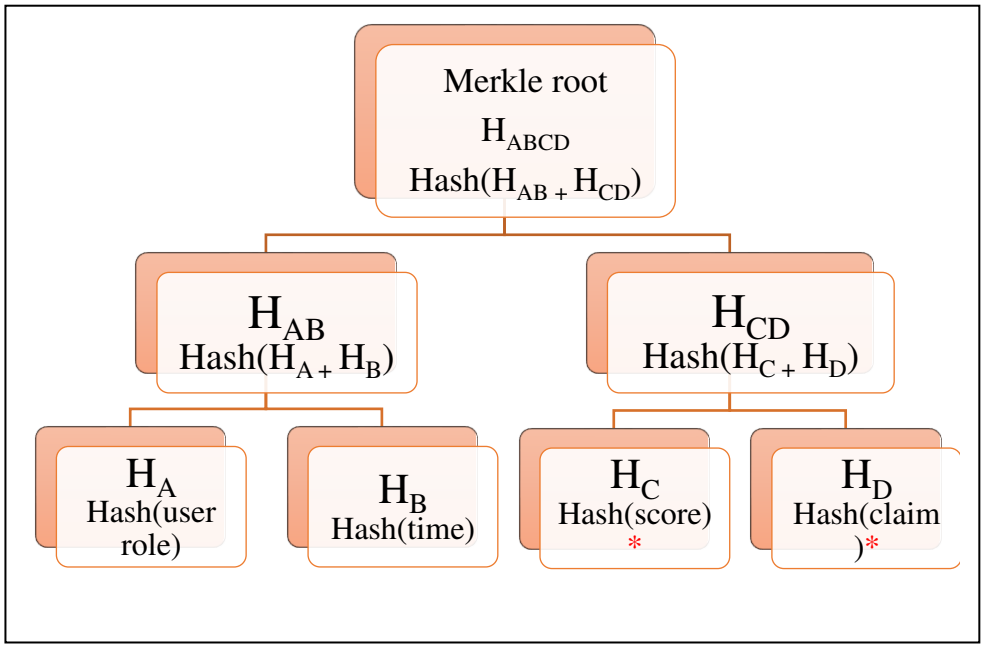
The Storage Module will initially store all of Trive non-BLOB data on the Ethereum blockchain with a pointer to the file storage location using IPFS notation hashed into the data block. Over time we expect the storage module to evolve to include alternative block chains like Expanse and ETC and other storage network such as (storj, sia, etc…). In order to maintain a large enough pool of available IPFS nodes Trive™ DAC will incentivize the running of IPFS (InterPlanetary File System) nodes.

The Trive™ Storage method functions as a meta-protocol switching layer on top of whatever storage medium is available. (storj, sia, Trive™ ipfs, aws, etc…). It consistently optimizes KPI's (Key Performance Indicators) based on the design of the storage contract (speed, redundancy, sensitivity, etc.,) and uses the appropriate storage platform to reduce costs of storage. It also pays Trive™ coin to compensate Trive™ IPFS storage holders for their efforts. The token supply for this module will come from a dedicated Trive pool of tokens. This pool will be initially seeded by the corporation/foundation and will be refreshed periodically.

Hash

Hashing of the data is one of the most important aspects of the Trive™ Engine. Individual components of an article, including the primary data, the research story, and the scoring, are each individually hashed and included in the commit block of data for each article. Those hashes create a Merkle tree (a hash based data tree structure) of research documents inside the block, ensuring the sanctity of the block data structure.

The hash of the entire block as well as reference data is then stored on the Trive™ blockchain. The media files, links, pdfs, and other BLOBS are stashed using the mechanism below.



Stash

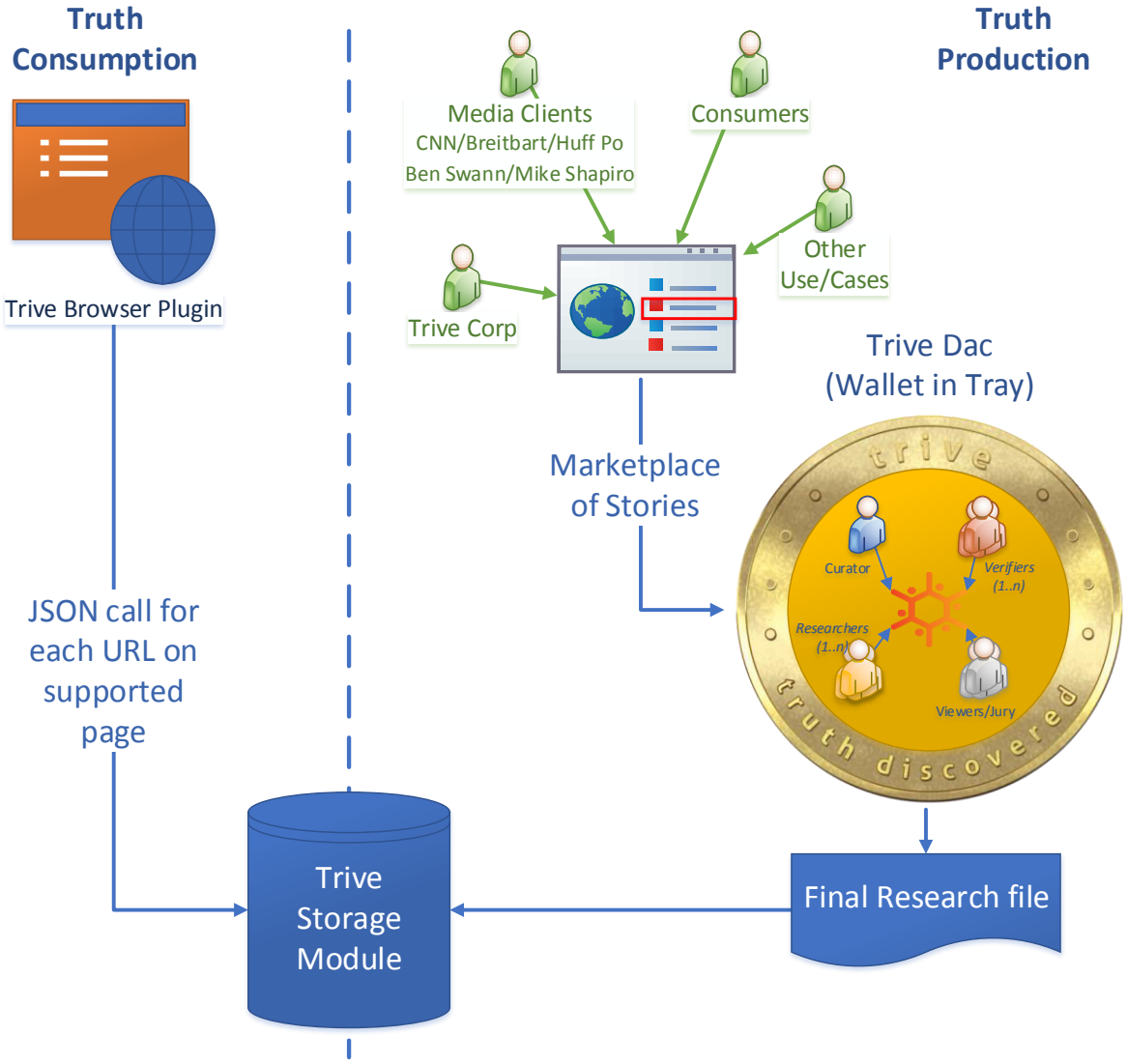
Since it is inefficient to store binary large objects (BLOBS) in a blockchain, we have decided to separate the physical storage of media documents, PDFs, and other BLOBS and their hash.

The underlying storage mechanisms for documents must be distributed, accessible, fault tolerant, self-error correcting and must provide incentives for node maintenance. In addition, obfuscation of storage location, data striping and data node scrambling are also important functionality. Storj, SIA and IPFS (with an incentive structure) are all acceptable substitutes for storage.

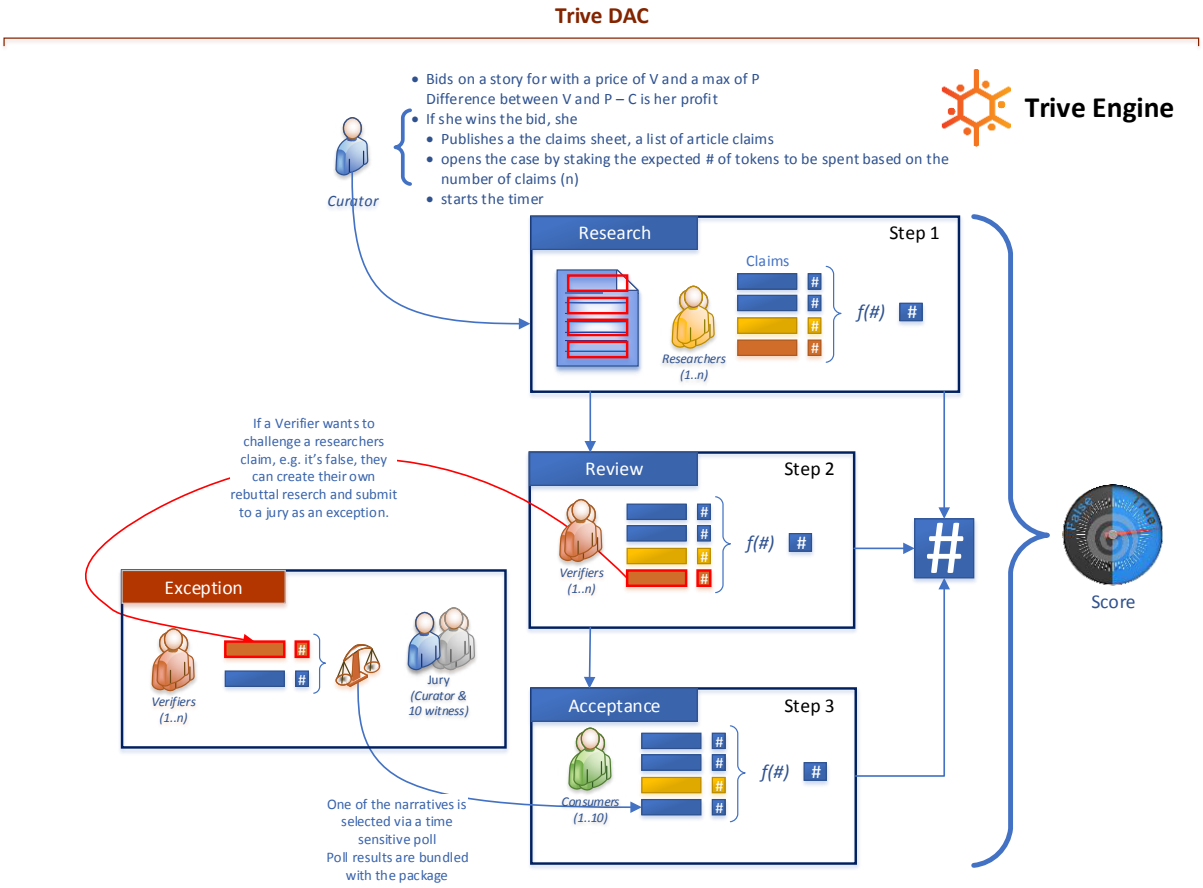
Trive™ LLC and Trive™ Foundation will run an incentivized IPFS network alongside, StorJ, SIA, S3 and the public IPFS Global network to maintain document state and reduce operating costs.

Trive™ Diagrams

Trive™ Engine DAC High Level diagram



Trive™ DAC Engine Detailed



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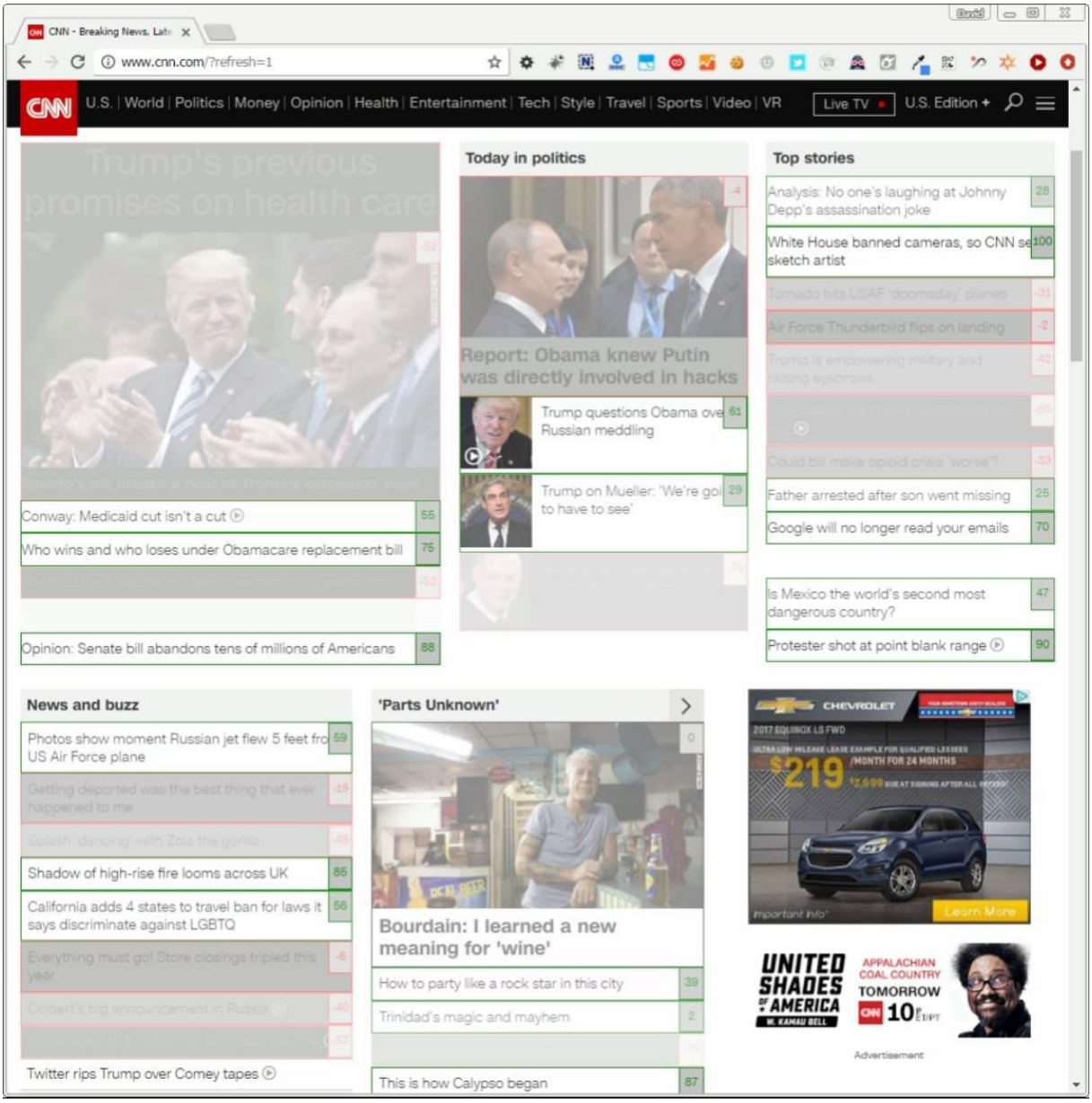
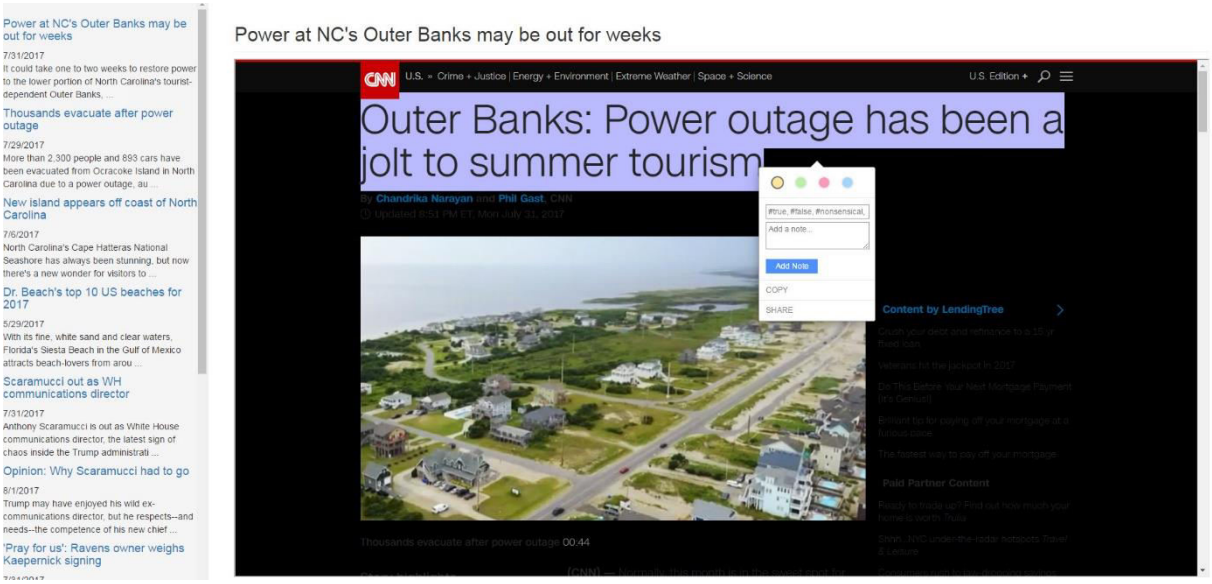
Trive™ Browser Plugin Sample Screenshot

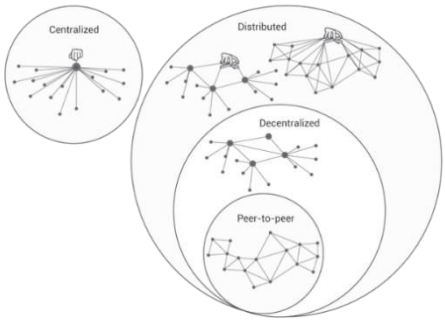


Trive™ Curator Selection Process Screenshot

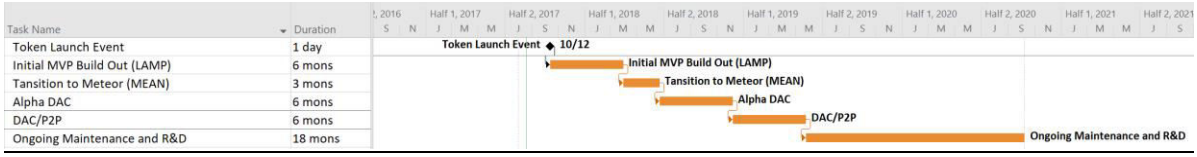


Trive™ Coin Design

Timeline & Roadmap



We understand and agree that the system we are documenting now is not distributed and that in the future only distributed systems will survive. We have, therefore, created a strategy to move this project in logical, pragmatic steps from Centralized, to Distributed, Decentralized and finally p2p.



very preliminary schedule all dates and activities subject to change.

The intent of each Task group is as follows

1. Initial MVP Build Out **(Centralized)**
    a. Create the MVP for the Trive Engine and Marketplace components using open source tools functioning on the Trive.news Website.
    b. Create Ethereum contracts for storage
    c. Test market and process flows
2. Transition to Meteor **(Distributed)**
    a. Improve on the MVP based on Customer feedback
    b. Create Ethereum contracts for payments
3. Alpha DAC **(Decentralized)**
    a. Full build of Trive on Meteor
    b. Build out of Storage Engine and IPFS node system
    c. Transition to Trive coin for compensation
4. DAC/P2P **(Fully P2P)**
    a. A DAC is born
    b. Launch of a full P2P client
    c. Trive Corporation is yet another client
5. Ongoing Maintenance and R&D **(Future Functionality)**
    a. Anonymity, GeoTracking Evasion and other Open Source Journalism tools.
    b. Monero and other Crypto integration

Our Tools

Meteor.js

Meteor, or **MeteorJS**, is a free and open-source isomorphic JavaScript web framework[3] written using Node.js. Meteor allows for rapid prototyping and produces cross-platform (Android, iOS, Web) code. It integrates with MongoDB and uses the Distributed Data Protocol and a publish–subscribe pattern to automatically propagate data changes to clients without requiring the developer to write any synchronization code. On the client, Meteor can be used with its own Blaze templating engine, as well as with the Angular framework or React library.

Primary reasons to select Meteor as our development environment:

Isomorphism

Meteor apps are isomorphic. The same code base used to create the front end is also the code for the back end. This makes the code faster and provides better SEO. Using the same language, Javascript, on both the front end and the back end reduces maintenance costs and technical debt accrual.

Native Reactivity

Meteor apps are reactive by default. This means that all elements on the client application are automatically updated, across the application interface, and *across all simultaneous users*. This out-of-the-box capability of real-time updates has now become a standard norm across all modern collaborative applications. Reactive rendering also cuts down your front-end code, and significantly reduces your total development time. The front-end reactivity offered by Meteor is among the best-in-class, and far ahead of most other web technologies.

Mobile App Development

Meteor integrates with Cordova. With the Cordova integration in Meteor, you can take your existing app and run it on an iOS or Android device with a few simple commands. A Cordova app is a web app written using HTML, CSS, and JavaScript as usual, but it runs in a web view embedded in a native app instead of in a stand-alone mobile browser. An important benefit of packaging up your web app as a Cordova app is that all your assets are bundled with the app. This ensures your app will load faster than a web app. Another feature of the Cordova integration in Meteor is support for hot code push, which allows you to update your app on users' devices without going through the usual app store review process. Cordova also allows you to use features such as accessing the device camera or the local file system, interact with barcode or NFC readers, etc.

Hypothes.is

http://hypothes.is

The Hypothesis Open Source Project is a new effort to implement an old idea: A conversation layer over the entire web that works everywhere, without needing implementation by any underlying site.

Using annotation, Hypotehs.is enable sentence-level note taking or critique on top of news, blogs, scientific articles, books, terms of service, ballot initiatives, legislation and more. Everything we build is guided by our principles. In particular that it be free, open, non-profit, neutral and lasting to name a few.

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IPFS

InterPlanetary File System (IPFS) is a protocol designed to create a permanent and decentralized method of storing and sharing files. It is a content-addressable, peer-to-peer hypermedia distribution protocol. Nodes in the IPFS network form a distributed file system. IPFS is an open source project developed since 2014 by Protocol Labs with help from the open source community. It was initially designed by Juan Benet.

IPFS provides a high-throughput, content-addressed block storage model, with content-addressed hyperlinks. This forms a generalized Merkle directed acyclic graph (DAG). IPFS combines a distributed hash table, an incentivized block exchange, and a self-certifying namespace. IPFS has no single point of failure, and nodes do not need

Nodes on the Trive Network running IPFS will be compensated for the storage they dedicate to the platform. Our IPFS Network will serve alongside Ethereum, S3, MaidSafe, StorJ and the public IPFS Global network to maintain document state and reduce operating costs.

Ethereum

Ethereum is a decentralized platform that runs smart contracts: applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third party interference.

It is an open-source, public, blockchain-based distributed computing platform featuring smart contract (scripting) functionality.[2] It provides a decentralized Turing-complete virtual machine, the Ethereum Virtual Machine (EVM), which can execute scripts using an international network of public nodes. Ethereum also provides a cryptocurrency token called "ether", which can be transferred between accounts and used to compensate participant nodes for computations performed. "Gas", an internal transaction pricing mechanism, is used to mitigate spam and allocate resources on the network.[2][3]

Ethereum apps run on a custom built blockchain, an enormously powerful shared global infrastructure that can move value around and represent the ownership of property. This enables developers to create markets, store registries of debts or promises, move funds in accordance with instructions given long in the past (like a will or a futures contract) and *many other things that have not been invented yet*, all without a middle man or counterparty risk.

The project was bootstrapped via an ether pre-sale during August 2014 by fans all around the world. It is developed by the Ethereum Foundation, a Swiss nonprofit, with contributions from great minds across the globe.