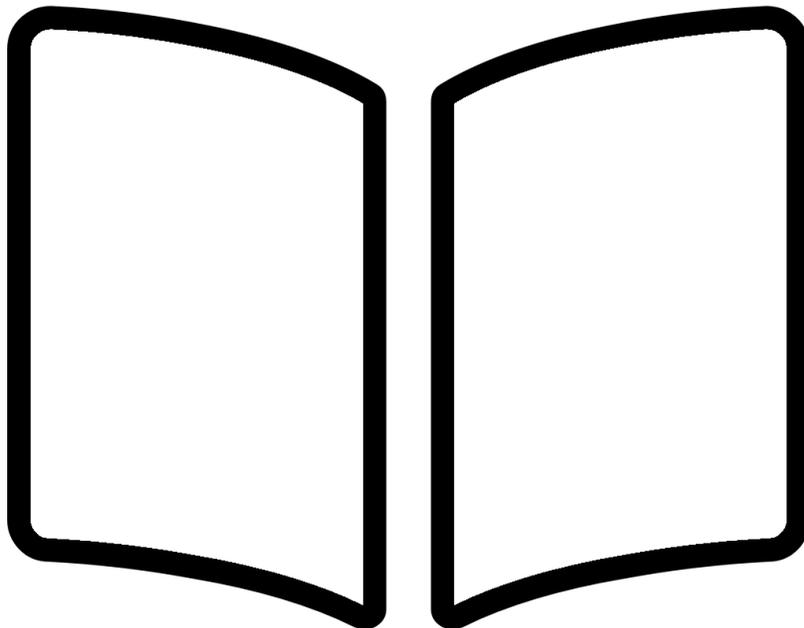


# NOTESAVVY ON EOS BLOCKCHAIN WHITEPAPER

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## EXECUTIVE SUMMARY

### MISSION STATEMENT:

Our goal is to help students achieve their highest academic and employment potential through a user-run peer community. We will create mutually beneficial incentives to contribute quality content and grow the network, while forming relationships with universities and employers through a token-based blockchain-run economy.

### COMPANY OVERVIEW

NoteSavvy is a social network built on the public EOS blockchain, aiming to form a community of students and a searchable body of academic work (including papers and study guides), a question and answer forum, and means for peer tutoring and study groups.

Users who contribute to and grow the network earn tokens and gain reputation points. Tokens are a digital currency that can be redeemed for cash or prizes. Reputation points are viewable in the user's public profile and can be used to demonstrate specific types of knowledge or skills.

Employers and universities can sponsor prizes and advertise on the network. Students' profiles are searchable, so employers and universities will be able to target users with desirable interests or skills. Top performers can be quickly identified for recruiting.

Teachers are also encouraged to participate in the NoteSavvy community. Similarly to students, they can earn tokens by answering questions and providing tutoring. They are also in a beneficial position to earn tokens by referring students to the app. Additionally, from an academic perspective, teachers will be allowed to organize online discussions and study groups.

### GROWTH AND EXPANSION STRATEGY

One of the most critical keys for success will be to have an active user base. This is why so much focus has been placed on creating token incentives for the users to contribute and grow the application.

In the beginning, there will be an airdrop to all EOS accounts with NoteSavvy Tokens. This will be done to draw attention to the project at a minimal cost. Advertising may also be necessary in the beginning, but once critical mass is achieved, the site will likely grow sustainably on its own.

Mutually beneficial token incentives will encourage NoteSavvy users to contribute quality content and aid in organic growth.

- Tokens will be awarded to students who get others to join
- Users will earn tokens by contributing unique and quality content. Contributions include asking/answering questions, posting blogs/studyguides/papers, and tutoring
- Tokens can be redeemed for corporate-sponsored prizes or cash

### CTO AND FOUNDER

Thomas Powers is the Founder and CTO of NoteSavvy. He has 10 years of computer programming experience, the majority coming from the Financial Tech space. He has developed numerous software and web-based applications for his clients in a variety of programming languages. He is passionate about technology and the new potential solutions that blockchain offers. He is looking to apply his dedication, knowledge, skills, and experience to this startup.

## I. Why NoteSavvy?

New blockchain technology is allowing for applications that could never exist before. NoteSavvy will use the benefits of blockchain to give a much-needed technological upgrade to the world of academia. For a long time, the education model has been a teacher assigning the same work each year to a new group of students who must individually rework each assignment. Nearly all students struggle at some point. With blockchain technology, we can create a peer-to-peer community that mutually benefits everyone. Students can ask questions to their peers, view papers, and form study groups. Each of those activities will earn the user tokens. See [Complete List of Ways to Earn Tokens](#) for more detail.

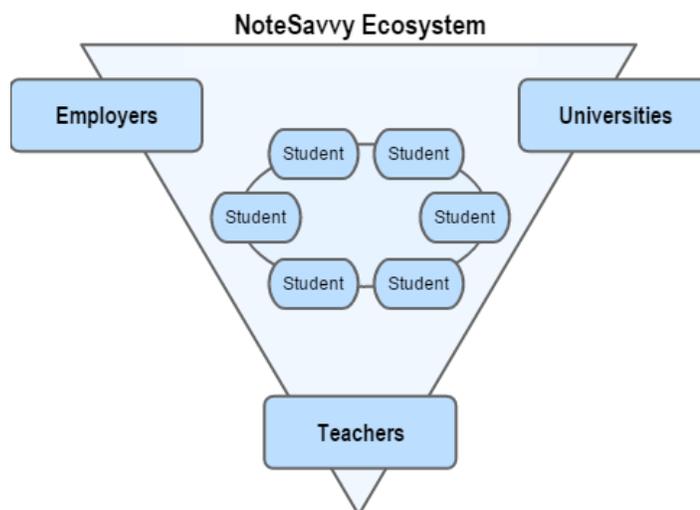
NoteSavvy creates a token-based digital currency on the EOS blockchain. Tokens can be redeemed for cash or prizes, which provides the incentive for students to contribute towards and grow the community.

## II. Technical Overview

NoteSavvy will run on the EOS blockchain. EOS is a blockchain which is designed as a highly scalable, low latency, fee-free platform for decentralized apps. More information specific to how EOS works can be found on the EOS website here: <https://eos.io>

NoteSavvy will have three distinct categories of users:

- **Students:** the heart of NoteSavvy and the foundation of the entire ecosystem
- **Employers/Universities:** recruit top students and sponsor prizes
- **Teachers:** contribute professional knowledge and extend classwork in an online collaborative environment



## How NoteSavvy Runs

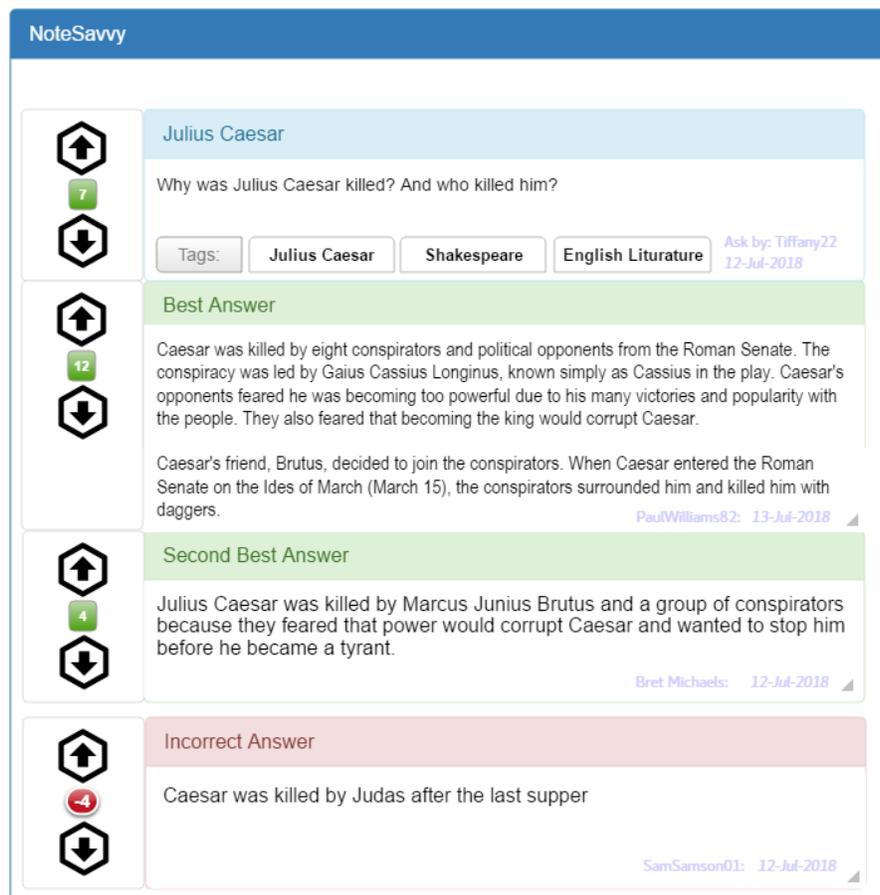
NoteSavvy will be run by students for students. It will be self-organizing and self-policing. Incentives to earn tokens will encourage quality contributions, and penalties will discourage spam. There will be five main functions of NoteSavvy:

1. [Question and Answer Forum](#)
2. [Blog Posts and or Study Guides](#)
3. [Universities and Employers](#)
4. [Group chats/discussions/study environments](#)
5. [Referrals](#)

### 1. Question and Answer Forum

The question and answer forum will be open to the public and everyone can view it. Only registered users can post questions and answers. There will be three ways to earn tokens:

- Asking relevant questions
- Providing quality answers
- Acting as a curator by organizing questions into categories, flagging duplicates, and removing any inappropriate posts



The screenshot shows a user interface for a Q&A forum. At the top is a blue header with the text "NoteSavvy". Below this is a question card for "Julius Caesar" with a score of 7. The question is "Why was Julius Caesar killed? And who killed him?". It has tags for "Julius Caesar", "Shakespeare", and "English Liturature" and was asked by "Tiffany22" on "12-Jul-2018". Below the question are three answer cards. The first is a "Best Answer" with a score of 12, written by "PaulWilliams82" on "13-Jul-2018". The second is a "Second Best Answer" with a score of 4, written by "Bret Michaels" on "12-Jul-2018". The third is an "Incorrect Answer" with a score of -4, written by "SamSamson01" on "12-Jul-2018". Each answer card includes a brief summary of the answer and a small triangle icon in the bottom right corner.

In the screenshot above, you can see that a good, relevant question was asked about Julius Caesar. The question was tagged appropriately to describe the categories it covers, for searching purposes. The question was upvoted by 7 people because they liked the question and felt it was contributing to the community. Three people subsequently responded to the question. Two answers are correct and one incorrect. The incorrect answer was downvoted four times and sorts to the bottom of the page. The other two answers are correct, but one of them is a more complete explanation. As a result, the community has upvoted it more than the other and it sorts to the top.

This question has resulted in a number of tokens getting generated and earned. You can see that questions and answers both earn tokens as they both contribute to the NoteSavvy ecosystem:

User	Tokens
Tiffany22	7
PaulWilliams82	12
Bret Michaels	4
SamSamson01	-4

### **Incentive for Voting**

To facilitate speedy participation in the question and answer section the first user to provide a correct answer gets a three-times token bonus. Additionally, the first three users to vote on an answer will also receive a token.

### **Prevent Vote Spamming and Bots**

To prevent spurious accounts and votes from bots, only users with a minimum of three tokens can vote. They can earn their tokens by cash purchase or from any of the ways listed here: [Complete List of Ways to Earn Tokens](#)

### **Curating**

As with any system, NoteSavvy has the propensity to become disorganized and break down. This is where the role of the curator comes in. Any user with a minimum of three tokens can take on curating responsibilities. They do not need to have any expert academic knowledge, only a keen eye. They will be responsible for keeping all the content of the site well-organized and categorized. This includes:

- Finding and merging any duplicate questions
- Adding or removing tags appropriately
- Recategorizing any mislabeled content
- Flagging and blocking any inappropriate content

To prevent unnecessary edits, it will require 3 curators to confirm a change. Once there is consensus that the edit was valid, they will all earn tokens accordingly.

### 1. Post Blog, Study Guides, Papers

Students are also encouraged to post blogs, study guides, and papers. As with the [Question and Answer Forum](#), they can earn tokens when other users vote on the quality of the content. If they do not want to make a paper public, they can mark it as private, and it will be stored only for them.

Additionally, if a student feels their paper is particularly valuable, they can upload it as private and charge their peers to view.

Blog posts and papers are a great way to build a student public profile and show universities their writing skills.

### 2. Universities and Employers

As with everything on a blockchain app, all transactions and activities are recorded. This data can provide universities and employers deep insight into a student's particular skills and interests. A university or employer can quickly search and see who has the highest [reputation score](#) in a particular discipline and target them for recruitment.

Additionally, employers and universities can advertise and sponsor prizes. They can specifically target which users receive the advertisements and sponsor fun and exciting prizes. See [Employers and Universities](#) for more detail.

### 3. Tutoring

Students and teachers with a high enough [reputation score](#) can also offer peer tutoring. This can be done at the school or through open-source screen-sharing technologies like [WebRTC](#).

### 4. Group chats/discussions/study environments

NoteSavvy will allow chatroom-like environments called studyrooms, which will use WebSocket technology. They will facilitate group chats, discussions, and study groups. Moderators and participants of the studyrooms will earn tokens.

### 5. Referrals

Another important aspect of NoteSavvy is the referral incentive. To help grow NoteSavvy, users can earn tokens by referring friends to join. They will receive an initial referral bonus when the referred member reaches 3 tokens. Additionally, the referrer will receive tokens equal to 25% of the tokens their referrals earn during their first 30 days. This is done to incentivize quality referrals and to discourage spam, as no tokens will be rewarded until the referred member reaches 3 tokens.

## Reputation Score

In addition to earning tokens for contributing to the NoteSavvy community, a user's activity will also build them a reputation score. The reputation score is targeted to specific activities and categories. For example, a user who answers many questions about English

literature will have a high reputation in English, and conversely a user who only answers math questions will only have a high score in math.

Not only can the reputation score be broken down by category, but also activity. It will be easy to see if their reputation comes from asking question vs answering, tutoring, or blog posts.

Reputation points will also be earned from referrals. This information can be very useful to businesses and potential employers as it is a strong indication of an individual user's social media presence.

## Data Storage

All posts, comments, and user information will be stored directly on the EOS blockchain. Larger files such as attachments or study guides will be stored through EOS.io storage, which works through IPFS.

## Centralized Components

The philosophy behind NoteSavvy is to create the strongest possible community-run, decentralized platform. However, there will be a few centralized components to provide necessary safe guards.

### Account Creation/Registration

The main authority for NoteSavvy will be the EOS account notesavvy.io.

This account will be the only account capable of generating and transferring tokens into the NoteSavvy community. Tokens will be unlimited in supply but only notesavvy.io will be able to generate new tokens. The notesavvy.io account will also be able to create new EOS accounts on the blockchain, in order for users to log into the platform.

It is important to make the clear distinction that users are not creating accounts on NoteSavvy but rather on the EOS blockchain itself. It is also important to clarify that users will be earning real tokens on EOS which is redeemable on the cryptocurrency market for money. For this reason, a user has two options for creating an account:

- Create their own EOS Account and Login via Scatter (the gold standard in EOS authentication)
- Register through NoteSavvy and allow notesavvy.io to create their EOS account for them behind the scenes.

### Password Recovery

If the user elects to create their own EOS account outside of NoteSavvy, then no password recovery would be possible and any tokens they have earned will not be recoverable.

However, if a user registers through NoteSavvy directly, two sets of encryption keys will be generated:

- Owner key – Held offline by NoteSavvy and can be used for Password Recovery.
- Active Key – Held directly on the EOS blockchain in an encrypted manner. Only the user's password can unlock it.

Only transactions signed by the user's Active Key will be valid, and only the user knows their password to unlock their Active Key. However, if the user forgets their password, the Owner Key will allow NoteSavvy the authority to issue them a new password and all tokens will be fully recovered.

If the user decides for security reasons they do not want NoteSavvy to have control over their Owner Key, they can opt out. However, doing so will prevent any future password recovery.

### **User Arbitration**

If a user feels that they have been unjustly downvoted and penalized, they have the right to appeal. The appeal involves a human review of the penalty, and if deemed unjust, all tokens will be restored.

## **III. Implementation**

NoteSavvy will be implemented on the EOS blockchain. All code will be made open-source and hosted from GitHub. Not only is this good for PR, but it will allow developers to suggest improvements and even add their own additional functionality. History shows that opening code to other developers results in more press, higher rates of adoption, and a less buggy product. Of course, while the code will be made public, the private key for the main notesavvy.io account will be kept safely stored offline. All interactions with the private key will be done safely in a private central location. See [Centralized Components](#) for more information.

### **Front end**

The Web and Mobile interface will be written with the React and React-Native frameworks. These frameworks are highly performant and have become a modern web standard.

### **Back end**

The main core logic will be run on the EOS blockchain through EOS contracts. The backend APIs for the [Centralized Components](#) will be written in NodeJS.

### **Growth strategy**

One of the most critical keys for success will be to have an active user base. This is why so much focus has been placed on creating token incentives for the users to contribute to the site. Additionally, there will be strong token rewards for [Referrals](#).

In the beginning, there will be an airdrop to all EOS accounts with NoteSavvy Tokens. This will be done to draw attention to the project at a minimal cost. Advertising may also be

necessary in the beginning, but once critical mass is achieved, the site will likely grow sustainably on its own.

#### IV. Complete List of Ways to Earn Tokens

- [Referrals](#)
- [Voting on Responses](#)
- [Asking Questions](#)
- [Answering Questions](#)
- [Curating Activity](#)
- [Writing blogs](#)
- [Posting Papers](#)
- [Posting Study Guides](#)
- [Tutoring](#)
- [Group Chats and Study Sessions](#)

#### V. NoteSavvy Users

##### Students

Students are the heart of the NoteSavvy community. Not only do they [ask and answer questions](#), [post blogs, study guides, and papers](#), and [tutor](#) each other, they also maintain and grow the community. Tokens and reputation points are earned from [Referrals](#) and [Curating](#). The individual incentive to grow the community and keep its content well-organized is one of the greatest advantages of NoteSavvy over other forum platforms.

##### Employers and Universities

Employers and Universities can gain quick access to top talent in any discipline. They will be able to query data based on a user's public profile. This includes:

- Number of questions and answers, number of upvotes, and in which categories
- Sample writing from blog posts and papers
- Number of peer referrals

These metrics can give a lot of insight into an individual's interest and proficiency in a particular area. For example, an employer looking for an individual with a strong social media presence might want to target the students who have the highest number of referrals. Another example: a university may want to strengthen their engineering college. A good way to do that might be to target those with the highest proficiency in mathematics.

In addition to recruiting top talent, employers and universities will also be able to advertise on the site. Advertising can take the form of banner ads, sponsored content, or prizes.

Prizes are a fun twist on typically unwanted ads. One way this might work is for a user to trade in a certain number of tokens in order to redeem a prize. Another way they might be able to redeem a prize would be to watch a promo video, supply some personal information to the employer, or fill out a survey. Prizes can be anything from a university sweatshirt to an iPhone case.

In the NoteSavvy ecosystem, employers and universities are the lifeblood. They provide the fiscal justification for the value of a token. The only way to purchase sponsored content will be through NoteSavvy tokens, which can be bought by USD or EOS. This helps establish a market price for the value of a NoteSavvy token.

### Teachers

Teachers also play a pivotal role in the NoteSavvy ecosystem. Teachers can enjoy a nice stream of supplemental income the same way that students can. Teachers can easily use their expert knowledge to craft quality answers and earn tokens. They will also have a worldwide platform to offer tutoring. Additionally, they are in an excellent position to encourage their students to join NoteSavvy and earn on [referrals](#).

This creates a mutually beneficial relationship between the teachers and students. Students in need of the most help can receive it, and teachers can earn supplemental income for knowledge they already possess. This will help bridge the gap between educator and learner and increased student participation.