A General Framework for Scoring the Reliability of Cryptocurrency White Papers

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A General Framework For Scoring

The Reliability of Cryptocurrency White Papers

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A Thesis in the Field of Legal Studies

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Abstract

A white paper is a document that provides a description of a particular cryptocurrency project’s business plan, and, further, generally outlines any consumptive or functional aspects of its native crypto-asset. White papers are written by founding teams and then disseminated to the public in a bid to raise the necessary funding needed to build out their project. Prospective cryptocurrency project investors read white papers to gain the information needed in order for them to make a well-informed investment decision.

Moreover, there have been many instances of cryptocurrency projects being complete scams. These scams are typically orchestrated by predatory actors who use a malicious cornucopia of tools and tactics in order to raise capital from unsuspecting investors. Because white papers are extremely popular mechanisms used for raising funds, they are highly susceptible to misuse in terms of deluding investors.

For this reason, I hypothesize that a White Paper Scoring Framework (WPSF) can be used by prospective investors to evaluate the reliability of white papers. To do this, the WPSF helps investors determine if a cryptocurrency project falls within one of the three following categories: 1) Very Reliable, 2) Somewhat Reliable, or 3) Very Unreliable. In doing so, this categorization technique attempts to reduce the risk of investing in cryptocurrency projects.
Dedication

This thesis is dedicated to my parents, Laurie and Dennis, who have always given my work immense support. This thesis would not have been possible without their support, encouragement, and love.
Acknowledgments

I wish to acknowledge my thesis director Professor Laura Huang of the Harvard Business School, who generously provided me with her valuable time and thorough feedback. Professor Huang’s guidance was immensely helpful in shaping this thesis.

I also wish to acknowledge Professor Don Ostrowski. Professor Ostrowski spent a great deal of time helping me during the initial thesis proposal-making stage, and I am extremely grateful for his patience and guidance throughout.

Finally, I wish to acknowledge all my professors who have helped me gain some of the most valuable knowledge and insights over the past year.

That said, I am solely responsible for all the ideas, arguments, facts and data, and their analyses presented in this thesis, including any possible, though not intended, errors and mistakes.
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Definition of Terms

**Blockchain:** A blockchain is a decentralized digital ledger in which transactions are recorded chronologically and publicly. A blockchain is a continuously growing list of records called blocks, which are linked and secured together by utilizing cryptographic methods. Information held on a blockchain exists as a shared—and continuously updated and reconciled—database.

**White Paper:** A document that is prepared by an individual or group prior to launching their technology. Generally speaking, it’s a document that provides a description of a particular cryptocurrency project’s business plan and outlines any consumptive or functional aspects of its native crypto-asset.

**Initial Coin Offering:** A type of crowdfunding used by entrepreneurs to raise funding for their projects. Typically, a quantity of cryptocurrency is sold to investors in the form of coins or tokens.

**Base Layer Protocols:** The base set of rules that govern the network. Blockchain protocols typically include rules about consensus, transaction validation, and network participation.
Protocols are often dependent on economic incentives—which generally means the protocol hinges upon a crypto-asset.¹

*Application Platforms:* Facilitate the creation of products [tokens] on-top of the base layer protocols.

*Product Applications:* Product applications sit-on-top of both the base layer and application platform. End-users interact with this layer by using the functions that the applications provide through utilizing cryptocurrencies and tokens.

*Token:* Tokens are used to interact with various decentralized applications.² In other words, a token represents a particular fungible/non-fungible and tradable asset or a utility that is used within a blockchain-based ecosystem. A token represents some unit of value or gives the owner certain rights to use the token for a specific function in a specific system (such as a token that lets the owner access a certain amount of cloud storage space). As such, there are different types of tokens:

- Security Tokens: Individuals who invest in security tokens do so under the assumption that they will receive profit.


• Equity Tokens: These tokens provide equity ownership within the company.
• Utility Tokens: These tokens are used to provide users access to a product or service.
• Payment Tokens: Payments tokens are used to send payments back and forth for goods and services.

**Coin:** A coin is a cryptocurrency that is native to its own blockchain or base layer protocol.

**Smart Contract:** A self-executing contract with the terms of the agreement between buyer and seller being directly written into lines of code. Typically, smart contracts are maintained across a distributed, decentralized blockchain network.

**Bitcoin:** A decentralized digital currency that can be sent from user to user on the peer-to-peer bitcoin network without the need for intermediaries.

**Ethereum:** An open-source, blockchain-based distributed computing platform that enables smart contract functionality.

**Brave Browser:** An open-source, privacy-focused browser that blocks third-party ads and trackers. It uses BAT (Basic Attention Token), a token for a decentralized ad exchange that compensates browser users for their attention while protecting privacy.

**Principle:** A unique piece of information that should be disclosed in a white paper.
Chapter I

Introduction

This thesis investigates 1) the origins of white papers; 2) why they are important in terms of cryptocurrency projects; 3) their unreliability; 4) why there is a need for a white paper scoring framework (WPSF); and 5) a theoretical WPSF that can be used to evaluate the reliability of cryptocurrency projects. Finally, I apply the WPSF to three cryptocurrency projects to test if the framework is successful in determining if they were 1) Very Reliable; 2) Somewhat Reliable, or 3) Very Unreliable.

White Paper Origins

The term “Blue Paper” was developed during the 19th century Britain for government-issued documents. These legislative documents had a blue cover (hence the name “Blue Paper”) and held important information regarding the government’s current state of affairs. More specifically, they were typically read by Parliament members as “primers” before upcoming discussions, and, in many cases, used to help facilitate them. In some instances, the information encapsulated in a Blue Paper was too light or informal, and, consequently, was published with a
white cover instead. Over time, these particular papers were simply referred to as White Papers.³ To date, white papers have transcended beyond their traditional use case in government and are now used by a multiplicity of different businesses and industries. Indeed cryptocurrency projects are no exception to this shift and have made exhaustive usage of them in terms of raising funds from the public.

White Paper Usage

Today, white papers are used as in-depth reports that typically focus on a specific problem, and, further, provide a solution to that problem.⁴ This archetypal problem-solution structure comes in many different “types” such as a Competitive Review, Evaluator’s Guide, Executive Briefing, Market Overview, Position Paper, Product Briefing, Special Report, Backgrounders, and Numbered Lists.⁵ These types are typically described in a technical lexicon, which, in turn, require an extensive amount of time and research to produce (typically weeks or


months). Other short forms of content such as blog posts or e-books are less labor-intensive—a critical differentiator between the two.⁶

White Paper Consumption

Moreover, central to my thesis is the notion that white papers are indeed read, digested, and valued by cryptocurrency investors. However, before I expand on this point, I zoom out to provide evidence that white papers are read, digested, and valued by many readers outside of crypto as well.

To support this claim, I discuss two different parties: 1) Writers and 2) Readers. Writers, in this sense, are motivated to produce high-quality information for their readers in order to provide them real value. Real value, in this sense, means providing the target audience with credible information or solutions to the problems or questions they have. By doing so, Writers can earn the trust of their target audience [Readers].⁷ This newfound trust can then be leveraged, for example, by businesses, to acquire new customers, and, further, augment their profits. With

⁶ Medina, “How You Can Use White Papers To Increase Leads and Engagement.”

⁷ Medina, “How You Can Use White Papers To Increase Leads and Engagement.”
this in mind, leading consulting firms,\textsuperscript{8} drug information agencies,\textsuperscript{9} and marketing companies,\textsuperscript{10} for example, regularly partake in publishing white papers so that they can leverage trust to generate more profits. Likewise, governments\textsuperscript{11} write white papers too. A specific example of this is the Australian Government’s white paper on Agricultural Competitiveness\textsuperscript{12} where they attempt to deliver real value to their citizens by informing them about the initiatives and commitments that their agriculture sector is promising to do over the next few years. Similarly, the Chinese Government regularly partakes in publishing white papers, ranging from topics on economics, foreign aid, defense, etc.\textsuperscript{13} Altogether, the key takeaway here is to remember that Writers issue white papers to win the trust of their target audience; because their trust can then be leveraged to help them more effectively accomplish their goals (whether that be profits or ideologies).

\footnotesize

\begin{itemize}
\item \textsuperscript{8} “Corporate and Business Functions Practice,” from \textit{McKinsey & Company}. Accessed from https://solutions.mckinsey.com/msd/cbf/white-paper-articles
\item \textsuperscript{9} “White Paper,” from \textit{Pharma Voice}. Accessed from https://www.pharmavoice.com/white-papers/
\item \textsuperscript{10} “Marketing White Papers,” from \textit{Martech}. Accessed from https://martech.zone/whitepapers/
\item \textsuperscript{11} “Agriculture Competitiveness White Paper,” from \textit{Australian Government}. Accessed from https://agwhitepaper.agriculture.gov.au
\item \textsuperscript{12} “Agriculture Competitiveness White Paper,” from \textit{Australian Government}
\end{itemize}
Unfortunately, concrete data on the total amount of white paper Readers does not exist. However, it is easy to conceive many instances where Readers would read white papers, and, further, have a multiplicity of different motivations for reading them. Here, I provide three highly plausible but hypothetical examples to illustrate this point. For example, an expert in marketing or logistics may read white papers to stay on top of new shifts in their particular market so that they can identify new competitors, and, if needed, adjust their business strategy accordingly. Similarly, a software developer may read white papers to learn about new technologies because they are simply curious. Or a banker, for example, may read a cryptocurrency white paper with the intention of looking for something that would make cryptocurrencies illegal; that is, in an attempt to protect the bank’s position as an intermediary.

Additionally, from a business perspective, for example, it wouldn’t make sense to allocate capital to fund white papers if a return would never be realized; it would make more sense to invest the capital into something else that would. Finally, as noted above, there are many companies (and governments) publishing white papers regularly, which, in effect, must mean that there are Readers. And while there is little data about the exact reasons why Readers consume white papers, the few scenarios mentioned before (and the many other scenarios that can be easily conceived) suggest that the readership is likely high, and, in effect, that they are read, digested, and valued.

Cryptocurrency White Paper Consumption
In light of this, I now provide evidence to support the claim that cryptocurrency investors find white papers valuable as well. To do this, I draw a connection to a similar mechanism that closely resembles a white paper and its purpose: an investment prospectus.

An investment prospectus is a legal document that describes a security to potential investors. Approximately 630,000 businesses are publicly traded and are generally required to submit prospectuses for potential investors to read. Similar to a cryptocurrency project white paper, the prospectus generally begins with a summary of the company's overarching business model and objectives, the number of shares being offered, and company financial data. It also typically includes a thorough discussion of risk factors associated with the business, how the funds that are raised will be used, dividend policies, and other relevant information. To that end, all of this information is produced in an attempt to provide prospective investors with the information needed in order for them to make a well-informed investment decision.

With this in mind, I draw a connection here because the essence of an investment prospectus and a white paper is virtually identical: a common mode of communication between teams and readers to present the project’s philosophy, its rationale for existence, and the economic model for readers to consume. In other words, the underpinning ideas are much the

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same in that they attempt to give the prospective investor the information they would require in order for them to make an informed investment decision.

Moreover, because there is a voracious appetite for investment prospectuses, it should be no surprise that approximately 94% of cryptocurrency projects publish a white paper.\textsuperscript{16} To that end, it is extremely likely that cryptocurrency project investors do indeed read, digest, and value white papers in light of how investment prospectuses are valued by non-crypto investors too.

\textbf{Chapter II}

\textbf{White Paper Unreliability}

Moreover, from a legal perspective, cryptocurrency white papers are not held to the same standards that official investment prospectuses are. This, as a result, leaves them vulnerable to being extremely unreliable documents. A recent study proved that hundreds of cryptocurrency white papers contained plagiarized passages that were copied from other previously published cryptocurrency white papers. During this time, investors were pilfered north of $1 billion in ICO

scams out of the $9 billion that has been raised since 2017.\textsuperscript{17} \textsuperscript{18} While this fraud cannot be attributed solely to white papers, it is extremely likely that they played an important part because investors value them so much.

Keeping this in mind, evaluating cryptocurrency white papers for reliability is an extremely difficult challenge for investors. For this reason, this thesis provides a hypothetical framework that helps the investor determine the reliability of a white paper; which, if followed, attempts to reduce the risk of them being duped into investing in unreliable cryptocurrency projects.

Reliability Definition

To determine if a white paper is 1) Very Reliable, 2) Somewhat Reliable, or 3) Very Unreliable, first, we need to have a definition of \textit{reliability}. The purpose of this definition is to give us a “benchmark” of what reliability means in the context of determining the reliability of cryptocurrency white papers. In other words, it is important because it provides a clear expectation for what a Very Reliable white paper would look like. Without a reliability definition, we would have no idea what a reliable white paper would look like, and, in effect, be unable to complete this analysis.

\textsuperscript{17} “Crypto Asset Market Coverage Initiation: Network Creation,” from \textit{Bloomberg}. Accessed from https://research.bloomberg.com/pub/res/d28giW28tf6G7T_Wr77aU0gDgFQ

That being said, clearly, the general definition of reliability does not fit the underpinning context of my hypothesis. For this reason, I present a more tailored definition here. A white paper is very reliable if it presents:

1) realistic goals;
2) is pragmatic in terms of how it plans to execute those goals, and;
3) is designed in a way that incentivizes the team to maximize the value of the token they are issuing.

Realistic, in this sense, means that the white paper describes a sensible and practical idea of what can be achieved or expected. Pragmatic means that the white paper presents the idea in a way that is based on practical rather than theoretical considerations. Lastly, designing a project in a way that incentivizes the team to maximize the value of the token is a way for the founding team to prove that they will work hard to provide the greatest possible returns for their investors. Figure 1 illustrates the four individual components of our reliability definition.
With this in mind, to determine if a white paper satisfies my reliability definition, I created the White Paper Scoring Framework WPSF. The framework is composed of 16 individual “principles” that are individually scored. In this context, an individual principle can be defined as a unique piece of information that should be disclosed in a white paper. Each principle is allotted a specific amount of total possible points; the most important principles have more possible points than the least important. See Table 1 for the list of principles.

Fig. 1.
I then run my analysis and give a score to each principle. Finally, I take these scores and add them together to produce a final white paper score.\textsuperscript{19} This final score white paper score is used to categorize the white papers into one of the three reliability categories.

With this in mind, the overarching purpose of the principles is to aid in determining the degree to which the white paper satisfies the three components of our reliability definition. In

\begin{table}
\begin{tabular}{|l|l|l|}
\hline
Principles List & Principle Abbreviation & Total Possible Points \\
\hline
Open-source Code & P1 & 8 \\
Prototype & P2 & 5 \\
Security & P3 & 8 \\
Founders & Leadership & P4 & 15 \\
Governance & P5 & 5 \\
Scalability & P6 & 5 \\
Legal & Compliance & P7 & 2 \\
Token & P8 & 7 \\
Global Distribution & P9 & 4 \\
Demand & P10 & 7 \\
Investors & Partnerships & P11 & 3 \\
Cryptoeconomics & P12 & 8 \\
Token Sale Structure & P13 & 8 \\
Writing Etiquette & P14 & 2 \\
Geography & P15 & 5 \\
Competitive Analysis & P16 & 8 \\
\hline
\end{tabular}
\end{table}

Table 1.

\textsuperscript{19} A white paper score is the total score of the principles added together.
other words, our principles “feed” back into my definition of reliability to help calculate which category of reliability the white paper falls in to. Figure 2 illustrates this point.

With this in mind, if the principles, when added together, return a high white paper score, the white paper has a high degree of reliability because it “fits” our definition of reliability more comprehensively; which, for example, would make it Very Reliable. On the other hand, if the principles return a low white paper score, the white paper has a low degree of reliability because
it poorly fits our reliability definition; which, for example, would make it Very Unreliable. We then plot the white paper score onto our Reliability Scale shown as Figure 3.

![Reliability Scale](image)

Fig. 3.

**Chapter IV**

**Principle Descriptions**

To reiterate, there is a total of sixteen principles that compose the WPSF. Here, I list what they are, why they are important, and, in some cases, why I assigned them their total possible points.

*Open-source Code (P1)*

1. The code is open-source for the community to review.

2. The code has been peer-reviewed or audited before its release.

With open-source code, anyone who wishes to see the source code for anything pertaining to the project can do so. This liberty allows vulnerabilities in the code to be
reviewed by both experts and novices alike. In other words, open-source code reinforces sound security practices by involving many people who can expose bugs quickly, while providing customers and the broader community with concrete examples of reusable, secure, and working code. Additionally, peer-review and the audit-ability of open-source code provides proof of compliance and operational integrity. It can also unearth areas of non-compliance by providing information for and from audit investigations. Finally, open-sourcing code ensures that the cryptocurrency project is fully decentralized, which means it cannot be compromised or deleted by any centralized entity.

Keeping these benefits in mind, the Open-Source Code Principle was allotted the second-highest amount of total possible points. Put simply, having an open-source policy increases reliability because investors can see, at any time, the current state of the project and how it is progressing. Further, through the examination of the open-source code, reviewers can determine whether or not the code works the way it's supposed to; which, in effect, can be used to determine if the team is making realistic promises about the engineering work they are purporting to complete.

Prototype (P2)

1. There is an existing alpha product; or
2. There is an existing beta product.
3. The alpha or beta product is live on a test-net or main-net.

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Creating a prototype allows the team and investors to *evaluate* the technology. Evaluation increases reliability because it shows that the team is aware of costs and difficulties associated with production. Prototypes reveal cost saving opportunities before final production begins and also allows the team to test difficulties associated with building their product. This should help them make more realistic promises.

Additionally, a prototype enables the development team to acquire *user-feedback*. User-feedback can be used to improve the product in the following ways:

- It can help measure customer satisfaction.
- It can acquire data about the product so that improvements can be made.
- It can be used to better gauge what the customer wants out of the product.

The team’s openness to receiving user-feedback is a good sign that they are reliable because it means that they are regularly communicating with the community. More communication should always be viewed as a sign of reliability.

Again, having the team build a prototype is a great way for them to gauge the costs and difficulties associated with production. Finally, a prototype also gives the development team the opportunity to exhibit the promises they’ve made in their white paper. In other words, development teams can prove their reliability by actually *displaying* their prototype to the community of prospective investors.
Security (P3)

1. The project code has been audited by a 3rd party.

2. The project has plans to audit the code regularly. In other words, the code has been tested by other contributors other than the initial development team.

3. There is a bounty program plan to reward individuals for disclosing vulnerabilities in the system.

Code that is audited and tested by a third-party is likely to increase the reliability of the crypto-project (as opposed to code that is tested solely by the founding team). For this reason, open-source code should be regularly tested by a centralized third-party audit partners, and the results should be made available for the community to review. In the event that the team has not completed a code audit, plans should specify a date when it will be conducted and when its results will be made available to the community.

Additionally, a bug bounty program is a crowdsourcing initiative that rewards developers for identifying and reporting on bugs or vulnerabilities in the code. Having a bug bounty program incentivizes individuals to look for vulnerabilities in the code that could create problems for the project.

This principle was allotted the same total possible points as the Open-Source Code Principle because 1) they are similar in terms of enabling transparency and 2) because security is very important to the survival of cryptocurrency projects, and, in effect, the capital committed to the project by investors. Additionally, it is pragmatic to
ensure that the project has sound security practices because it will protect it from potential disruption.

**Founders & Leadership (P4)**

1. The founders have a track record of success or experience in relevant fields.
2. The founders have listed their LinkedIn addresses, Github Repositories, or Stack Exchange accounts for investors to view.
3. The advisor roles and responsibilities are clearly defined.
4. There is or are planned dedicated forums or places where developers, supporters, users, and founders can interact.

The founders and leaders of the project should be required to disclose all matters pertaining to their historical business activities. The term “historical,” in this sense, means all of their business activities related and unrelated to cryptocurrency projects. This act of “transparency” again increases reliability because their business successes or failures can be used to potentially 1) predict their future performance, and, further, serve as a 2) “qualifier” to determine if they are fit to execute their vision.

Furthermore, the founding team should have some degree of experience working in the cryptocurrency ecosystem. Experience means that they have 1) worked within the crypto-industry for at least one year and/or 2) have had academic training on the subject.
Additionally, the founding team should list their LinkedIn addresses, Github Repositories and Stack Exchange accounts (if applicable) so investors can verify the skills the founding team purports to have. Investors can also use Github accounts to help provide more evidence that the founders have been building/working on code pertaining to cryptocurrency related projects or businesses—-that is, to boost the proof that the founding team has relevant experience.

The advisor roles and responsibilities should be clearly disclosed and should spell out, in detail, the productive purpose of their affiliation with the project. Productive, in this sense, means that the advisor roles should directly benefit the technology. In contrast, advisors brought on for non-productive purposes to market the product, for example, should be regarded as extremely unreliable. Here, I list the categories that non-productive advisors fall in to:

- They are brought on the project to tout the coin offerings.21
- They are brought on to the project because their brand carries weight.
- They are brought on for their “supposed” connections.

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All of these non-productive advisor roles are extremely unreliable because they are not being leveraged to benefit the technology directly. In fact, there have been instances of teams enlisting celebrities to promote their projects illegally.\footnote{Frances Copoloa. “SEC Fines Floyd Mayweather And DJ Khaled For Illegally Promoting A Fraudulent ICO.” from Forbes. Accessed from https://www.forbes.com/sites/francescoppola/2018/11/29/floyd-mayweather-and-dj-khaled-were-paid-to-promote-a-fraudulent-ico/}

Finally, establishing dedicated places where network participants can interact with the founding team or leadership augments the reliability of the project. Having communication channels open between the founding team and the community increases transparency, which, in effect, pressures the founding team to perform their duties properly.

Keeping all of these points in mind, I assigned the Founders and Leadership Principle the highest amount of total possible points. Put simply, investors take on a considerable amount of risk if the founding team is unqualified to pursue their proposed vision. In other words, teams who are unqualified to build something they are incapable of building, and, further, promise to do so, are not only unrealistic but very unreliable.

\textit{Governance (P5)}

1. There is a process to propose and implement major updates to the code.

2. There is a plan or mechanism for rewarding, raising, or allocating funds for future development of the project.
Generally speaking, there are two ways for projects to propose and implement major changes to their source code: 1) on-chain governance and 2) off-chain governance. On-chain governance is a system where formal changes are encoded into the underlying blockchain protocol. Typically, participants accomplish this by proposing changes through code updates or proposals, and each participant of the network (or node) votes on whether to accept or reject the proposed change. Because this process is executed in an extremely transparent way, on-chain governance should be viewed as reliable.

Off-chain governance is different from on-chain governance, in that decision making happens informally—that is, away from the blockchain’s underlying codebase. Each respective network’s participants compete for its control through various mechanisms of coordination such as community forums, social media sites, and the project’s office communication channels. While off-chain governance isn’t as formal as on-chain governance, it’s still a form of governance that offers transparency and accountability, and, as such, should be considered reliable.

Additionally, formal governance mechanisms to raise additional funds for the project should increase reliability. These mechanisms can come in the following forms:

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23 “Off Chain Governance,” from District0x. Accessed on https://education.district0x.io/general-topics/what-is-governance/off-chain-governance/
• **Treasury System:** A treasury system is a community controlled and decentralized collaborative decision-making mechanism for sustainable funding of the blockchain development and maintenance.24

• **Reserve System:** A reserve system holds a certain portion of funds raised from an ICO and disburses them only when certain milestones are reached.

To that end, the Governance Principle was allowed a reasonable amount of total possible points. It’s extremely hard to generalize the reliability of the governance systems that each cryptocurrency project employs, and, further, determine if they are reliable. In addition, much like the various government types that exist around the globe, the preferred style, depending on who you are and the particular ideology you identify with is very subjective. Having said that, the sole purpose of this principle is to simply ensure that there is a pragmatic process to implement major updates to the source code and allocate funds effectively, irrespective of the governance type.

*Scalability (P6)*

1. There is a clear roadmap for the stages of development and project milestones.

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2. The network operating costs have been identified for all participant types.

A clear roadmap for the stages of development is integral for improving the reliability of a crypto project. Each roadmap should have a set of stages. Each stage should include 1) a description of the milestone’s purpose, 2) be assigned an estimated delivery date, and 3) identify any of the possible issues that may be encountered that could potentially slow down the development of each milestone.

Additionally, a description of all the participants and their roles within the network need to be identified. Once they are, the official (or projected) operating costs need to be disclosed for the respective network participant types.

By doing so, the team proves that they are taking pragmatic steps to plan out the required stages of development, which, in effect, is a sign of reliability.

Legal & Compliance (P7)

1. The digital assets legal restraints or considerations are disclosed.

Given the largely unregulated nature of crypto projects, any regulatory considerations pertaining to particular jurisdictions need to be disclosed to investors. Legal considerations are important to address because this shows that the team did their due diligence in ensuring that what they are offering to investors is actually legal.

Token (P8)
1. The token distribution plans are fully disclosed.

2. The token types (e.g., service, work token, or hybrid token) are fully disclosed.

3. The function(s) of the token is fully described.

The founding team should be completely transparent about their token distribution plans. A link to the actual code that governs that distribution should be made available in the white paper.

In addition, the founding team should disclose the type of token(s) their project utilizes. Disclosing the type of token and its function is important because it distinguishes how one can expect the token to work and what they can receive from owning the token.

Furthermore, a white paper should always disclose information about how the token works because it helps users understand what actions they can and cannot take to earn rewards or derive value. Without disclosing this, it would be impossible for an investor to decipher the real value that the cryptocurrency project is providing for its users, which, in turn, would make it extremely unreliable.

Moreover, this principle is important in terms of incentive design because prospective investors can be assured that the tokens will be distributed fairly so that no single entity can assume authoritative control. Finally, distributing tokens to many users will enable greater interactions among network participants, which can, for example, reinforce network effects. In this case, more participation among network participants
would mean, in a hypothetical sense, that the project is healthy—which is also a sign of reliability.

*Global Distribution (P9)*

1. The geographic regions are identified where the token will be traded.
2. In the event that secondary markets exist, the volume of tokens should be distributed relatively evenly across market-exchanges.

The geographic region where the token will be issued and traded need to be disclosed so that investors can be prepared to make purchases and selling arrangements for the crypto-asset.

Additionally, considering the massive number of attacks exchanges have and continue to encounter, distributing the tokens across multiple exchanges is widely beneficial from a security standpoint for both investors and the founding team. In other words, if the tokens are only being distributed in one place, there is a single point of failure. Hackers, for example, could take advantage of this scenario and steal all of the tokens in an attempt to compromise the network. For this reason, a sign of reliability is the team making an effort to distribute their tokens relatively evenly across various market exchanges.

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**Demand (P10)**

1. There is early consumer demand proven through community interest.

2. There is a growing number of developers/contributors working on the project, defined by the number of repositories and commits.

User interest for the token is a sign of reliability. The *euphoria* around the technological underpinnings of the project can serve as proof of user-demand for the token.\(^{26}\)

Additionally, a growing number of developers/contributors committing their time and resources to the underlying protocol is a sign of reliability. In other words, a rational developer would not contribute copious amounts of their time to a protocol that is poor quality if there was no chance of them deriving any benefit from it.

Finally, if there is early demand and a growing community of *developers*, the project is more likely to be realistic. In other words, there is *social proof* from actual engineers who believe the project’s goals are possible to achieve.

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**Investors & Partnerships (P11)**

1. External stakeholders are identified.

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\(^{26}\) This data can be pulled by using Google search inquiries.
2. Partnerships or joint ventures and their roles are identified.

External stakeholders and partnerships need to be identified. This is important for transparency purposes because investors need to know who holds a stake in the project.

**Cryptoeconomics (P12)**

1. There is a reasonable hypothesis that argues that there is utility from obtaining, holding, participating, or spending the respective token(s).

2. There are mechanisms which incentivize actors to exhibit “good” behavior and mechanisms that deter “bad” behavior.

3. The token supply is either fixed or variable.

The project architecture provides a clear and compelling reason for the native digital-asset to exist. In other words, the white paper should list why the entire project cannot be completed without the use of a token.

Additionally, mechanisms that incentivize good behavior among the network participants is a sign of reliability. Incentivizing good behavior is beneficial for the network because it aligns network participants to act in the best interest of the protocol. It is important to note, however, that incentive mechanisms can come in many forms and should be evaluated on a case by case basis.
The Cryptoeconomics Principle was allocated a higher total possible points score than many of the other principles. Put simply, crypto-economics determine the rules and incentives for how the participants in a respective network will act, so that it stays secure and creates value for everyone. Without a sound crypto-economic design, it is highly unlikely that any cryptocurrency project would thrive.

*Token Sale Structure (P13)*

1. The team will allow for the fair distribution of tokens to investors (e.g., setting a cap on the total number of tokens an individual can purchase).

2. The team’s ownership stake is a minority stake and is locked up for a reasonable amount of time (e.g., 6 - 18 months) to ensure that they are economically incentivized to improve the project.

3. The total supply of tokens and their distribution are disclosed to the community.

A fair distribution of tokens will vary based on the project’s design. Generally speaking, however, the token distribution plan should 1) disseminate a majority of the tokens to investors and 2) limit the number of tokens the founding team and their constituents hold. This, in effect, ensures that no single investor (or group) controls the
majority of the tokens that compose the network that could lead to, for example, a 51% attack.\textsuperscript{27}

Additionally, a \textit{lock-up} period for a portion of the founding team’s minority token stake incentivizes the team to work harder--otherwise, they will not be rewarded the remaining tokens. Additionally, if the community is dissatisfied with the team’s progress, the funds that are withheld and can be allocated to other contractors who could use the funds more wisely.

That said, the Token Sale Structure Principle was allotted a high total possible points allocation because 1) it ensures that the founding team cannot control the network (because they give up majority ownership of the tokens) and 2) that the team is willing to work hard to achieve milestones to unlock their remaining tokens. Indeed, these are simple actions, but they carry a great deal of weight in terms of increasing reliability.

\textit{Writing Etiquette (P14)}

1. The white paper should have zero grammatical errors.

2. The white paper should be tested for plagiarism.

3. Sources should be properly cited.

A general rule of thumb when writing is to write in accordance with the literary rules of that respective language. A white paper with zero grammatical errors shows that

\textsuperscript{27} “51\% Attack, Majority Hash Rate Attack,” from \textit{Bitcoin}. Accessed from https://bitcoin.org/en/glossary/51-percent-attack
the team can, at the very least, produce a well-written paper; which, in some sense, reflects their intellect on the subject matter.

Finally, if the white paper lacks the proper citations and is riddled with plagiarized passages, the project is very unreliable.

*Geography (P15)*

1. The project should disclose where the founding team is located and where the project will be developed.

Geography is important because certain countries have a better track record in technological achievement. For example, the United States has achieved so much more from a technological standpoint than many other countries around the globe. For this reason, a project that originates in the United States is probably more likely to succeed than a project that originates somewhere else.

*Competitive Analysis (P16)*

1. There is an analysis of competitors.

2. The projects novel functionalities are listed and are compared to existing technologies that don’t lend themselves to the newfound novel functionalities.
Competitor analysis can be defined as an assessment of the strengths and weaknesses of potential or current competitors. The analysis provides both an offensive and defensive vantage point to identify possible opportunities and expose threats. Providing an examination of the competition, and, further, why the project has the ability to compete with existing incumbents, supplies the investors with more information as to why the project is reliable.

Chapter V
A Proposed White Paper Scoring Framework Test

I now proceed to apply the WPSF to three white papers: 1) Bitcoin\textsuperscript{28}, 2) Ethereum\textsuperscript{29}, and 3) Brave Browser.\textsuperscript{30} I chose these particular projects because they are extremely popular and have achieved massive success in terms of their market-caps. With this in mind, I wanted to see whether or not my WPSF would have categorized these projects into the Very Reliable category.

Bitcoin Overview


Bitcoin was invented by an unknown person or group of people using the pseudo-name Satoshi Nakamoto and was released as open-source software in 2009.\textsuperscript{31} Put simply, Bitcoin is a decentralized digital currency that can be sent from user to user on the peer-to-peer bitcoin network without the need for intermediaries (i.e., banks or credit card providers). Each transaction is cryptographically verified by a network of nodes (computers) and is then recorded in a public distributed ledger called a blockchain. Miners receive Bitcoins as a reward for committing their “compute power” to keep the Bitcoin network running. Bitcoin was the first cryptocurrency to be majorly adopted by the public and is the leader in terms of market value among the other cryptocurrencies.\textsuperscript{32}

Bitcoin White Paper Scoring

\textit{Open-source Code (P1)}

\begin{itemize}
\item The Bitcoin project open-sourced its code for the community to review.\textsuperscript{33}
\item The Bitcoin project’s code was not peer-reviewed or audited by a 3rd party before its initial release.
\end{itemize}


\textsuperscript{32} Recent market-cap data can be pulled accessed on https://coinmarketcap.com

Prototype (P2)

- The Bitcoin project did not release an alpha or beta prototype; there was also no test-net.

Security (P3)

- The Bitcoin project’s code is very simple and leaves little room for vulnerabilities.
- The Bitcoin project does not have a bug bounty program in place.

Founders & Leadership (P4)

- The Bitcoin project’s founder was never disclosed and remains unknown. 

Governance (P5)

- The Bitcoin project utilizes a Bitcoin Improvement Proposal (BIP) process to propose and implement major updates to the source code.
- The Bitcoin project has no mechanism for rewarding, raising, or allocating funds directly for the future development of the project.

Scalability (P6)

- The Bitcoin project did not offer a clear roadmap for the stages of development or project milestones.

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• The Bitcoin project did offer information as to how the network operating costs would be structured.

**Legal & Compliance (P7)**

• The Bitcoin project did not disclose any important legal constraints or considerations.

**Token (P8)**

• The Bitcoin project did release coin distribution plans.

• The Bitcoin project identified the token type as electronic cash, which can also be inferred to be a type of currency (albeit digital).

• The Bitcoin project identified the functions of bitcoins.

**Global Distribution (P9)**

• The Bitcoin project did not have an ICO, so there was no need to identify where the bitcoins would initially be traded.

• The Bitcoin project did not have the opportunity to distribute its coins across market-exchanges because they did not exist at the time.

**Demand (P10)**

• The Bitcoin project proved early consumer demand within the cryptographic computing community.
• The Bitcoin project has attracted a growing number of developers/contributors to the project.35

Investors & Partnerships (P11)

• The Bitcoin project did not have to identify external stakeholders, investors, or joint ventures because they did not exist.

Cryptoeconomics (P12)

• Bitcoin’s argument that there is reasonable utility from obtaining bitcoin is strong because it positions itself as the first P2P technology that can move money around the world, without the need for a centralized intermediary.

• Bitcoin’s design implements a mechanism that incentivizes actors to exhibit “good” behavior.

• The bitcoin supply is fixed.

Token Sale Structure (P13)

• The Bitcoin project allowed for the fair distribution of bitcoins.

• The Bitcoin project did not have a team that would receive a percentage of the total amount of bitcoins.

• The total supply was disclosed to the community.

35 Developer activity for Bitcoin can be retrieved from https://coincheckup.com/coins/bitcoin
Writing Etiquette (P14)

- The white paper had zero grammatical errors.
- The Bitcoin white paper was not tested for plagiarism but cited all sources correctly.

Geography (P15)

- The Bitcoin project did not disclose where the founder was located, nor his or her identity.

Competitive Analysis (P16)

- The Bitcoin project provided a broad competitive analysis of why a P2P cash system is necessary.
- The Bitcoin project listed its novel functions and compared them to the existing technologies.

Table 2 presents the total score for each individual principle.
Table 2.

<table>
<thead>
<tr>
<th>Principles</th>
<th>Total Possible Points</th>
<th>Score</th>
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<tbody>
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<td><strong>Total WPS Score</strong></td>
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</table>

According to our WPSF, the Bitcoin white paper would have been categorized as a Somewhat Reliable cryptocurrency project. This is unsurprising because the most important principle (e.g., Founders and Leadership) was given a score of zero. However, it performed extremely well in describing the Governance, Cryptoeconomics, Token and Competitive Analysis principles. Had the white paper been more clear on the Founders and Leadership
Principle, it would have been categorized as a Very Reliable cryptocurrency project. To date, however, it remains one of the most successful cryptocurrencies by market-cap and usage.

Ethereum Overview

Ethereum was proposed in late 2013 by Vitalik Buterin. Ethereum is an open-source, blockchain-based distributed computing platform and enables smart contract functionality. In other words, Ethereum is both a cryptocurrency and a decentralized computing platform where developers can use the platform to create decentralized applications and issue new crypto assets, generally known as Ethereum tokens. To this date, Ethereum is the second-largest blockchain by market-cap.

Ethereum White Paper Scoring

Open-source Code (P1)

- The Ethereum project open-sourced its code for the community to review.


37 Smart contracts are self-executing contracts with the terms of the agreement between buyer and seller being directly written into lines of code. The code and the agreements contained therein exist across a distributed, decentralized blockchain network.

38 Recent market-cap data can be pulled accessed on https://coinmarketcap.com

The Ethereum projects’ code was not peer-reviewed or audited by a 3rd party before its initial release.

Prototype (P2)

- The Ethereum project did not release an alpha or beta prototype; initially, there was also no test-net. However, Ethereum was one of the first major projects in the crypto space and employed similar features that Bitcoin successfully implemented.

Security (P3)

- The Ethereum project’s core code leaves relatively little room for vulnerabilities.
  However, vulnerabilities in smart contract code have been a continuous issue for many of the projects launched on Ethereum--the most famous being the DAO hack in 2016.\(^{40}\)
- The Ethereum project does have a bug bounty program in place.\(^{41}\) The bug bounty hunters identify bugs in the protocol and clients.

Founders & Leadership (P4)

- The Ethereum projects’ founders were disclosed. Vitalik Buterin, the founder of the Ethereum project, had extensive experience in the crypto space relative to many of his

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\(^{41}\) “Ethereum Bounty Program,” from *Ethereum*. Accessed from https://bounty.ethereum.org
peers. As one of the thought leaders in the space, he founded the Bitcoin Magazine to publish his work.\textsuperscript{42} For this reason, the Ethereum founding team and their leader are extremely qualified.

\textit{Governance (P5)}

- The Ethereum project utilizes the Ethereum Improvement Proposal (EIP) process to propose and implement major updates to the source code. An EIP is a design document describing a new feature for Ethereum or its processes or environment. In other words, EIPs can be regarded as “amendments” to Ethereum’s constitution. Moreover, when an EIP proposal is submitted for review, the core developers and community discuss its significance in open meetings, who together, in time, come to an agreement on whether or not it \textit{should} be implemented. In the event an EIP (or amendment) gains consensus among the core developers and community, the nodes (or computers) that run the Ethereum network have to update their software to include the updated code. This can either be done through a hard-fork, which is not compatible with an older version of the software, or through a soft-fork, which is a backwards-compatible change. In other words, nodes are voting on whether or not they want to accept the update by either running the new software or not running the software through soft-forking or hard-forking. Although Ethereum’s governance system is rather informal, it has worked well so far in terms of growing the Ethereum project.

\footnote{\textsuperscript{42}Klint Finley, “Out In The Open: Teenage Hacker Transforms Web Into One Giant Bitcoin Network,” from \textit{Wired}. Accessed from https://www.wired.com/2014/01/ethereum/}
The Ethereum project used the Ethereum Foundation for rewarding and allocating funds directly developers to facilitate the future development of the project.43

**Scalability (P6)**

- The Ethereum project offered a clear roadmap for the stages of development or project milestones.
- The Ethereum project did offer information as to how the network operating costs would be structured.

**Legal & Compliance (P7)**

- The Ethereum did not initially release any important legal constraints or considerations.

**Token (P8)**

- The Ethereum project did release coin [Ether] distribution plans.
- The Ethereum project identified Ether’s functionality.
- The Ethereum project identified how Ether can be used within the context of smart contracts and as currency.44

**Global Distribution (P9)**


44 Buterin, “A Next-Generation Smart Contract and Decentralized Application Platform”
● The Ethereum project did have an ICO, but there were no plans that stipulated where Ether would be initially traded on exchanges.

● The Ether project did not have the opportunity to distribute its coins across market-exchanges because there were very few at the time.

**Demand (P10)**

● The Ethereum project proved early consumer demand within the cryptographic computing community.

● The Ethereum project has attracted a growing number of developers/contributors to the project continuously.\(^\text{45}\)

**Investors & Partnerships (P11)**

● The Ethereum project did not use external stakeholder funding or partner with any 3rd party companies.

**Cryptoeconomics (P12)**

● Ethereum’s argument that there is reasonable utility from obtaining Ether is strong because it positions itself as one of the first P2P technologies that can move money around the world, without the need for a centralized intermediary. Additionally, the use of

\(^{45}\) Recent market-cap data for Ethereum can be viewed on https://coincheckup.com/coins/ethereum
Ether in the context of the “novel” applications that smart contracts enable augment the utility of acquiring Ether.

- Ethereum has designs to implement mechanism (e.g., proof of stake) that incentivizes actors to exhibit “good” behavior. Bad actors will be slashed of their rewards if they are found to be acting maliciously.46

- The Ethereum supply is not fixed.47

**Token Sale Structure (P13)**

- The Ethereum project allowed for the fair distribution of Ether.
- The Ethereum project allocated a percentage of the total amount of Ether to the founding team members.
- The total supply was disclosed to the community.

**Writing Etiquette (P14)**

- The Ethereum white paper had zero grammatical errors.
- The Ethereum white paper was not tested for plagiarism but cited all sources correctly.

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47 Recent market-cap data for Ethereum can be viewed on https://coincheckup.com/coins/ethereum


Geography (P15)

- The Ethereum project disclosed where the founding team was located.

Competitive Analysis (P16)

- The Ethereum project provided a broad competitive analysis of why a P2P cash system is necessary and listed some of the most recent technologies that failed to enable smart-contracts.
- The Ethereum project listed its novel functions and compared them to the existing technologies.

Table 3 presents the total score for each individual principle.
According to our WPSF, the Ethereum white paper is categorized as Very Reliable. This is highly unsurprising because the six most important principles received a full score. The white paper also did a great job in describing in terms of describing its governance and roadmap. However, similar to the Bitcoin white paper, Ethereum did not disclose its location and received a score of zero. This aside, Ethereum remains one of the most successful cryptocurrencies by market-cap, usage, and developer activity.

### Table 3

<table>
<thead>
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<th>Principles</th>
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<tr>
<td><strong>Total WPS Score</strong></td>
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Table 3.
Brave Overview

The Brave Web Browser (Brave) is an open-source, pay to browse web browser. It was founded by Brendan Eich, the co-founder of Mozilla Firefox and creator of Javascript. Brave is a fast, open-source, privacy-focused browser that blocks third-party ads and trackers (such as Google Analytics and Adobe Analytics, for example). Brave uses BAT (Basic Attention Token), a token for a decentralized ad exchange that compensates the browser user for attention while protecting privacy. Users can then donate the BAT they earn to bloggers and other providers of web content through micropayments.\(^{48}\)

Brave Browser White Paper Scoring

*Open-source Code (P1)*

- The Brave Browser project open-sourced its code for the community to review.\(^{49}\)
- The Brave Browser code was not peer-reviewed or audited by a 3rd party before its initial release.

\(^{48}\) Brave Software, “Basic Attention Token (BAT) Blockchain Based Digital Advertising.”

Prototype (P2)

- The Brave Browser did not release an alpha or beta prototype; there was also no test-net.

Security (P3)

- The Brave Browser project’s core code leaves relatively little room for vulnerabilities.
- The Brave Browser project does have a bug bounty program in place. The bug bounty hunters identify bugs in the protocol and clients and the Brave Browser project rewards them for identifying issues.

Founders & Leadership (P4)

- The Brave Browser projects’ founders were disclosed. Brendan Eich, the founder of the Brave Browser project, invented the JavaScript programming language that underpins much of our internet today. In addition, he co-founded the Mozilla project, the Mozilla Foundation and the Mozilla Corporation, and served as the Mozilla Corporation's chief technical officer and chief executive officer. Included in Mozilla’s suite of products was the browser called FireFox. While Eich may not have had a formal education in blockchain, he is more than qualified given his technological acumen and experience building a browser.

Governance (P5)

- The Brave Browser does not have a governance system.

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**Scalability (P6)**

- The Brave Browser project offered a clear roadmap for the stages of development or project milestones.
- The Brave Browser project did offer information as to how the payments to the participants in the network would be structured.

**Legal & Compliance (P7)**

- The Brave Browser project mentioned that a portion of the funds raised during its ICO would be allocated for administrative and legal costs.

**Token (P8)**

- The Brave Browser project did release their coin [Basic Attention Token or BAT] distribution plans.
- The Brave Browser project identified BAT’s functionality.
- The Brave Browser project identified how BAT can be used within the context of their browser product.

**Global Distribution (P9)**

- The Brave Browser project did have an ICO, but the white paper lacked information on where their tokens would be traded after their initial sale.
• The Brave Browser project did not have the opportunity to distribute its coins across market-exchanges because there were very few at the time.

**Demand (P10)**

• The Brave Browser project is famed for raising $35 million in 30 seconds, proving its early consumer demand.\(^{51}\)

• The Brave Browser project has attracted a growing number of users to their platform. As of January 5th, 2019, Brave has over 5.5 million active monthly users and over 28,000 verified publishers.\(^{52}\)

**Investors & Partnerships (P11)**

• The Brave Browser project did use external stakeholder funding for a seed round before their initial coin offering.\(^{53}\)

**Cryptoeconomics (P12)**

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\(^{52}\) “Brave passes 5.5 million monthly active users and features over 28,000 Verified Publishers,” from *Brave Software*. Accessed from https://brave.com/2018-highlights/

\(^{53}\) “Brave Investors,” from *Crunchbase* https://www.crunchbase.com/organization/brave-software/investors/investors_list#section-investors
● Brave Browser argument that there is reasonable utility from obtaining BAT is strong because it positions itself as one of the first P2P technologies that pays you for your “attention.” In other words, the utility of the token is based on user attention, which simply means a person’s focused mental engagement.\(^{54}\)

● The Brave Browser project has a way to verify advertisers to ensure that they are not malicious actors.

● The Brave Browser project’s token supply is fixed at 1.5 billion BAT.\(^{55}\)

**Token Sale Structure (P13)**

● The Brave Browser project allowed for the fair distribution of BAT.

● The Brave Browser project allocated a percentage of the total amount of BAT to the founding team members.

● The total supply was disclosed to the community.

**Writing Etiquette (P14)**

● The Brave Browser white paper had zero grammatical errors.

● The Brave Browser white paper was not tested for plagiarism but cited all sources correctly.

\(^{54}\) Brave Software, “Basic Attention Token (BAT) Blockchain Based Digital Advertising.”

\(^{55}\) Recent Brave Software market-cap data can be seen on https://coinmarketcap.com/currencies/basic-attention-token/
Geography (P15)

- The Brave Browser project disclosed where the founding team was located.

Competitive Analysis (P16)

- The Brave Browser project provided a broad competitive analysis.

- The Brave Browser project listed its novel functions and compared them to the existing technologies.

Table 4 presents the total score for each individual principle.
Table 4.

<table>
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<th>Principles</th>
<th>Total Possible Points</th>
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<td>4</td>
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<tr>
<td>Demand (P10)</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Investors &amp; Partnerships (P11)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Cryptoeconomics (P12)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Token Sale Structure (P13)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Writing Etiquette (P14)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Geography (P15)</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Competitive Analysis (P16)</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total WPS Score</strong></td>
<td></td>
<td><strong>88</strong></td>
</tr>
</tbody>
</table>

According to the WPSF, Brave’s white paper is Very Reliable. Again, this is highly unsurprising because the five most important principles received a full score. However, unlike Bitcoin and Ethereum, Brave did disclose the location of their project. The white paper also did a great job in terms of describing its roadmap and how users can expect to benefit from the token. The Governance Principle, however, received a score of zero because Brave’s core developers
make governance decisions (unlike Ethereum or Bitcoin who use formal proposals to make updates). Similar to Bitcoin and Ethereum, Brave remains one of the most successful cryptocurrencies by market-cap and usage.

Research Limitations

One important limitation to consider is that the principles I’ve incorporated into the WPSF (and their total possible points) were chosen subjectively and not by any rigorous mathematical calculations. In other words, rather than taking a mathematical approach to assigning the principles, I designed the WPSF to answer the most seemingly intuitive and logical questions any rational investor would ask when reading a white paper and making an investment decision.

Additionally, the unique total possible points were assigned based on what principles I believe to have the greatest impact on reliability too. For this reason, the WPSF should not be viewed as a rigid scoring framework, but rather a “soft scoring framework” that can, if needed, be customized to meet the desires of each investor.

Finally, a project’s white paper can be extremely reliable but still fail. For this reason, the WPSF should not be viewed as a panacea for predicting successful cryptocurrency returns.

Conclusion

The final white paper scores for each project were as follows: 1) 73 for Bitcoin; 2) 88 for Ethereum, and; 3) 88 for Brave. According to my analysis, the Bitcoin white paper would have
been Somewhat Reliable, and Ethereum and Brave both Very Reliable. Below, I plot their scores on the Reliability Scale.

![Reliability Scale](image)

**Figure 4.**

Moreover, all three projects fit my definition of reliability relatively well. To date, all three persist are used by millions of users. It is important to note, however, that my WPSF analysis was limited to three projects. And although it was successful in predicting the reliability for these three projects, it is essential that it be tested against cryptocurrency projects that have failed also. In doing so, it is likely that certain white papers would have passed as Very Reliable, but turn out to be Very Unreliable. In this case, my WPSF would have failed, which, in turn, would mean that a WPSF is not the perfect solution for reducing the risk of investing in
cryptocurrency projects. Testing the WPSF against other cryptocurrency projects is beyond the scope of this paper and needs to be explored further.
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