

MyStandard 1.0

MyBe Inc.

November 2021

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Abstract

MyStandard is a mechanism for securing, permissioning, and profiting from personal data. MyStandard is a collection of open source and decentralized technologies paired with back-end businesses and services. MyStandard leverages this format to create a secure and individual controlled data sharing marketplace that is minimally custodial. The data sharing marketplace's first application is in talent acquisition. MyStandard alleviates the issues plaguing the talent acquisition space, which include high fees per hire, rent seeking middlemen, and risks associated with acting as the full custodian of user data. MyStandard aims to revolutionize the data space which is rife with inefficiency, leaks, and lack of benefit to the users themselves. With MyStandard, organizations can make more cost-efficient, targeted data requests while users benefit from monetizing their data and maintaining full control.

1 Introduction

1.1 Context

Application user data and subsequent monetization of that user data fuels Web2 technology monopolies at the user's expense. There is no practical method of unsharing user data with large technology businesses and these large businesses are not obligated to share user data monetization profits with users.

In fact, each year, these types of businesses generate approximately \$215 billion dollars of revenue by selling user data.¹ While legacy technology companies are making efforts to increase user data privacy, there is no effort to either ramp down user data monetization or compensate users.

A central issue with data at legacy technology businesses is that they custody user data in the first place. For example, a company that stores resumes for its users has to manage and secure centralized servers that store those resumes. While many legacy technology businesses benefit from monetizing this user data, they simultaneously expose themselves and their users to risk and regulation for acting as custodian of their user's data. As an example, in June 2021, LinkedIn had a breach of 700 million user profiles.² A tool that derisks candidates from these types of attacks does not currently exist.

1.2 MyStandard Solution

MyStandard aims to address this complicated issue using a transparent marketplace built on cloud technologies and decentralized networks. The marketplace is for organizations and users to exchange data stored on decentralized storage networks for tokens settling on trustless and permissionless blockchains.

¹ Data Dividend Project. 2021. url: <https://www.datadividendproject.com/>

² The Record. 2021. url: <https://therecord.media/hackers-leak-linkedin-700-million-data-scraps/>

By moving financial settlement and user data custody to decentralized permissionless networks, MyStandard deprecates the adversarial relationship that users find themselves in with large legacy technology companies, giving users more control of their own personal data. MyStandard provides an integrative and positive sum solution to a non-trivial problem. Critically, MyStandard does not store the user data itself. Instead, data is held in decentralized storage, controlled by user-owned private key infrastructure. MyStandard puts data control back in the user’s hands.

2 Terminology

The MyStandard technology stack uses a number of Web2 and Web3 technologies. Avalanche³ C-Chain is the EVM-compatible blockchain where MyStandard will deploy smart contracts.⁴ Data storage will take place on the IPFS⁵ and Filecoin⁶ decentralized storage networks. Textile⁷ provides MyStandard with a convenient API for interfacing with decentralized storage networks. Private key management for storage clients is aided by Torus Key Management and Torus client SDKs⁸, which offer benefits such as key recovery methods, should users misplace their keys. As MyStandard evolves, future iterations will leverage the Chainlink oracle network to connect MyStandard on-chain and off-chain services in a decentralized manner, further improving the resilience of the platform⁹. The MyStandard platform segregates users into two classes, (1) data requestors (“Organizations”), and (2) data providers (“Candidates”).

3 Product

3.1 Concept

For the MyStandard marketplace to function, Organizations must have MyStandard Token balances that they purchase for use in the data sharing marketplace. Organizations purchase tokens based on the number of Candidate data requests as opposed to volumes of MyStandard Tokens. On the other side of the exchange, Candidates store bundles of data called Blocks, collectively their “MyBlocks.” Organizations pay a consistent dollar value, in MyStandard Tokens, to gain permanent access to a specific Candidate’s Block in its current state. Organizations do not have instant access to future updates or iterations of the same Block of data.

³ Ava Labs. 2021. url: <https://docs.avax.network/>

⁴ Ava Labs. 2021. url: <https://docs.avax.network/learn/platform-overview#contract-chain-c-chain>

⁵ Protocol Labs. 2021. url: <https://docs.ipfs.io/concepts/what-is-ipfs/>

⁶ Protocol Labs. 2020. url: <https://docs.filecoin.io/about-filecoin/what-is-filecoin/>

⁷ Textile.io. 2021. url: <https://docs.textile.io/>

⁸ Torus Labs. 2021. url: <https://docs.tor.us/key-infrastructure/overview>

⁹ Chainlink Labs. 2021. url: <https://chain.link/solutions>

MyStandard will support many types of Blocks with the ability to add even more Block definitions and combinations later.

- The *Contact Information Block* includes Candidate name, email, phone number, and location.
- The *Work History Block* covers data about a Candidate's past roles, which includes employer name, employment dates, and the Candidate's job titles.
- The *Skills and Attributes Block* includes ten skills with Candidate selected proficiency levels for each skill.
- The *Degrees, Certifications, and Awards Block* allows up to five degrees, certifications, and/or awards.
- The *Diversity Block* consists of data to express a Candidate's demographic self-identification across several dimensions including whether the Candidate may be a member of a protected class or classes. This data is allowed to be requested by Organizations if filled out by a Candidate, but is not required, so Candidates have the choice to determine what information they will provide and which Organizations they will share it with.
- The *Portfolio Block* includes past work that Candidates want to highlight as part of their professional portfolio.
- The *Salary Block* focuses on a Candidate's desired annual salary and desired signing bonus.
- The *Desired Work Situation Block* is responsible for data around a Candidate's desired job title, industry, location, relocation preference, desired company, remote work preference, and full-time or part-time preference.

Candidates are in control of what data they want to enter and share at all times. More robust profiles will have higher trust scores associated with them. Individual Candidate profiles will use a completion bar that increases incrementally each time the Candidate completes one of the previously mentioned Blocks.

3.2 Impact on Talent Acquisition

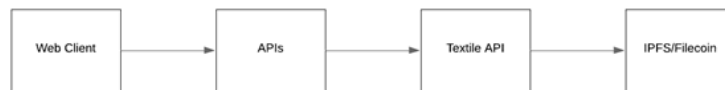
MyStandard has been designed from the bottom up to give Organizations who participate in talent acquisition advantages over the current market tools.

1. Organizations have the option to buy as many data searches as they would like. No longer are Organizations forced into bloated, long term contracts.
2. MyStandard has three mechanisms to grow a corporation's budget over time. In some models, MyStandard could be a cost-neutral tool for Organizations. Budget going up over time is a trait unique to MyStandard.
 - Market forces provide bonus searches for Organizations.

- Organizations are rewarded for adding data into the marketplace, approved by Candidates.
 - Staking, outlined below, increases search budget over time.
3. Search mechanics help minimize exposure to bias during top of funnel sourcing. Organizations using MyStandard make their first engagement with a Candidate based on skillset alone, which avoids the harmful biases that come along with profile-based systems that implicitly reveal non-relevant Candidate features, such as race. MyStandard also allows Candidates to share how the Candidate self-identifies across various dimensions to aid Organizations looking to increase diversity within their talent base.
 4. Recruiters get to source for the exact type of candidate they need and ask for the exact type of data they want to see from them.
 5. Candidates' incentives expire forcing a quicker response from potential Candidates.
 6. If Candidates are not interested in sharing their data with a given employer, the data requester is not charged.
 7. Organizations are encouraged to participate in weighted voting, based on their account size. The topics will be roadmap, UI/UX, feature and industry-focused. They have a true voice in MyStandard's direction.

MyStandard's solution is particularly useful for the talent acquisition industry because it is more engaging, economical, egalitarian, and transparent. MyStandard rethinks how Organizations and Candidates should engage with each other. The nature of this approach requires less screen time to interact productively with private candidate profiles. Candidates may be passive in nature but still are able to take requests from compelling Organizations. This is because MyStandard's platform only connects Organizations to Candidates that match their needs and thus increases the odds of a meaningful interaction if Candidates then elect to connect and share their data. This approach is more targeted because Candidates who do not meet the Organization's search criteria are not approached with requests for their data.

3.3 Key Technologies



MyStandard uses the low-cost, high-scalability, fast-transaction-finality Avalanche blockchain for payments in the form of MyStandard's ERC20 token, IPFS, and Filecoin for decentralized multi-tiered data storage. Additionally, MyStandard

leverages hosted cloud services and infrastructure to create a web application that acts as the product on top of the decentralized networks for a better UI experience for the user.

IPFS is used as a caching layer for recently accessed data and Filecoin is used for archives that are replicated across Filecoin nodes. At no point in this architecture can MyStandard gain access to users' private data without requesting it openly and directly as a standard Organization.

Services such as Textile offer MyStandard a convenient hosted service for access to IPFS and Filecoin without the need to build easily commoditized infrastructure in MyStandard's early stages. In later phases, MyStandard can opt to build decentralized storage infrastructure by hosting its own instance of Textile's open source Powergate API, which powers Textile's hosted service under the hood.

3.4 Decentralization

At launch, MyStandard will act as a trusted counterparty to facilitate smooth execution of the MyStandard vision. MyStandard will host and operate backend and frontend cloud services to provide the quality user experience required to bootstrap this type of community. However, financial settlement and data storage will be handled entirely by decentralized networks, putting control over money and data in the user's hands rather than MyStandard hosted servers. Payments for the data sharing marketplace will settle on the Avalanche C-Chain. Candidates will store encrypted MyBlocks of shareable data on IPFS and Filecoin that they encrypt in a secure and non-custodial manner that only the specified Organization can access when the Candidate approves. Over time, the ratio of MyStandard hosted and operated centralized services will decrease, as the number of on-chain services composed of smart contracts increases. For example, in the future, the process of escrowing payment and triggering data sharing to commence could occur in smart contracts as opposed to hosted APIs. MyStandard's highest aspiration is to steward the community and eventually produce a fully decentralized protocol. There will likely always be a place for centralized businesses to provide value; however, MyStandard believes that the engine powering the data sharing marketplace can be fully decentralized over time.

3.5 Data Storage

Candidates store data using MyStandard when they populate data required to complete a MyBlock in a MyStandard client. On Candidate submission of a MyBlock, the MyStandard client performs two actions. First, the client posts non-sensitive metadata about the MyBlock to the MyStandard Elasticsearch instance for subsequent Corporation searches. Second, the client encrypts the MyBlock with the Candidate's encryption key and posts the encrypted MyBlock to IPFS and Filecoin using a multi-tiered decentralized storage solution, such

as Textile. Users of MyStandard are always aware of where their data is stored, and how it’s being actioned and can control what happens with it.

MyStandard achieves seamless integration with decentralized data by allowing users to generate private keys for encrypting and decrypting a MyStandard hosted encryption key used for MyBlock encryption and decryption. Using private key solutions, such as Torus Key Infrastructure, Candidate private keys are computed from multiple existing or easy to configure sources, such as blockchain private keys (e.g. from an Avalanche Wallet), popular platform OAuth integrations, simple text passwords, and the current browser. This system avoids placing security overhead on Candidates for remembering an individual private key because the private key is instead computed from multiple, easy to access, methods. This solves the critical issue of personal key misplacement by offering a convenient key regeneration method for users.

Organizations pay to permanently access Candidate data. Sharing entails encrypting Candidate data with a unique public key assigned to each Corporation. This way, Organizations can view data they paid for in a secure session using the same key management scheme used for Candidates.

3.6 Search



Searches return results about the MyStandard Candidate set without revealing any individual Candidate’s identity. This is a first of its kind approach to sourcing tools. The data requestor gets a list of minimally qualified Candidates without seeing any specific information about them. They are able to sort these results by exact and close matches. Close matches also display “how close” they are to the requested search. Data requesters then select the MyBlocks they want to view of this list, the length of time the search stays open and then can execute on the search. MyStandard is able to search through central and decentralized data storage mechanisms. Identifiable information is held on decentralized storage while metadata on their skills, location and job title are stored for Elasticsearch to sort through.

3.7 Data Requests



Organizations initiate paid data requests via MyStandard clients, which prompts a MyStandard backend service to message Candidates for data sharing approval. When a Candidate opens the MyStandard application, their data is automatically decrypted locally in the current session.



On Candidate approval, the MyBlock to be shared is encrypted with the paying Organization’s data sharing public key. This allows the Corporation to exclusively decrypt and view the data in a secure session. Aggregate approvals and rejections are logged for Organization metrics.



Upon successful data sharing, the MyStandard backend adds Candidate payment details to MyStandard’s payment relay for inclusion in the next batch of payment transactions. Payment transactions are batch transfer calls on the MyS Token contract deployed to Avalanche C-Chain.

4 Tokenomics

4.1 MyStandard Token

MyStandard Token is an ERC20 token that will be deployed to Avalanche C-Chain. Users will be able to purchase MyStandard tokens through exchange custody solutions or the public secondary market. Organizations would then fund their MyStandard accounts with the tokens in order to purchase data. Once the tokens are purchased by an Organization, they may only leave the Organization’s account through the purchase of a Candidate’s data. In addition to simple payment utility, additional token functionality is outlined below.

4.2 Hedging Services

Other protocols and applications use tokens as a medium of exchange for in-app goods and services. However, this model strains token holders who experience material fluctuations in their purchasing power because of the token’s volatile USD valuation. Unfortunately, given the nature of early-stage technology, the volatility is unavoidable as long as these tokens use mark-to-market accounting on public exchanges.

MyStandard has solved this problem by shielding Organizations’ purchasing power from negative MyStandard Token USD price fluctuations. MyStandard can verify Organization MyStandard Token purchase prices when they purchase their tokens through exchange custody solutions. This way, MyStandard can store purchase data as well as query exchange APIs to track Organization MyStandard Token purchase prices for measuring changes in purchasing power and adjust their data request costs accordingly.

For example, if an Organization’s MyS Tokens have appreciated against the USD, then the Organization will be able to purchase more data from Candidates than they would have been able to at the time of purchase. This outcome is positive-sum and is desired.

However, if an Organization’s MyS Tokens have depreciated against the USD, then the MyStandard platform honors the purchasing power at the time of the MyS Token purchase. This hedging scheme allows MyS Token spenders to retain purchasing power. Effectively, Organizations are guaranteed a minimum floor to the amount of data requests they will receive for their purchase.

The prevailing logic is that protecting Organization purchasing power increases MyStandard Token velocity in the MyStandard ecosystem, which benefits the Candidates’ ability to earn more income in the form of MyStandard Tokens.

4.3 Staking

Since both sides of the market will own MyS Tokens, MyStandard will build staking modules that compensate stakeholders for locking up tokens. MyStandard staking rewards can be generated by the fixed supply of tokens that the MyStandard platform stores in a treasury account, emission of MyS Token incentives, and/or marketplace fees, effectively rewarding participants of the MyStandard ecosystem and encouraging a positive feedback loop of more Candidates providing data and more Organizations buying data.

4.4 Distribution

The fixed supply will be 1 billion tokens. MyStandard Token distribution details and allocation details will be finalized and announced at a future date.

5 Roadmap

The following sections are ordered from earliest planned development start date to latest.

5.1 Credential Protocol

MyStandard will create an attestation and credentials protocol that could be applied to many industries that require Candidates to provide specific licenses and credentials that can be costly and time consuming to properly verify by centralized parties. MyStandard could provide the attestation and credentialization infrastructure for dozens of critical centralized institutions, such as university degrees, healthcare licenses, law licenses, financial licenses, and many more credential types. Once this credential interface is in place, it’s simple to extend the functionality to whatever data formats market demand dictates.

For example, hiring companies and workers in the American healthcare system are often disappointed to learn that a Candidate’s license has expired only

after they have successfully interviewed and been considered for hire. This is in large part due to the manual and inefficient nature of verifying credentials in today's economy. A cryptographic proof of the candidate's license, minted by the central authority who issues the license, produces instantaneous credentialing therefore allowing people to control who sees their info and relieves the current burdens of credentialing.

Over time, MyStandard will build supporting on-chain and off-chain infrastructure that decorates NFT-based credentials. Examples include indexing tools for fast verification and credentials that can only be minted if presented with a proof. A proof could be as simple as a centralized authority's signature on-chain and could evolve to be as complex as proofs based on completion of an online university course or an individual's GitHub contribution graph. Future developments, such as Chainlink DECO outlined in section 5.3, will further empower this functionality, allowing MyStandard to verify credentials on-chain from existing databases without exposing user identity. Powerfully, DECO also proves data provenance, not only verifying the credential but also maintaining cryptographic proof the credential came from an authorized, authoritative source.

5.2 Software Development Kit

In line with MyStandard's vision of progressively decentralizing and becoming more of a protocol that hosts first-party applications, MyStandard's software development kit (SDK) will allow any developer to build on top of the MyStandard data-sharing marketplace and later on the attestation protocol. Giving the engineering community the tools to build on top of MyStandard will unlock great opportunity because the free market and open community can build more than one team alone could build. When considering how this pattern has played out with Apple's App Store or popular APIs, it is clear that given the right tools, a community will grow the pie. This, combined with the proven power of decentralized incentive alignments (through shared token ownership in the protocol), drives a powerful growth loop of more users attracting more platform developers and more developments attracting more users. With aligned incentives between data providers, data consumers and developers, network effects and SDK adoption are accelerated an order of magnitude over Web 2.0 systems.

5.3 Zero-Knowledge Proofs

Zero-Knowledge Proofs (ZKPs) will allow MyStandard to remove human bias from the talent acquisition process. This is possible because ZKPs allow proving something about data without revealing the data itself. For example, you can prove someone is over the age of 18 without revealing their exact age.

Applied to talent acquisition, ZKPs could be used to verifiably prove that a Candidate has accomplished certain goals without revealing identity. A ZKP

could be generated to prove contributions to a codebase with a large and diverse set of contributors without revealing a Candidate’s specific GitHub username.

Perhaps first round interviews adopt this pattern, which leads to substantive “blind” first round interviews that do not reveal unrelated Candidate attributes, such as skin color or gender. Chainlink DECO¹⁰ will offer tremendous utility for an attestation market as DECO will provide zero-knowledge proof generation middleware between smart contracts and existing web servers. A MyStandard smart contract could generate immutable on-chain credentials in smart contracts for users based on DECO proofs generated from bank servers, Fortune 500 company servers, GitHub, and many more centralized authorities in a plethora of contexts. DECO not only proves facts from these sources on-chain but also maintains data provenance, proving the data source as well.

5.4 Advertising

The advertising industry could leverage the MyStandard platform in the same way the talent acquisition space uses the platform. The participants in the marketplace would be consumers of advertising campaigns and the other side are creators and distributors of those advertising campaigns. Advertisers would compensate consumers for their attention by paying MyStandard Tokens in exchange for consumers listening or watching an advertisement. Users of MyStandard could be asked to purchase the product from the ad. Never in history have advertisers had the option to target their ideal customer, pay them fairly for their time and then have an honest exchange of goods in real time. Zero Knowledge Proofs allow Organizations to know that the people they are advertising to are ‘ideal’ and ‘capable of paying’ for a good. MyStandard has the potential to disrupt in an elegant, unobtrusive way that always gives the consumer power and the advertiser precision.

5.5 Healthcare

Medical records and healthcare data require immense privacy and special consideration. Any credible healthcare data service in the US must conform to the Health Insurance Portability and Accountability Act (HIPAA). Medical records and healthcare data are siloed across various healthcare provider systems with little, or in some cases, no interoperability. The current situation strains healthcare provider quality of service. For example, patients typically engage in a manual process with physician offices to correspond and transfer their own medical records to another provider in anticipation of routine visits, procedures, and surgeries.

MyStandard is building for a future in which medical records are stored on decentralized storage networks where patients can have direct control, easy tools for sharing, and, most importantly, data privacy. MyStandard removes the burden of data storage from the healthcare providers, resolving expensive

¹⁰ Chainlink DECO. 2021. url: <https://research.chain.link/whitepaper-v2.pdf>

compliance issues with HIPAA. By keeping data control in the user's hands, MyStandard also settles the worries of healthcare consumers that their sensitive healthcare data may be leaked by an unsuspecting healthcare employee.

5.6 MyStandard Vault

MyStandard Vault is a product that will give users the ability to store some of the most sensitive data in their lives in a secure and non-custodial manner with optional programmability and metadata, such as multi-signature capabilities and version control. For example, a MyStandard Vault could be used to store a last will and testament. This vault would likely use a multi-signature update scheme such that one or more attorneys and chosen family members could co-sign any updates.

6 Conclusion

MyStandard aims to be the leading platform for data ownership and monetization, putting data control in users' hands to avoid the all-too-common data breaches of the modern world. MyStandard leverages the blockchain philosophy of aligned incentives to create a powerful feedback loop where both data providers and consumers benefit, drawing in more users and more utility. As this ecosystem grows, it can further be decentralized through the transition to a platform SDK model and the addition of powerful technology such as blockchain oracle networks, putting more control with the community and expanding capability. With MyStandard, data consumers can purchase data more accurately and more cost-efficiently with targeted requests while users benefit from maintaining full access control and monetization rights over their data. MyStandard is a win for all parties to an increasing problem in this modern day where data is power.

7 Disclaimer

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