dscvr.it

a fair distribution platform for creators and consumers

White paper dscvr.it
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1.The Problem

A decentralised web was how the web was originally envisioned, but somehow in the past 25 years, it ended up in the hands of a few very powerful companies. As Sir Tim Berners-Lee said during the Decentralised Web Summit in 2016[1]

"The web was designed to be decentralised so that everybody could participate by having their own domain and having their own webserver and this hasn't worked out. Instead, we've got the situation where individual personal data has been locked up in these silos."

1.1 Revenue is not distributed fairly

There is a serious problem with content creation and distribution on the web. Often, content creators are not rewarded fairly, let alone instantly for their work. Copyright infringement is a daily practice, costing societies billions of dollars. Apart from this, there is a strong trend towards clickbait and fake news, because this 'content' brings in the most advertising revenue for platforms such as Facebook. Content, meaning not only articles but also video, podcasts, AR/VR or even software, is vital for societies, especially in a world where Artificial Intelligence will take over many jobs. In an automated society, humans should, therefore, focus on what they do best: being creative and creating great content.

Over the years, the objective of a distributed network of nodes where everyone would be able to participate for the betterment of humanity has been lost with many centralised companies - such as Facebook, Google, LinkedIn and WeChat – offering centralised services while removing fundamental freedoms such as consumer data ownership rights, privacy and security[2]. Too often, consumers become the victim of malpractices of large organisations, not taking care of the customers' data, leaving their customers vulnerable. In addition, non-democratic governments use this centralised web to censor freedom of speech on a daily basis. On a regular basis, countries block important websites such as Wikipedia[3] because there is an article they do not like.

1.2 Poor content quality control

There are multiple problems with low quality content. From an organisation's or user's perspective they damage your brand and result in low search rankings. More importantly,

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[1] https://archive.org/details/DWebSummit2016_Keynote_Tim_Berners_Lee

[2] For a detailed discussion on this topic, please read *Move Fast and Break Things* by Jonathan Taplin

[3] https://www.theguardian.com/world/2017/apr/29/turkey-blocks-wikipedia-under-law-designed-to-protect-national-security

although many people thrive by low quality content as entertainment, it often is created for one purpose: making money for the platform through advertising. Low quality content does not bring anything, apart from wasting your time.

In addition, there is a big problem with fake news, clickbait and spam. Unfortunately, platforms such as Facebook do not have an incentive to stop low-quality content and fake news, simply because it drives advertising revenue. This is worrying, especially since their reach goes well beyond the original practices of the platform, as became clear how fake news on Facebook potentially influenced the US 2016 elections. Spam, on the other hand, can be very costly for society. In 2017, clickbait, fake news and spam should no longer be an issue.

Next to that, we believe that high-quality content can contribute to creating a better world. Peer reviewed, scientific, articles that would be freely available will have a major impact on the progress of the world. Currently, most of the academic articles are behind expensive paywalls, preventing anyone who is not affiliated with a university to miss out on this knowledge. In addition, scholars and reviewers spend months or even years on creating those articles and the scientific knowledge, but once the article is published they get nothing in return for it. In fact, academic articles that are created with public funds are monetised by private centralised organisations that did not pay for that research.

1.3 Global Copyright Infringements

Finally, business happens across the globe in many areas, and a significant amount of collaboration does occur. However, the problem is that most people who are not collaborating do not know what best practice looks like. In the global village that we have created on planet earth, it is remarkably difficult to do business across the globe if you are unfamiliar with these best practices. Local jurisdictions, regulations and compliance rules make it hard for people, small organisations or even things to collaborate across time and space. Starting a company with individuals geographically dispersed and incorporating it without the need to travel is nearly impossible, which we believe significantly limits global innovation.

The convergence of a centralised web, data ownership and privacy problems, limited collaboration possibilities for individuals and content-related problems require a new solution, a new web.

2.The Solution

dscvr.it is a decentralised semi-autonomous platform that enables individuals, organisations and things to collaborate across time and space in a secure, private, transparent and rewarding way. At first, we will focus on content such as (academic) articles, videos, podcasts, VR, patents or software, but at a later phase, actors can collaborate effortlessly around any type of trade.

The objective is to make it easy for individuals, organisations and things to collaborate across the globe and earn a fair revenue instantly, removing any bureaucratic inefficiencies. To this extent, individuals, organisations and things can start a virtual company (V-company) that enables them to hire staff, attract investors and create high-quality content. This content is made available on the platform and revenue made (whether advertising-based or pay-as-you-go based) is shared fairly among all parties involved in creating that content. Users who share content on their own websites, also earn a share of the revenue made through that platform, since they help distribute that content.

A reputation index is key to the platform, whereby every content creator, investor, user or V-company has a reputation score based on the quality of their content and the interactions on the platform. The higher the reputation score and the quality of the content, the more revenue can be made. The opposite is also true. Creators that obtain a negative reputation score, due to spam, clickbait, fake news or inflammatory comments, will need to pay to create and publish content on the platform. In the worst case scenario, the creator loses the rights to create content all together.

In order to achieve this, dscvr.it will launch a crypto token, which will count as a value exchange on the platform. The token can be used to purchase content on the platform, hire content creators to create content or invest in V-companies and tokens are minted when content is created.

Content is stored decentralised and users remain in full control over their content and data. Any metadata related to content, copyright information, reputation scores or shareholder information is stored on a permissioned public blockchain, making this information immutable, verifiable and traceable. The platform uses a Proof of Reputation as a consensus mechanism to validate transactions on the platform.

2.1 Fair revenue distribution

On dscvr.it content creators are rewarded for creating high-quality content. The higher the reputation of the creator and the better the quality of the content, the more money they can earn. Content creators can collaborate in creating content and smart contracts can measure everyone's involvement. In addition, the distributors can earn money as well, since they help extend the reach of the content. Once a piece of content is sold, or revenue is made through advertising, everyone involved in making that revenue will immediately get paid using the CR8 token. As such, content creators are rewarded fairly and instantly on dscvr.it.

2.2 Quality content rewarded

Reputation mechanisms govern everything that happens on the platform and everyone involved in creating, distributing, reviewing and consuming content. dscvr.it will implement a Proof of Reputation consensus mechanism to enable this. Algorithms and the community will monitor the quality of the created content and reinforce each other. The creator's reputation score determines the reach of the content and how much money they can make. Content creators mint tokens when the create content. The higher their reputation score, the more tokens are minted. In addition, the higher the quality of the content, the higher the revenue percentage that can be earned (up to 95%). As such, content creators have an incentive to create content regularly and to create high-quality content. The opposite is also true; low-quality content such as clickbait, fake news and spam will be punished with a lower reputation score. Once a creator reaches a negative reputation score, the creator needs to pay to submit content on dscvr.it.

2.3 Smart copyrights control & distribution

Metadata, reputation scores and ownership information of content created on dscvr.it will automatically be recorded on the blockchain, making it immutable, verifiable and traceable. Creators can sell or license their content easily using smart contracts and they are in full control of their data and content. Content is stored decentralised, but the content creator remains in full control who can access to content and who can share the content. Once content is removed by the content creator, it will truly disappear from the web.

2.4 The main actors

There are various actors on the platform that interact with each other:

2.4.1 Content creators
Content creators are individuals, organisations or potentially things that want to create and share high-quality content. They are at the forefront of disruptive innovations and enjoy trying new platforms. They create content ranging from (academic) articles, news, images, podcasts to video, AR/VR or even software. They value copyright and trademarks and would like to remain in full control over their data and content, anywhere on the web. They would like to receive a fair and instant reward for their hard work.

2.4.2 Consumers
Consumers are individuals who want to consume content, regardless of the type of content. Above all, they value high-quality content and they are willing to pay for this content if it offers them something extra and they do not have to be bothered by advertising. Some consumers rather have free content and do not mind advertising that is linked to the content, as long as it is not linked to their profile[4]. They are open to the world and they respect copyright and trademarks. In addition, they want to remain in full control over their data and they value their privacy and security when being online.

2.4.3 V-Companies
Actors (individuals, organisations or things) that would like to collaborate with each other and create content together, or alone, need to setup a V-company, or a Virtual Company. A V-company operates like a normal company; it can have employees (other creators on the platform), it can develop products, have investors, make a profit and payout dividends. The V-company is used to stimulate innovation and to enable actors to collaborate efficiently across time and space.

In order to set up a V-company, creators need to be verified using a KYC process (Know Your Customer), which uses artificial intelligence to speed up the process. Once an actor is verified, setting up future V-companies will be done faster. A creator can have unlimited amounts of V-companies, whereby the original account acts like a 'holding account'. As soon as a V-company has been incorporated on the platform, it will receive a virtual bank account, i.e. a wallet linked to the V-company. This wallet will be used to make payments to different stakeholders and to receive revenue from the content created.

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[4] http://www.businessinsider.com/young-shoppers-are-not-happy-with-targeted-ads-2016-5/

Every step during the process of setting up the company will be guided by smart contracts and artificial intelligence. The actors determine the percentage each actor has in the company. They can opt for having smart contracts monitor the content creation process, which could result in automatic changes in shareholder percentage along the way. Any changes made to the shareholder agreements are automatically approved using the smart contracts and actors do not have to go through a notary service. Of course, for some type of content, this is difficult to monitor, which is why actors can, at any time, adjust the percentages manually and once all shareholders have verified and approved the change, it is reflected in the contract.

Any costs such as the costs to use the dscvr.it platform or the costs related to distributors, are paid out automatically. As a result, the V-companies will have their accountancy done automatically and in real-time, so that at any time the shareholders can have a full understanding of the financial status of the V-company.

V-companies can also attract investors. These investors purchase a share in the V-company and pay for this share using the CR8 token. The owners of the V-company and the investors determine the price for the shares and payment will be governed by smart contracts. Smart contracts also govern the payout of the dividends on monthly or annual basis (to be determined by the shareholders). The valuation of the V-company is based on revenue generated as well as the reputation score of the V-company (which in turn is based on the reputation score of the different creators).

Investors can trade their shares on the dscvr.it Stock Exchange (DSE). They can offer their shares for sale and interested parties can purchase these shares based on the market valuation of the V-company. Of course, whether investors can sell their shares on the DSE is to be determined by the stakeholders of the V-company and is governed by smart contracts.

V-companies do not pay taxes on the platform. There is no tax involved around hiring people and there is no corporate tax. The profits of the V-company are paid out, if requested, to the shareholders of the company, which can be an individual or a company, and the shareholders are then responsible for paying the respective taxes to the government where they have their real company incorporated/where they live.

2.4.4 Investors
Investors make it possible for content creators to produce high-quality content. Investors want to invest in the virtual companies present on the dscvr.it platform and they value the thorough KYC process each content creator has to go through, as this makes their work a lot easier. In addition, the built-in reputation index for individuals and V-Companies on the

platform enables investors to quickly determine the value and potential of a certain V-Company. Nevertheless, investors want a fair return on their investment and they want to be able to trade their shares if need be. Investors in V-companies respect copyright and trademarks, value their privacy and security and want to challenge the status-quo.

2.4.5 Regulators

dscvr.it will develop a cryptocurrency and as such will have to deal with regulators such as the SEC or local regulators across the globe. The token will be subject to banking rules for AML. In addition, dscvr.it will use smart contracts to execute transactions, for which it is important that they are legally correct.

2.5 Key platform functionality

The platform will consist of many different functionalities that will all contribute to develop a decentralised platform that instantly rewards users for their content, while preserving data ownership, privacy and security. Smart contracts will govern the platform and based on a variety of templates offer users an identical experience across different channels (desktop, phone, application, etc.).
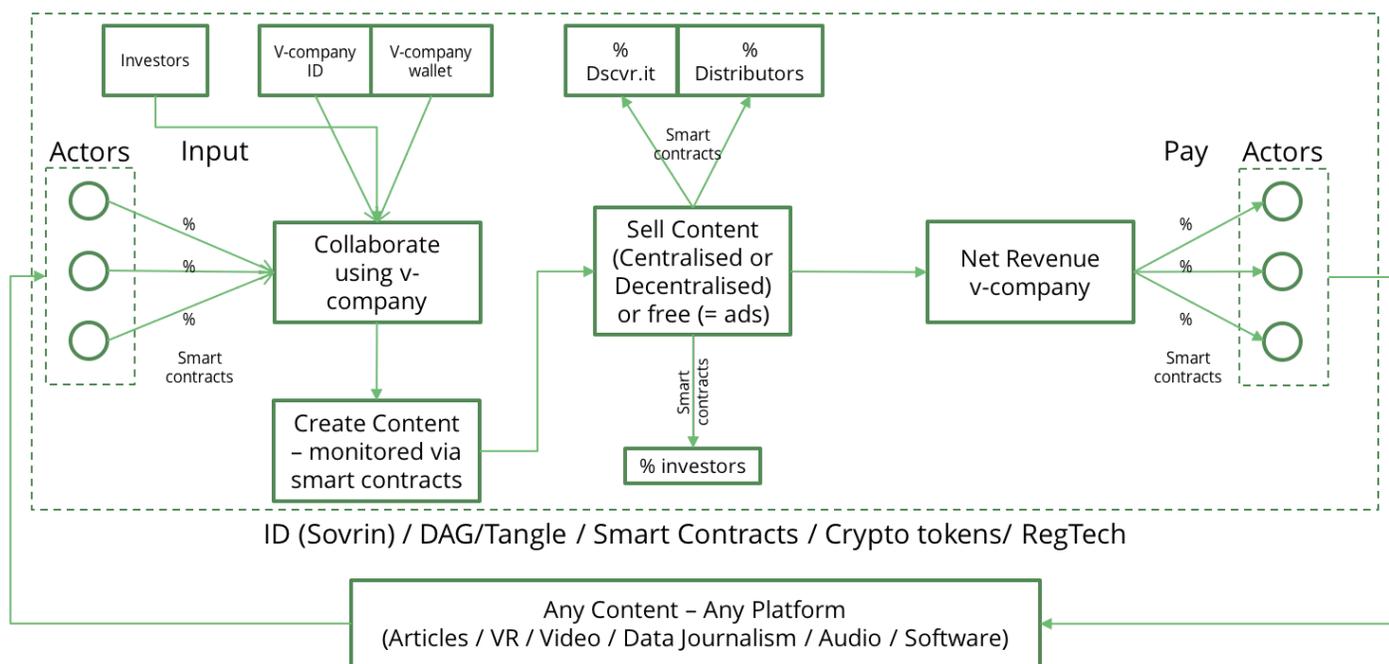

Figure 1: Platform functionality

In short, the platform will work as follows:

1. Actors, which can be creators, organisations or even things, find each other pro-actively on the platform and decide to collaborate.
2. Actors are verified using a KYC process. Once verified, an actor can setup multiple V-companies.
3. They decide upfront the percentage every one gets in the to-be-established V-company. They create a smart contract that governs this. Once the V-company is established, a wallet will be opened which acts as the V-company's bank account.
4. They start building their content, or if they have already built the content, they upload it to the platform, which is checked for copyright issues. If they build the content, they can opt for having smart contracts monitor who does what. Once finished, this could result in changes in ownership percentages, which are automatically processed with the V-company.
5. The actors decide whether to host the content centralised or decentralised.
6. The actors decide whether the content is available for free or paid for. If paid for, a price is determined. Artificial Intelligence will help to set the best price. If free, advertising will be shown with the content.
7. The actors start promoting the content on and off the platform. Distributors use an embed system to distribute the content. Smart contracts govern that the actors always retain control of who can share. Distributors receive a standard percentage of revenue received via that distribution channel.
8. Any revenue generated (by sales or via Ads), is automatically distributed among the V-company, dscvr.it, those that shared the content and any investors. Reports are available in real-time.
9. Net revenues are stored in the wallet and only if there are no financial liabilities left, the owners can withdraw their CR8 tokens to exchanges where they can convert them to other cryptocurrencies or fiat money. Liabilities include payments to third party websites. dscvr.it will only collaborate with third party websites that require payments on a monthly basis, to prevent users having to wait for their revenues longer than a month.
10. Once the actors withdraw their CR8 tokens, it is their responsibility to pay tax for those returns in their respective countries.

At first, collaboration on the platform revolves around content. However, later actors can collaborate around any trade, where the smart contracts monitor whatever is being traded. The actors use pre-developed smart contracts and complete them with different parameters, dependencies and variables and will automatically execute if those variables have been met.

3.The Design

dscvr.it is a meta platform that will revolutionise how content is created, distributed and valued. Any type of content can be created on the platform and consequently distributed using our embed technology on existing content platforms such a YouTube, Facebook, Twitter or WeChat. The following section includes a greater detail on platform functionality, actors, and technology. At first, dscvr.it will focus on content, but in the future and individuals, organisations and things can collaborate around any trade.

3.1 Content Creation

The platform will be content-focused and any type of content will be available on the platform. Creators have an incentive to create high-quality, relevant content resulting in a strong community. Creators who review other people's content will be rewarded with a share of the revenue, but only if the review is relevant. To determine this, we will look at the profile of the reviewer, the connections of the reviewer as well as the review itself using AI and ML, i.e. through an automated review of the reviewers. Useless comments or insults will be ignored and will negatively affect the reputation score of the user, directly impacting any revenue they can make on the platform. The reputation score will directly impact the revenue that can be generated (if opted for advertising-based revenue model) as well as the tokens received when putting content online. In case a user has a negative reputation score, the creator needs to pay for actually submitting content on the platform. This will reduce the amount of SPAM and Fake News on the platform, since it will become expensive to submit such content to the platform.

3.2 Content Distribution

Once content is hosted on dscvr.it, visitors can share content using a unique embed code system (similar to embedding a YouTube video). If content is free of charge, the embed code will contain an advertisement. If it is paid for, it will include a payment option to view the content. Content creators can view which websites have embedded their content when and with one click can remove content from any website.

When embedding, users can select the language they want the content to be shown in. If translated by the community or by machines, multiple languages will be available. If machine translation is chosen, but later the community translates the content, it will be automatically changed on all websites that embedded the content. The dscvr.it website will prevent the direct copying of text from the website to help protect freebooting of

text-based content (although, of course, it is always possible to either copy the text manually or dive into the source code of the website to copy the text. Therefore, we focus on incentives to do the right thing). Those who share content will also share in the revenue earned with that content. This will incentivise them to use the embed system and because it is fair since they help in distributing the content. However, the content creator remains in full control and can view in real-time those websites that have embedded their content. If the content creator does not want to be associated with some website, it can remove the content with one click, thanks to the embed system.

Other websites can republish content via the embed system and receive a percentage of the earnings. Other websites can also include the DN8 Button and will receive a percentage of the money earned with the DN8 Button. This DN8 button is similar to a "Like" button and functions as a tipping system. Users can "DN8" to a piece of content, effectively rewarding the content creator with a micropayment. This will enable the content to appear in the user's personal feed on dscvr.it. Websites who include the DN8 button will receive a percentage of that micropayment as an incentive to include the DN8 button and participate in distributing dscvr.it content in a fair way.

3.3 Content Payment

Content on dscvr.it is either available for free and supported by advertising or is behind a pay-wall and requires a micro payment to consume. Whether the content is free or paid for is up to the content creator. To consume content that is not available for free, users pay for content the moment they start to consume the content. However, depending on the type of content, there is a "trial period", which means that if the user leaves the content, the payment is returned. For written content this period will be shorter than for software applications. All of this happens automatically and in the background. Tokens that are still in the "trial period" are placed in an escrow and only paid to the creator once this "trial period" is over.

dscvr.it will take a small percentage of the revenue made by content creators. This revenue can either be from the advertising shown next to content or, if the content is paid for, a percentage of the price of the content. The percentages that dscvr.it takes decrease as the quality of content increases. At a minimum, dscvr.it will take 5% of the revenue generated by content creators.

3.4 Reputation Index

The reputation score is the main metric on the platform. The reputation score of a user determines the amount of revenue that can be generated using content, the number of

tokens that can be minted when creating content, the visibility of the content on the platform and the impact of the content across the platform. The reputation score is built up based on the profile of the user and the content he or she created and is determined by the community as well as artificial intelligence. The initial reputation is 0, although the more proof of your expertise (such as connections to existing social networks) the higher your starting reputation score will be. You cannot create a new identity, as each user can only have one, verified, identity. Deleting your profile and starting again will not give you a new reputation starting point, you will start with the reputation score when you deleted your profile.

First of all, the more data a content creator shares, the more reputable the creator/user becomes, since it will enable dscvr.it to better determine the profile of that user. As such, the user is encouraged to link multiple social media accounts. Of course, the user remains in full control of any data and can remove any connection at any given moment.

This profile is then used to determine the quality of the created content. A creator that is an expert in a certain area and writes an article on that certain subject is more reputable than if the creator would write on a different, non-related, subject. In addition, there are over 20 variables that AI will use to determine the quality of the content, ranging from grammar and spelling to incorporated citations.

Thirdly, the reputation score is influenced by the community and how they perceive the content. Feedback given (in terms of a star rating system or in terms of comments) is incorporated as well as the profile of that user. This information is fed back into the algorithm to improve its workings.

Finally, the reputation score is influenced by network of the creators, the shadow reputation. The more interactions among the users in a network and the higher the reputation score of users in that network, the stronger the impact on the reputation score of the user.

Consequently, the reputation score determines the visibility of content, the ability to mint new tokens, the possibility to find new collaborators and the ability to make revenue using content. Creators that obtain a negative reputation score, due to spam or inflammatory comments, will need to pay to create and publish content on the platform. What is deemed inflammatory comments is determined by the community and AI. AI will only focus on the obvious cases, while the community determines the rest. In the worst case scenario, the creator loses the rights to create content all together. Since creators have to be verified to create content, it becomes possible to remove spammers or creators of fake news.

However, the higher the reputation score, the more revenue the creator will receive from its creation and the more people will see the content. Therefore, creators and users have a strong incentive to create high quality content and to behave in a way that positively contributes to the overall community.

3.5 Identity Model

Any creator that wants to develop content on the platform will need to be verified via standard KYC processes. The reason is that users will be paid for their work and will interact with stakeholders from around the globe. dscvr.it will adopt the Sovrin Distributed Ledger to ensure protection of Personal Identifiable Data of the creators. The Sovrin model offers an identity graph with different levels of identities and attributes. The creator will have full control over their own identity on dscvr.it, who gets to see what information and when. Participating organisations often do not need to know someone's full identity, but instead would need to know if someone is who they claim to be. The Sovrin Distributed Ledger enables this and offers full control to the creator.

For a creator, organisation or thing to collaborate on the platform or to create content, verification is required. This will be done using artificial intelligence and machine learning to incorporate a variety of data points, including government-issued identities, to determine someone's identity. However, dscvr.it will also cater for those people (around 1.5 billion) without a government-issued identity. As such, a variety of data sources is required in case a government-issued identity is not available.

Only when an actor is verified, can it submit content to the platform as well as collaborate with other actors on the platform. Although all creators are verified, they can opt for publishing content anonymously by creating an alter-ego. This alter-ego, however, will be linked to the verified user, but in such a way that dscvr.it does not have access to it or can be forced by a government to reveal someone's identity. The alter-ego and verified user will be linked to each other using tokenisation, whereby only the creator of the alter-ego has the proof that a certain alter-ego is linked to a certain verified identity. The creator can store this link offline or on a device of choice, where it will be stored encrypted. Users who simply want to consume content on the platform, do not have to be verified.

4. The Technology

dscvr.it will be future-proof and will be built using the latest technologies.

Core principal values for the development of dscvr.it:

- Agile software development
- Modular development and not bound to any programming language
- Modules that are not part of the core platform can be coded by anyone, anywhere
- Continuous development and continuous integration
- All (external) APIs are public and secured
- Outstanding UX through top-notch User Interface (UI)
- Zero Knowledge Proof as a key enable to ensure privacy

The User Interface builds up dynamically depending on who the user is and what the user intends to do on the platform. User experience (UX) is highly ranked and therefore the platform will be built in such way that the UI is kept as simple as possible at all stages but can become complex yet intuitive based on the user and its intended actions. The users are made up of 3 main user types (creators, consumers and investors) which reflects in 3 main UI. As a user can have all roles it will be possible to seamlessly switch between UIs, this will predominantly be done proactively and automatically, yet at all times allow the user to consciously switch. As such, there is a single UI, with different views depending on what role the user has active.

4.1 The platform's core

dscvr.it is an combination of several modules and technologies that enables us to build a platform with data stored in both centralised as well as decentralised entities. Core paradigms are Blockchain, Big Data, Artificial Intelligence, Machine Learning, Security.

The Web Platform utilising HTTP/2, HTML5, ES6 and CSS3 will serve as a foundation enabling an API driven network for real-time data exchange, platform-independent computing and broad-spectrum dissemination of information. With Blockchain, the platform will facilitate transactions creating an immutable, traceable, verifiable and non-repudiated record.

Artificial Intelligence will initially base itself on Bayesian Networks including usage of the Bayesian inference algorithm, the expectation-maximisation algorithm, decision networks dynamic Bayesian networks and also hidden Markov models as well as Kalman Filters.

Big Data Analytics will initially utilise the following principal architectures, technologies and algorithms: Apache Cassandra, Apache Pig, Apache Spark, ATLAS, FALCON, HDFS, Hive, Kafka, Mahout, YARN.

dscvr.it will develop a permissioned public blockchain; permissioned in the sense that to become a miner you have to be verified and public because anyone can download the

blockchain and view it (not edit it/contribute to it). Since every content creator is also a miner and we expect hundreds of thousands of content creators, we will use a consensus mechanism to help validate transactions, see 4.3.

4.2 The ecosystem

dscvr.it will develop two data warehouse solutions; one centralised and one decentralised. This will enable the actors to choose where and how to store their data.

4.2.1 Centralised Platform

The centralised platform will be similar to Amazon Web Services (AWS), although in the beginning with fewer services. During the beta testing the platform will actually run on AWS. The highest form of encryption will be offered to users using the centralised platform. Any non-user generated content data, such as data to run the dscvr.it platform, will be stored, highly-encrypted, centralised.

Creators can opt to rent a distributed, centralised server to store their own content. dscvr.it will not have access to this server and it will be governed by Chinese walls. Only the content creator(s) will have access to this server. The content creator will pay for hosting the content by a percentage of the revenue made with that content.

4.2.2 Decentralised Platform

The decentralised platform will enable content creators to store their content decentralised and distributed, preventing any censorship and giving full control to the creator. Storage of the content will be done using a technology such as or similar to SWARM or Inter Planetary File System (IPFS). Any metadata linked to content stored decentralised, will be stored on the Blockchain ensuring immutability and making the metadata verifiable and traceable.

When content is stored decentralised, the creator will also store a version on their own computer or server, which will be the master version. Any subsequent version, slave versions, will be stored decentralised, with the other actors not knowing which node is the master node and which are the slave nodes. If the master version is deleted from the master node, which can only be done by the content creator, the slave versions will be automatically deleted from all slave nodes. If requested, the creator can store a highly-encrypted backup of the master version on the centralised data warehouse, to be used in case the master node unexpectedly crashes. This means that the content creator will be solely responsible for the content and data if the decentralised platform is used. As such, we will create a decentralised and distributed NoSQL database that prevents censorship, puts the creator in full control of the data and allows advanced search capabilities. The storage required for the content will be provided by the creators and users

that would like to earn CR8 tokens by providing storage capacity. The content creator will pay for decentralised storage by a percentage of revenue earned through that content. An initial payment will be made when the content is published on the platform and the content creator receives tokens in return for that. A percentage of those tokens will be paid to those nodes hosting the distributed content. The amount to be paid depends on the size of the content that needs to be stored. Since high quality content results in more tokens, it will also result in more money for the nodes hosting the content. Nodes can determine a minimum quality for the content that they want to host. This is an additional incentive for creators to create high quality content, as it will be hosted on more nodes and as such become better accessible to users across the globe.

4.3 The consensus mechanism

Any creator that stores content on his/her own server (whether centralised or decentralised) automatically stores a version of the blockchain, which simply requires the installation of a small software application and link the server to the internet. This blockchain stores copyright and metadata information as well as reputation scores, anonymous user data when applicable and smart contracts. dscvr.it will use a consensus mechanism based on the Proof of Stake model to validate 'transactions', called Proof of Reputation.

The creators of the next block are selected in a deterministic (pseudo-random) way, and the chance that a node is selected depends on its reputation. We will use a randomised selection algorithm, where by the previous miner has no influence over the selection of the next miner. The selected 'supernodes' will verify the transaction using consensus. Within Proof of Reputation, validators are selected based on the deviation of the reputation of the average reputation within the network (of content creators). The more deviated positively from the average reputation, the more likely it is that you are selected. The more negatively deviated from the average, the less likely it is that you are selected.

Validators have an incentive to perform the right action, because if the rest of the nodes decide to reject a validated block (and submit proof of this), this will negatively impact the reputation of the validator. If the node is accepted, the validator receives an increase in reputation score. The network will not pay any transaction fees since the nodes are rewarded already when creating content; Users mint coins when creating content and the higher their reputation, the more coins they mint. However, the opposite is also true: if a node has a negative reputation, it will have to pay for submitting content, thereby preventing fake news, spam or clickbait. Paying transaction fees would result in unnecessary circulation of tokens among content creators, because only verified content creators that submit content on the network can validate transactions (which happens

automatically; any content creator automatically participates in the validation of transactions and can be selected). The validator is compensated for any computational power by an increased number of tokens minted when creating content, meaning the creator has an incentive to keep creating high-quality content.

As a result, the amount you gain in coins minted when creating new content is directly proportional to your reputation, meaning you have an additional incentive to ensure a high reputation on the platform. Within the Proof of Reputation, mining puzzles will not be made easier the higher the reputation, because the node already has an incentive to increase their reputation.

In addition, the impossibility of dislodging a 51% stake is not valid, since a node can never have 51% of the stakes since the stake is determined based on the deviation of the average reputation score (also preventing Sybil attacks). Proof of Reputation also prevents the *Nothing at Stake problem*, because the nodes have something to lose; their reputation within the platform, which eventually could see them being banned from the system if their reputation comes below a certain threshold (since we are using a permissioned public blockchain this is possible).

Therefore, if a node votes on two probable chains this is penalised by reducing the reputation score. The more often a node does this, the more the reputation score will be reduced, potentially resulting in a negative reputation. In terms of a feather-forking, since the other nodes have an incentive not to be malicious, they will avoid reverting blocks to prevent certain transactions. If the system notices the actions of the malicious node, it could be punished by reducing the reputation. If it happens more often, the punishment will increase exponentially, eventually leading to a negative reputation and if it becomes below a certain threshold, the node could be banned.

4.4 Collaborative development

One of dscvr.it's cornerstones, decentralised collaboration, will serve as guideline for software development. Although the core of the platform is centrally developed by dscvr.it employees, all additional components and modules can and will be developed, reviewed and deployed via a special developer user interface. This user interface will allow developers from around the world to pick up tasks and upload their code for review. Real-time collaborative editing and version control will allow conversational interaction, transactional interaction and collaborative interaction on the platform. Once the review is successfully executed, the developer will be paid out via the platform. In this situation the developer is seen as a creator and dscvr.it as a consumer.

By implementing decentralised collaborative software development, dscvr.it will be able to fast track development without unnecessarily growing the core development team. It will reduce risk and provide more control over when to utilise what type of resources. This approach will also serve as initial proof of concept of the platform prior to public go live for content creation and consumption. By proving all concepts internally first, the dscvr.it team will be able to experience the platform first hand and filter out any potential issues before opening up the platform for everybody. This will therefore truly reflect the definition of collaborative development as both in house and freelance developers are in fact defined as users of the platform. This approach will highly contribute to enhancing features and functionality.

4.5 The security

dscvr.it will incorporate the highest security standards and encryption methods to ensure the data, the platform and the crypto currencies stored in (de)centralised wallets are secure. Although it is impossible to create a system with zero probability of being hacked, dscvr.it will take all necessary measures that in case a hack takes place the customers will not become the victim of it and the damage will be limited.

The main compliance for security and data protection will be based on the International Organisation for Standardisation (ISO) 27000 family. This incorporates a process of scaling risk and valuation of assets to safeguard availability, confidentiality and integrity of all data flowing and stored throughout the platform and its APIs.

Security will continuously be assessed and reviewed by both internal and external parties, and eventual improvements classified as high priority on the product development roadmap. In the unlikely event that data is compromised the necessary measures will be taken to inform all relevant stakeholders (users, companies and if applicable governments).

Technical details will be included in the yellow paper, which is currently being developed.

4.6 The Verification Process

Every creator that wants to create content on dscvr.it needs to be verified according to the latest KYC/AML processes. This is done online and within a few minutes. The reason for verification is that once users are verified on the platform, they can easily build a V-company. In addition, dscvr.it will pay its creators using the CR8 token and to ensure compliance with international and local law, dscvr.it will need to verify its users. Having said that, it does not mean that governments will be able to prosecute content creators, because creators can create pseudonyms on the platform and dscvr.it will have no access

to view these links. This should prevent governments from trying to sue dscvr.it to provide details of content creators.

4.6.1 Illegal Content

dscvr.it is a content platform, which enables creators to create any type of content on any type of subject. This of course, will cause problems by creators that want to publish illegal content such as content related to terrorism, murder, rape or pedophilia. Creators will agree with the terms & conditions (which will be shown in a clear and understandable manner) and such content is not allowed on the platform. All content will be scanned by artificial intelligence prior to publishing and if such content is discovered, the creator will at first get a warning reminding the creator that such content is not allowed on the platform. If the creator tries to publish such content again, a final warning is given and at a third attempt the creator will be blocked for life. In the case that artificial intelligence misses the illegal content and the content is published after all, dscvr.it relies on the community to report such content. In the case of multiple reports, dscvr.it will investigate and take action as soon as possible.

4.6.2 Gaming the system

With any online platform, there are people who try to game the system. The same will apply to dscvr.it. There are multiple ways how people could try to game the system and for each possibility, dscvr.it will develop process to prevent this from happening:

- Translators who say they want to translate paid content, but only want to have access to that content for consumption. To prevent this, dscvr.it will require translators to pay for the content and only once the translation has been completed, will they get a refund for the money paid. Since all is done using the CR8 token, payment is in real time.
- A creator can ask his friends to promote low quality content and recommend it as high quality content, thereby possibly promoting spam, fake news or clickbait. To prevent this, we will use artificial intelligence to monitor how certain content is being promoted across the network. Artificial intelligence can be used to determine the network of the creator and if its entire network promotes content, while people outside his/her network denotes the content, it will be investigated manually by dscvr.it.
- Content can always be copy-pasted by using the source code of the website. Consequently, users can copy content and publish it on their own website as their own. To prevent this, dscvr.it will make it difficult to copy paste content, even using the source code. In addition, using the embed code, dscvr.it will reward good behavior. Users that embed content will earn a revenue, while benefiting from high-quality content.

- State actors can create fake ID's to create profiles for content creators and as such create fake news or game the system otherwise. dscvr.it will take into account more variables than just a government-issued ID to establish a user's identity using KYC processes.

5. The Initial Coin Offering

dscvr.it will launch an ICO in Q2/Q3 of 2018. The CR8 Token will be used as a key feature on the platform and any money raised during the ICO will be used to complete the platform. A fixed amount of tokens will become available over the lifetime of the platform. Part of this amount will be available for sale during the ICO and the rest will be minted by creating content on the platform. dscvr.it will only launch an ICO after we have built the core of the platform, have finalised partnerships with key stakeholders in the market and have complied with the various regulators. Therefore, this section will be expanded in due time.

5.1 Transactions

dscvr.it will launch a token: The CR8. The token utility of the CR8 token is to cater for a means of transacting value across the platform.

5.1.1 The CR8 Token

Tokens will count as a value exchange on the platform. In addition, the token will be available on leading cryptocurrency exchange platforms for exchange with other cryptocurrencies or fiat currencies. Users that want to interact on the platform, and did not purchase any tokens during the ICO, have two options to get the CR8 token:

1. Create content on the platform which is rewarded with CR8 tokens. The amount of tokens received depends on the popularity of the platform, the value of the token multiplied by the reputation score of the creator. This offers creators a clear incentive to develop high-quality content. In case a user has a negative reputation score, the creator has to pay CR8 tokens to dscvr.it to submit the content. A negative score influences the price to submit content exponentially, to prevent SPAM or fake news.
2. Purchase the CR8 token on one of the cryptocurrency platforms that offer the CR8 token.

The CR8 token can be used in a variety of ways:

1. To consume content that is not available for free. Users pay for content the moment they start to consume the content. However, depending on the type of content, there is a "trial period", which means that if the user leaves the content, the payment is returned. For written content this period will be shorter than for

software applications. All of this happens automatically and in the background. Tokens that are still in the "trial period" are placed in an escrow and only paid to the creator once this "trial period" is over.

2. Creators can use the token to purchase services of other creators on the platform. So, if you need to hire a developer or UX designer for content that you are creating, the tokens can be used as a form of payment. When this happens, creators determine a token price per hour and smart contracts monitor the work done by the contractor. Once the work is done, both actors need to agree on the quality of the work and once approved, ownership of the copyright is transferred to the client and tokens are transferred to the contractor.

3. To reward content creators using the DN8 button. The DN8 button will be implemented on major websites across the web as well as on dscvr.it. The amount donated fluctuates in real-time, based on the price of the CR8 token to ensure that the value that is donated is small in terms of fiat currency. Of course, users can donate more if wanted. Websites that implement the DN8 button for their own content, will receive a small percentage of each donation, thereby contributing to the network effect of the DN8 button.

Payment of any content or services on the platform will be frictionless and governed by smart contracts. Users can store their tokens in a variety of ways, using a variety of exchange platforms.

Tokens that are still stored in the V-company, after payment of the different stakeholders, but before taken out of the company are stored on highly secure wallets on the dscvr.it platform. This part of the platform will meet the highest security standards to prevent hackers from stealing the money that is in the wallets of the different V-companies.

5.2 Minting

Content creators mint tokens when the create content. The higher the quality of their content and the reputation score, the more coins will be minted. In case of a negative reputation score, a content creator has to pay CR8 tokens to submit content to the platform, in order to prevent fake news, clickbait and spam.

The amount of tokens minted during the content creation process will halve every X months, depending on the popularity of the platform and the value of the token. This gives an incentives for creators to start creating content now and will ensure that the price for content creation remains reasonable and stable over the lifetime of the platform.

6.The Development Agenda

The core teams are based in the same office, thus operating in a centralised structure. For any non-core modules it will be possible to use a decentralised approach by opening up APIs and providing clear instructions of new components' functionality and expected performance. Additional modules can therefore be built by anyone, anywhere, and as such provide an organically scalable software development environment.

A detailed development agenda will be part of the yellow paper, which is currently being written.

7.The Conclusion

We live in exponential times and it is key that the internet evolves to the new decentralised paradigm, where data is controlled and owned by the user, collaboration is key and artificial intelligence governs most of the online systems. For too long, large centralised platforms have been able to benefit from consumers, control users' data and exert tremendous power on how people behave online, without respecting the user in the first place. Advances in technologies such as Big Data, Blockchain and AI have now made it possible to change the internet to what it initially was meant to be. The platform's simultaneous smart contract delivery and decentralised infrastructure will replace traditional platforms and systems, and create a diverse, borderless, commercial ecosystem for individuals, organisations and things to collaborate with each other securely.

dscvr.it aims to be the backbone of this new ecosystem, offering creators, organisations and things a means to effortlessly collaborate with each other across time and space, in a decentralised, secure and transparent way. This will foster innovation and offer consumers the ability to be creative and self-supportive in a world that becomes increasingly automated and autonomous. Help us achieve this vision by supporting dscvr.it.

For those interested in learning the entire vision of dscvr.it, please get in touch with us and we will share with you an extended version of this white paper.