

WHAT IS THE PROPER DISCLOSURE FOR AN ICO?

*Chris Brummer, Trevor I. Kiviat and Jai Massari **

ABSTRACT

Disclosures in initial coin offerings (ICOs) have ranged widely from informative to¹ incomplete to fraudulent, raising familiar calls for securities law registration of what have been largely unregistered offerings. As this chapter shows, however, registration under the 1933 Securities Act is, as currently enacted, a weak mechanism for mandating the disclosures needed for informed investments in ICO tokens. Many ICO issuances offer non-traditional, non-financial² rights that require and involve different pricing considerations than traditional common equity and debt, and are embedded in technical systems unanticipated by the New Deal. As such, ICOs require a reconceptualization of longstanding disclosure obligations and safeguards, as well as a revamped approach towards entities tasked with validating disclosures.

I. INTRODUCTION

One of the main conclusions following spates of fraud and abuse relating to any class of financial product is that more regulation is needed, especially when it comes to disclosure, to restore market integrity and protect the investing public. Whether following the stock market crash of 1929 or the 2008 financial crisis, reform-minded critics have, with good reason, suggested to policymakers and investors that more abundant, publically available information can enable investors to make better-informed capital allocation decisions and reduce their vulnerability to wrongdoers.

Policy makers and regulators have again turned to this solution as they consider Initial Coin Offerings (“ICOs” or “token sales”). Since their inception in 2013,³ ICOs have functioned largely as unregulated forms of fundraising that have

* Order is alphabetical. Dr. Brummer is a Professor of Law, Georgetown University Law Center; Mr. Kiviat is an Associate at Davis Polk & Wardwell LLP; Ms. Massari is a Partner in the financial regulatory practice of Davis Polk & Wardwell LLP. We are immensely grateful for our research assistants on the project, Brendan Costello and Amy Larsen.

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³ Although many cite the Ethereum pre-sale in 2014 as the first ICO, this title likely goes to Mastercoin, which was introduced in 2013 by developer J.R. Willet in a white paper he called *The Second Bitcoin White Paper*. In this document, Willet suggested using Bitcoin’s blockchain as a base protocol layer, on top of which new protocols with new rules would be constructed. In other words, Mastercoin would serve as an interim layer between the Bitcoin blockchain and new decentralized

driven a spectacular spike in funding, with an estimated \$5.6 billion (USD) raised worldwide across 435 ICOs in 2017 alone. ICOs have, until recently, rivaled traditional venture capital funding.⁴

ICOs have also been associated with fraud,⁵ failing firms⁶ and alarming lapses in information sharing with investors. These problems are made more complicated by the fact that ICO tokens are associated with a broader class of novel digital assets⁷ that operate on peer-to-peer networks with varying levels of centralization.⁸

It should thus come as little surprise that increased disclosure is on the menu around the world as policymakers consider how best to regulate ICOs. In the wake of dramatic rises in largely unregulated ICO funding—and the accompanying spates of fraud and abuse—the international regulatory community has considered reforms often involving more explicitly treating ICOs as securities.⁹ In the United States, this has meant attempting to bring ICOs within the regulatory perimeter of the Securities Act of 1933 (the “Securities Act”) and forcing ICO promoters to undertake the same extensive disclosures that other issuers do when offering

applications. Mastercoin introduced one of the key characteristics of an ICO token vis-a-vis the broader universe of digital assets: the “premine.” A premine means that a bunch of coins are set aside for the founders to hold or sell, either for compensation or to fund ongoing operating expenses. Mastercoin also laid the foundation for some important economic arguments raised in favor of ICOs: (1) that building and testing one’s own blockchain is less efficient than creating a new application with its own protocol rules on top of an existing blockchain, and (2) that new protocol layers on top of a main blockchain, such as the Bitcoin blockchain, will increase the underlying asset’s (e.g., Bitcoin’s) value since this activity expands the underlying asset’s utilization.

⁴ COINGECKO, QUARTERLY CRYPTOCURRENCY REPORT: Q1 2018, at 15. **Note to Amy [TK].**

⁵ E.g., John Biggs, *Exit Scammers Run Off with \$660 Million in ICO Earnings*, TECHCRUNCH (Apr. 13, 2018), <https://techcrunch.com/2018/04/13/exit-scammers-run-off-with-660-million-in-ico-earnings>.

⁶ E.g., David Z. Morris, *Nearly Half of 2017’s Cryptocurrency ‘ICO’ Projects Have Already Died*, FORTUNE (Feb. 25, 2018), <http://fortune.com/2018/02/25/cryptocurrency-ico-collapse>; see also, e.g., DEAD COINS, <https://deadcoins.com>.

⁷ Some digital assets, such as Bitcoin or Litecoin, are widely regarded as decentralized stores of value or mediums of exchange due to certain common economic features that support these functions; these are sometimes referred to as “pure cryptocurrencies.” Other digital assets, such as Monero or Zcash, are a subset of pure cryptocurrencies that also possess certain features designed to enhance transaction privacy and confidentiality (“privacy-focused coins”). Beyond pure cryptocurrencies and privacy-focused coins, there exists a broad array of general purpose digital assets (“platform coins”), such as Ethereum, NEO and Ravencoin, which are designed to facilitate various peer-to-peer activity, from decentralized software applications to “smart” contracts to digital collectibles, such as CryptoKitties. Platform coins also enable the creation of new digital assets called “tokens,” which are typically developed for a specific purpose or application—for example, (1) “utility tokens,” which generally have some software-based functionality beyond mere use as a medium of exchange or stored value and are situated within a broader platform or service and (2) “security tokens,” which are designed to represent more traditional interests like equity, debt and real estate with the added benefit of certain features of the digital asset markets, such as 24/7 operations, fractional ownership and rapid settlement.

⁸ For an detailed discussion of decentralization, see Vitalik Buterin, *The Meaning of Decentralization* (Feb. 6, 2017), <https://medium.com/@VitalikButerin/the-meaning-of-decentralization-a0c92b76a274>.

⁹ **Note to Amy:** CITE.

securities to the public.¹⁰ Namely, when undertaking a public ICO, an issuer would have to provide key information to prospective purchasers of the tokens as required by SEC regulations, such as the disclosure specified on the SEC's Form S-1, which mandates disclosure required for general public offerings. If a more limited ICO is contemplated, one must comply with the formalities for crowdfunding or private placement offerings available under SEC regulatory regimes specific to those types of transactions.

Little discussion has, however, been devoted to just how well existing disclosure meets the aims of regulators and the needs of ICO token investors (or even ICO sponsors), especially in the United States. Instead, policy conversations largely assume that the robustness of the more developed and proven regulatory scheme provided under U.S. securities laws should simply be extended to upstarts that have largely escaped oversight thus far. Under this regulatory posture, the expansiveness of the Securities Act—and its explicit application to nontraditional securities, otherwise known as “investment contracts”—should be adequate to tame digital asset markets and in the process bolster informed investor decision making.

In this chapter, we will unsettle the all-too-common assumption that Securities Act registration and disclosure requirements, as they currently exist, offer adequate remedies for the increasingly obvious shortcomings of ICOs. This chapter instead offers a more tempered conclusion and argues that, as currently constituted, the Securities Act and its accompanying regulations offer, at best, only a partial remedy to the disclosure challenges that ICOs pose. Even if subject to the full panoply of disclosures operative in public offerings, ICO promoters would not necessarily disclose all factors material to evaluating and pricing their tokens. Furthermore, even where disclosures are made, they may not be done in ways that investors can easily understand, and technical disclosures would not be subject to the kind of financial statement audits common in more traditional securities offerings.

To demonstrate, we theorize the economics of ICOs¹¹ and argue that ICO tokens are often different from traditional common equity and debt securities in ways that should inform their valuation, especially where they afford [non-financial]¹² rights to investors. We show that even assuming total informational efficiency in ICO token markets, the determinants of token prices will not be identical to those that inform the prices of traditional securities like stocks and bonds. Moreover, the New Deal disclosure regime developed over the last 70 years failed to fully anticipate the technological features that support the growth of ICOs. As a result, disclosures required under U.S. securities laws—from private

¹⁰ **Note to Amy:** SEE, E.G., CITE to *Munchee* case.

¹¹ This chapter only covers the enigmatic class of ICO tokens (i.e., utility tokens). It does not cover pure cryptocurrencies, which generally (1) are not distributed through an offer and sale as ICO tokens, (2) are complete and useful as currency immediately upon network launch and (3) do not promise any further development of features or functionality or actions to make them more valuable in the future. Similarly, it does not cover security tokens, which by definition fall squarely within the existing disclosure regime.

¹² **Note to Chris [JM].**

placements to full-fledged registered offerings—fail to provide investors with the information a typical investor would need to make a reasonably informed investment decision. Instead, they often require information that, though critical for IPOs, has limited utility for ICO token purchasers.

Ultimately, these observations hold important lessons for global regulators. Subsuming ICO tokens into existing regulatory frameworks may prove helpful as a starting point for proper regulation and market stability. However, this starting point requires an additional longer-term process of rethinking key applications of both domestic securities concepts and financial economics to the sector. Getting rules right may not require starting from scratch, but it will require more than just extending an existing regulatory regime to a new asset class.

Our chapter proceeds as follows. To set the stage for our analysis, Part I starts with a stylized account of a typical ICO, the type of disclosures commonly provided and the questions that are often left unanswered. Part II then offers a new theory of ICO pricing, taking account of discrepancies arising where value and profits are no longer tied to claims on an issuer’s future profits or revenue. After establishing a theoretical model for pricing, Part III, the heart of the chapter, reviews existing approaches to disclosure and identifies vulnerabilities and shortcomings in documents relied upon in public and private offerings alike. Part IV problematizes “don’t mend, just extend” approaches to ICO oversight by highlighting the dearth of key institutional features in virtually all global disclosure regimes, including the absence of standardized auditing mechanisms and procedures for the smart contract code that would be disclosed in public offering documents. In short, we show that even if rules were amended in ways to better reflect the economics of ICO investments, many of the most important but highly technical disclosures would still not necessarily be understood, and securities laws neither require nor provide a framework for auditing them before their release to the public. Finally, Part V offers policy and legal recommendations for which aspects of the traditional securities disclosure regime are most appropriate in the context of ICO disclosure, as well as how these elements of the regime should be adapted to account for the unique and novel features of the initial coin offering.

II. ICOS: THE SHOT-IN-THE-DARK INVESTMENT DECISION

For context, we begin with a stylized example. Imagine Lambo Laurie, a promising MBA student at Georgetown, receives a call from a friend with an exciting new investment opportunity. “Lambo,” her friend declares, “I know you’re really into commercial real estate, but I’ve got an even more exciting investment idea—a blockchain project! You should go online and check it out—there’s a guy building a new platform that will disrupt the entire widget industry, and in exchange for some Bitcoin, he’ll give you a new digital token that will allow you to use the platform in

the future. Even if you don't need it, it's sure to rise in value when the platform revolutionizes the widget market."

Lambo has never invested in ICO tokens, but the mention of a new blockchain project immediately brings to mind the skyrocketing value of cryptocurrencies in 2017.¹³ She searches online for more information and navigates to the offering's website. There, a slick landing page highlights several of the token network's features and a large clock displays the time remaining until the ICO goes live. Lambo downloads the only informational document, linked to by a large button labeled "white paper."¹⁴

The white paper is thirty pages long and the cover page bears the words of the project in small type: "Widget Network." The paper lists a single author, Bo Jackson, whose affiliation is given only as a representative of the Widget Network. A short abstract describes Widget Network as a revolutionary new ecosystem for the community to buy, sell and exchange digital widgets.

The white paper confidently states that this network will be widely adopted and implies that such adoption could lead the tokens to appreciate tremendously in value. Lambo is captivated. Early-stage investments in technology that disintermediate the traditional way of doing things seemed like a world open only to elite venture capitalists. It seems like a rare opportunity to get in on the ground floor of something that might end up being the next Uber or Airbnb.

¹³ See, e.g., SAIFEDEAN AMMOUS, *THE BITCOIN STANDARD: THE DECENTRALIZED ALTERNATIVE TO CENTRAL BANKING* (2018) (describing the rise of Bitcoin, including its historical context and the economic properties that have facilitated its growth).

¹⁴ The following project is fictional, but it is based largely on our review of the white papers of recent ICOs. The sample we reviewed included the top ten ICO raises through June 1, 2018, excluding duplicates and ICOs with no publically available white paper, from *ICO/Token Sales*, SMITH + CROWN, <https://www.smithandcrown.com/sale>. *EOS.IO Technical White Paper v2*, GITHUB (March 16, 2018), <https://github.com/EOSIO/Documentation/blob/master/TechnicalWhitePaper.md> (the EOS white paper; \$895 million raised); PROTOCOL LABS, *FILECOIN: A DECENTRALIZED STORAGE NETWORK* (Jan. 2, 2018), <https://filecoin.io/filecoin.pdf> (the Filecoin white paper; \$262 million raised); L.M. GOODMAN, *TEZOS — A SELF-AMENDING CRYPTO-LEDGER WHITE PAPER* (Sept. 2, 2014), https://tezos.com/static/papers/white_paper.pdf (the Tezos white paper; \$234 million raised); SIRIN LABS, *FINNEY SECURE OPEN SOURCE CONSUMER ELECTRONICS FOR THE BLOCKCHAIN ERA*, https://sirinlabs.com/media/SIRINLABS_-_White_Paper.pdf (the Sirin Labs white paper; \$158 million raised); EYAL HERTZOG ET AL., *BANCOR PROTOCOL: CONTINUOUS LIQUIDITY AND ASYNCHRONOUS PRICE DISCOVERY FOR TOKENS THROUGH THEIR SMART CONTRACTS; AKA "SMART TOKENS"* (May 30, 2017), https://www.bancor.network/static/bancor_protocol_whitepaper_en.pdf (the Bancor white paper; \$148 million raised); GAVIN WOOD, *POLKADOT: VISION FOR A HETEROGENEOUS MULTI-CHAIN FRAMEWORK DRAFT 1*, <https://polkadot.network/PolkaDotPaper.pdf> (the PolkaDot white paper; \$144 million raised); NADER AL-NAJI ET AL., *BASIS: A PRICE-STABLE CRYPTOCURRENCY WITH AN ALGORITHMIC CENTRAL BANK* (June 4, 2018), https://basis.io/basis_whitepaper_en.pdf (the Basis white paper; \$125 million raised); PUMAPAY: *A FULLPAYMENT PROTOCOL WHITE PAPER - DRAFT V1.9* (2018), https://pumapay.io/docs/pumapay_whitepaper.pdf (the PumaPay white paper; \$117 million raised); Quoine Pte. Ltd., *LIQUID BY QUOINE: PROVIDING LIQUIDITY TO THE NON-LIQUID CRYPTO ECONOMY* (Oct. 30, 2017), https://s3-ap-southeast-1.amazonaws.com/liquid-site/quoine-liquid_v1.9.pdf (the QASH white paper; \$108 million raised); *THE STATUS NETWORK: A STRATEGY TOWARDS MASS ADOPTION OF ETHEREUM* (June 15, 2017), <https://status.im/whitepaper.pdf> (the Status white paper; \$101 million raised).

Lambo Laurie reads on and learns that the network is not yet fully developed. In part to finance such development, the Widget Network’s promoters plan to raise capital by creating and issuing Widget Network Tokens (“WNTs”), which they will sell in exchange for Bitcoin and Ether. These tokens will ultimately serve a key economic function on the platform once it is complete. This blockchain will be similar in many respects to that underlying Bitcoin. But, the developers of Widget Network have plans to surpass Bitcoin, which has several perceived shortcomings. For example, some have questioned whether the Bitcoin network can scale effectively.¹⁵ Similarly, Bitcoin has perceived limitations regarding transaction privacy and confidentiality.¹⁶ By contrast, the infrastructure for transferring and using WNT is promised to be faster, more scalable and more anonymous. And, unlike Bitcoin, WNT is envisioned to be used for more than transacting value—they also allow for “two-way encrypted communication among WNT holders.”

Lambo Laurie finds such declarations enticing but the project is still hard for her to conceptualize. The white paper provides a technical description of how the network will function, citing to a website called GitHub, where the developers have made available for inspection all of the Widget Network’s code. Lambo navigates to the Widget Network’s GitHub page and is somewhat confused by the various files, folders and terms of art (e.g., “commits,” “forks,” “clones”) that it contains. After some digging, Lambo gleans enough to appreciate that this website is where the Widget Network’s developers gather to collaborate on the code that underpins the project. Lambo is neither an engineer nor an expert in applied cryptography, so she looks to the narrative to find more clues about how the technology is expected to operate and how exactly the promoters plan to execute their vision.

Reading further into the white paper, Lambo Laurie is left with more questions than answers. Will the token give her any rights or a portion of the project’s earnings? The white paper lists the dates of the ICO and the sale price. But it is not clear if there is a cap on fundraising. Will the project raise as much money as people will give to it? How will the money be used? She wonders if her investment will go towards hiring new developers for the project, or if it will be spent on marketing or go directly to the promoters. Even if her capital is used for developing the network, will the promoters be issued tokens that they can then resell for a profit? What about the “advisors” that the white paper touts—will they be compensated, either in tokens, or in a more traditional currency?

¹⁵ Simon Barber et al., *Bitter to Better – How to Make Bitcoin a Better Currency*, LECTURE NOTES IN COMPUTER SCIENCE 399 (2012). *But see* JOSEPH POON & THADDEUS DRYJA, THE BITCOIN LIGHTNING NETWORK: SCALABLE OFF-CHAIN INSTANT PAYMENTS (JAN. 14, 2016) (proposing the Lightning Network to improve Bitcoin scalability), <https://lightning.network/lightning-network-paper.pdf>; Sandra Upson, *The Lightning Network Could Make Bitcoin Faster—and Cheaper*, WIRED (Jan. 19, 2018) (explaining the possible improvements from the Bitcoin Lightning Network), <https://www.wired.com/story/the-lightning-network-could-make-bitcoin-faster-and-cheaper>.

¹⁶ *See* ANDREW POELSTRA ET AL., CONFIDENTIAL ASSETS (noting that “even small amounts of personally identifiable information may completely break [Bitcoin] users’ privacy”), <https://blockstream.com/bitcoin17-final41.pdf>; *see also* Barber et al., *supra* note 15 (discussing both perceived anonymity and security limitations of Bitcoin).

Further, it is unclear exactly who is running the project. Lambo Laurie is worried about giving her money to a faceless website. She had hoped to be able to put her trust in someone who can make the Widget Network a reality. The people who wrote the white paper do not have any formal titles and the white paper does not otherwise list or provide biographies of the team. She is dubious about the claims the white paper makes about trustless operations. The idea that the Widget Network team is constrained by unchangeable code that all can see sounds good, but is it true?¹⁷

And the “Widget Network” branding gives one the sense that there is a company involved, but the white paper and website contain no information about how it is organized or managed. Perhaps the white paper authors are partners in a joint venture? Or maybe there is a corporate entity established in the United States or elsewhere to run the project?

Finally, and most importantly, Lambo worries that she might be sending her money into a black hole; she might never realize a return or a functional product from her investment. The white paper asserts with certainty that the project will be a success. But, surely there are ways that the project could go wrong. Lambo has heard about hacks of other ventures in the blockchain space¹⁸ and wonders what the Widget Network is doing to keep its tokens safe. Likewise, she saw a news article recently about an SEC cryptocurrency investigation,¹⁹ and actually visited Princeton when Chairman Clayton spoke about ICOs.²⁰ What is Widget Network doing to make sure it complies with the law? And what if the law changes quickly or unpredictably?

In the end, Lambo Laurie shakes off her doubts and questions about the ICO and decides to take the risk. Crypto-twitter is abuzz about the token offering and Lambo assumes everyone can't be wrong about such a popular and potentially revolutionary technology. Following the instructions set out on the offering's website, she sends bitcoin from her digital wallet to the receiving address given by the Widget Network's promoters. Lambo Laurie crosses her fingers and hopes for the best. With any luck, she will be transferred a WNT at the end of the sale and the price will appreciate tremendously, or at least she imagines she will be able to sell her WNT to a Widget Network user when it is up and running.

¹⁷ In fact, promises made in a white paper are often not implemented in the code in a way that is binding. One study of fifty top-grossing ICOs found that many issuers did not actually manifest their promises in code. More troublingly, “a significant fraction of issuers retained centralized control through previously undisclosed code permitting modifications of the entities’ governing structures. Shaanan Cohn et al., *Coin-Operated Capitalism* (Working Paper July 17, 2017), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3215345.

¹⁸ *E.g.*, Jen Wieczner, *Hackers Just Stole \$7 Million in a Brazen Ethereum Cryptocurrency Heist*, FORTUNE (July 18, 2017), <http://fortune.com/2017/07/18/ethereum-coindash-ico-hack/>.

¹⁹ *E.g.*, Nathaniel Popper, *Subpoenas Signal S.E.C. Crackdown on Initial Coin Offerings*, N.Y. TIMES (Feb. 28, 2018), <https://www.nytimes.com/2018/02/28/technology/initial-coin-offerings-sec.html>.

²⁰ *SEC Chairman on Cryptocurrencies and Initial Coin Offerings*, PRINCETON UNIVERSITY (May 31, 2018), <https://jrc.princeton.edu/news/sec-chairman-cryptocurrencies-and-initial-coin-offerings>.

III. CRYPTO-ECONOMICS AND TOKEN PRICING

How Lambo Laurie's story ultimately ends is anyone's guess. WNT could appreciate tremendously, replace the US dollar and allow early investors like Lambo to live their best lives. Or, as in the case of [95%] of ICOs, the project could fail. Perhaps the technology underpinning the network could prove flawed. Or perhaps the engineers behind the network turn out to not be well trained enough or have adequate technical competency. Or the company could pivot into a completely different direction for which the token is rendered less central, or used for an entirely different and less profitable purpose.

From the standpoint of securities regulation, neither scenario is inherently problematic. Ventures succeed and fail in a capitalist system. And it is not the job of regulators to play favorites, or to ensure that any one investment succeeds. However, what is problematic is the lack of quality information available to Lambo when making her investment decision. Without information, it is difficult, if not impossible, for retail investors like Lambo to hazard an educated guess about both whether to purchase a token and at what price it would be best to do so. Instead of decisions being made based on economic fundamentals, investments in ICO can be and, according to numerous academic studies, are in fact driven by factors like popularity and social media marketing.²¹ This in turn makes the allocation of capital in a society less efficient and raises the specter of investors becoming vulnerable to scams robbing them of as much as their life savings.

But what information would an investor need to know in order to make an informed decision about ICO tokens? Conversations currently imply that it is, at most, the same information as currently demanded by issuers of securities. After all, the energy behind at times heated debates on the status of an ICO token as either a "security" or "commodity" concern whether or not tokens should be registered and by extension be subject to the same disclosure as stocks and bonds. Under this concept of disclosure, the promoters of WNT would have to share its disclosures with the Securities and Exchange Commission before posting them online, and these disclosures would have to meet the stringent public offering informational requirements of the 1933 Securities Act unless Lambo is deemed to be an accredited investor, in which case less extensive disclosure requirements would be triggered.

Yet notably, the inputs for most ICO token valuations diverge considerably from those informing typical securities. Traditional capital markets require business owners to divest themselves of various rights over their corporation's assets in order to access capital. Issuances of common stock, for example, involve divestitures of ownership. Bond issuances involve interest payments, the creation

²¹ *E.g.*, Mercer Bullard, *The Law and Economics of Crowdfunding: An Empirical Analysis*, Draft on File with Authors (finding that in a set of crowdfunding filers, 90% of the variance in the amount raised was explained by social media engagement); <https://www.bloomberg.com/news/articles/2017-12-12/want-to-issue-a-red-hot-ico-rule-no-1-is-do-very-little-work>;

of credit and priority rights over assets in the case of default. ICOs, by contrast, routinely offer other kinds of economic benefits in exchange for capital that allow founders to preserve economic ownership and control. As seen in our above example, an ICO typically involves founders offering investors the opportunity to access or acquire assets that in turn operate as access devices to developmental digital infrastructures. Perhaps the token allows access to a distributed cloud storage system, or perhaps it allows consumers to manage their digital identity and monetize their personal data. But again, ownership and control, and even rights over profit streams for debt servicing, need not be sacrificed as a feature of the offering.

Pricing an ICO token is consequently an exercise that is fundamentally distinguishable from that undertaken in traditional public securities issuances financings. To be sure, ICO tokens do not escape basic laws of finance. Their price, like that of any financial product (and indeed any object of value) reflects the equilibration of supply and demand. Modelling such equilibria must take into account, however, very different deal dynamics. For equity-based assets like stocks, prices reflect the discounted value of legal rights to future cash flows. Discounted cash flow (“DCF”) analysis is not as informative in valuing many ICOs, however, since they do not ordinarily represent rights to future cash flows and even where they do, future cash flows are not dominant features. Instead, it is the predicted utility value of the token as it is to be used in the future underlying project that drives prices under optimal conditions, together with the features of the ICO token enabling access to that utility value. This future utility value should then be discounted to the present to derive a rational market price at any point, though as in any market, the valuation can fluctuate based on changing prospects of realizing a project and changing circumstances impacting the utility value and future market pricing of that utility.²²

With these basic points in mind, this section provides an overview of the inputs impacting the token economy. As we will see in subsequent sections, the value of existing disclosure regimes and proposed reforms, should focus on these factors in order to provide a useful basis for investor education and protection.

A. Demand Side Factors

Market participants may seek to acquire ICO tokens for many purposes: short-term speculation, longer term investment, or to use the token as part of a network, system, or other technology project that is being developed. Regardless of the purpose of a particular market participant in acquiring the token, the value of any ICO token should—speculative frenzies aside—ultimately reflect the perceived viability and usefulness of the underlying technology solution and the particular rights to access or use that solution represented by the token. Where, for example, a company like Filecoin offers in its ICO a token promising prospective holders access

²² See, e.g., <https://medium.com/@cburniske/cryptoasset-valuations-ac83479ffca7>.

to a future platform for decentralized data storage, the value of that token should derive its price from the expected utility of such a platform in the sector.

This observation bears some resemblance to pricing dynamics of publicly traded securities. After all, the sale of a company's stock reflects, ultimately, the current and future value of the company, including the demand for its products and utility and value of its services. The more successful and the higher the firm's future revenue, the greater the price of its stock should be. Similarly, the better the fortunes of a company, the less risk of default it will pose, and the price of its outstanding debt should rise to reflect a reduced risk premium.

There are fundamental differences, however, between ICOs and IPOs (and other public security issuances). First, unlike most issuers that engage in IPOs and other public security issuances, ICO issuers often are fund raises for projects that are themselves not yet operational and, therefore, the value of the ICO token will be more speculative. In this respect, ICOs are more similar to early-stage fund raises rather than IPOs or other public securities issuances. The perceived novelty and quality of the particular technology solution underlying the token, as well as its technical feasibility, will all be major drivers of success.

So will the existence of competitor or alternative technologies. If the project is innovative, feasible and likely to be completed, demand for a token will be stronger. Equally important is the likely commercial application for the token, as well as the outlook concerning possible competitors. In short, the more obvious the market application of a novel technology and the fewer the competitors, the stronger the demand for a project's corresponding tokens. Along these lines, demand for a token will also be impacted by the likely number of users of the project's technology, the frequency of that use and the price one may be able to charge for such a service.

Moreover, the product on offer—tokens—generally do not offer direct profit participation (as traditional equity securities do) or coupon payments and eventual redemption at par value (as traditional debt securities do). Instead, token purchasers receive the means to access a future project once it is completed, more closely anchoring the value of the token in the utility of the project itself. Investment returns for a token will thus rest squarely on the ultimate commercial utility of the technology under development—and the ability of management to realize optimal results.

For these reasons, the value proposition of a particular ICO token is likely to be more dependent on the ability of a small number of individuals—whether technology developers, managers, or others—to execute the proposed technology solution. Thus, more like a traditional start-up company, the quality of the endeavor's engineers and other technologies may have outsized importance to the venture's success.

The features of a given token, which can vary significantly, will be directly relevant to the market demand for it. How, and under what circumstances, a token provides access to a project's technology solution will shape its utility and,

consequently, demand for the token. Similarly, the logic of tokenization will be important. The ability to create a token does not mean that it is necessary in order for a project to be successful. Finally, additional rights like dividends and equity will also be important, as should any governance rights that accompany holding a token, such as the ability to vote on key protocol changes and platform developments.

Finally, the regulatory ecosystem to which a token will be subject carries demand-side implications. As with stock cross-listings, a premium will be placed on ICOs subject to a predictable, high quality rights-environment. Where a founder's intellectual property rights in a project's technology solution are enforceable and protected, the value proposition of the project should increase, and with it the demand for its associated token. Similarly, the rights of token-holders in this instance cannot be easily infringed, and when the ability of major token-holders to exploit smaller holders is limited, individual tokens should enjoy higher demand. On the other hand, where ICOs are prohibited outright, or subject to a low quality rights-environment, demand for a token will naturally be lower or perhaps nonexistent. Similarly, a lack of certainty as to potential liability in trading or intermediating token sales will depress demand. That said, where ICOs are not only permitted, but also the broader legal infrastructure supporting the transferability of a token is predictable and trusted, the risk premium attached to buying, using and trading a token will diminish, making them more attractive financial products.

B. Supply-Side Factors

The supply of any token is also important in the operation of a token economy, as well as for the more fundamental issue of token valuation. The supply of a token is driven by a number of important factors, not all of which neatly map onto traditional financing processes. In the case of a stock transaction, a company's board of directors decides to issue new shares and in the process makes decisions relating to the overall governance and control of the stock.

For tokens, however, supply-side issues are most directly impacted by token founders' initial minting decision, in which a founder determines how many tokens to create, divisibility of the tokens and whether the founder retains the right to issue more tokens, or conversely, redeem or destroy tokens in the future. This decision may in turn depend on a variety of other considerations, including the expected number of users of the facility or project under development, as well as the amount the founder hopes to raise in the ICO. A large number of users would, all else equal, suggest the minting of large quantities of tokens. So would large fundraising needs, unless the target audience is expected to be able (and willing) to pay large per-token amounts, which presumably would only be possible or desirable if the underlying service is (or is expected to be) expensive enough to warrant it. A large token price would, in short, be expected, for accessing expensive or highly valuable technology services.

The retention, or lock-ups, of tokens by founders will also impact token supply. By agreeing to retain tokens for a specific period, not only can founders signal an aligned interest in maximizing the value and success of the project, but they can also help depress the total number of tokens in circulation, thereby supporting an ICO's price. Similarly, founders can deploy a smart contract that "locks up a portion of minted tokens, taking them out of circulation until some condition is satisfied. The code determines that the tokens cannot be transferred, sold or used at all until the given conditions are satisfied." Once a condition is satisfied, or a benchmark met—potentially enabling or meeting higher buy-side demand—more tokens can be created.

Additionally, founders can introduce caps on future minting via an ICO token's code. One-time issuances are just that, and accordingly purport to remove the possibility of future token creation and inflated supply. Alternatively, code-based limits can be placed on the total amount of the token that will ever be available. However, if decisionmaking regarding, and access to, the code undergirding the token's economic properties is in the hands of the token's issuers or promoters, any promises regarding current or total circulating supply are not written into stone.

Finally, tokens already released can be taken out of circulation, helping to preserve their value much like stock buy-backs undertaken by public companies. The most common method is through "burning" operations where tokens exchanged for services or access to a completed project are not recycled or used by the recipient for future purchases or activities. As such, burning can have a deflationary effect on the price of a token and help sustain its price by ensuring its rarity. It can also, notably, help serve as a buffer against the inflationary impact of future minting.

IV. WHITE PAPERS AS DISCLOSURE DOCUMENTS

In order for prospective investors to make informed decisions about purchasing tokens, such investors must be apprised of factors that will impact such tokens' supply and demand. To the extent that an investor is not knowledgeable about one or more of these factors, she will be unable to make informed decisions about the wisdom or hazards of participating in a token offering, much less about the price at which participating is advantageous.

As seen in our opening hypothetical, in most instances, ICO disclosures, to the extent they exist at all, are typically communicated through documents generically referred to as "white papers." The term alludes the first cryptocurrency white paper, written by Satoshi Nakamoto in 2008, which first set forth the core technical

features of Bitcoin.²³ Since Nakamoto's publication, it has become routine for details regarding cryptocurrency projects to be communicated through white papers, often not only for explanatory purposes but, particularly in the case of ICO tokens, also for marketing and soliciting interest from potential investors.

A white paper's primary function is to describe the technology problem a particular project is attempting to solve and to articulate a proposed solution along with the features of the accompanying blockchain-backed token used in connection with the solution. Along these lines, technologists and investors active in crypto-fund raises commonly suggest that in their white papers, founders provide an overview of the use applications of the project, the team involved in developing it and why the project benefits by being placed on a blockchain in the first instance.

However, white papers have been largely and, often incorrectly, understood as unregulated communications that are not subject to any specific rules or governing framework. Consequently, white papers vary enormously, with some white paper disclosures being more extensive than others and with many providing little useful information. At least one academic study has noted that regardless of countless suggestions and developing norms espousing rigorous ICO disclosures, in roughly 32% of token fund raises, it is not possible to identify the issuing entity's or promoter's origin.²⁴ Our hypothetical with Lambo Laurie was thus already more robust than nearly one-third of the cases. Not only are there few details identifying the individuals behind projects and their contact information, but there may be a complete absence of information pertaining to where the development of a token application is taking place. Complicating things further, only 31% of the ICOs even mention the relevant laws and jurisdictions governing the ICO, leaving potential stakeholders and investors with little indication as to, among other things, where fund-raising is occurring or where applications may ultimately be launched and operationalized.²⁵

Full disclosure of a project's economics inputs is rare as well. Although white papers typically outline a technology problem and solution, management team and smart-contract vesting features of tokens, along with a timeline for an offering and potential uses of proceeds, this is by no means always the case. Some ICO white papers do not disclose the ownership levels of founders or post-ICO vesting restrictions. Although white papers may boast about the novelty of the technology under employ, they may fail to explain why it is that the application or service under development should be put on a blockchain.

All the while, the information that is made available in white papers is not always accessible to lay-readers, making it hard for non-experts to understand the feasibility and attractiveness of the project. ICO white papers were originally intended to be consumed by other technologically sophisticated software engineers

²³ SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM (2009), <https://nakamotoinstitute.org/static/docs/bitcoin.pdf>.

²⁴ Dirk Zetsche et. al, The ICO Gold Rush, It's a Scam, It's a Bubble, It's a Super Challenge for Regulators, Working Paper (Nov. 16, 2017), 12

²⁵ Id.

and developers. As such, they showcased highly technical overviews of projects, frequently relying on highly complex statistical models or experimental code to both introduce and explain their projects. According to some commentators, the more obtuse and undecipherable the jargon, the more street cred some projects attracted.²⁶ This tendency continues to characterize most white papers, even as retail investors have increasingly entered the sector. Not only are challenging concepts explained via complex formulae, but companies also use white papers to establish themselves as experts in a domain, in the hopes that just as they make their pitches for new ICO tokens, competitors may reference their “research.”²⁷

Finally, there are growing questions as to the utility of the information provided in white papers, even for sophisticated investors. Fraud, falsified identities and bogus projects are common, as is highlighted by a tide of enforcement cases shaking confidence in the industry. [Describe recent fraud cases]. But other less-publicized problems also hamper the utility of information. In a recent study, researchers examined a broad swath of ICO white papers and discovered that where projects made representations about their technology, the source code disclosed was done in the form of byte code.²⁸ Byte code is, however, notoriously difficult to dissect and involves tracing both the low level flows of data and arithmetic in order to reconstruct a contract’s logic. As such, it requires meticulous attention to each individual machine operation and memory to retain the state of the virtual machine at each step, along with reverse engineering to verify whether or not the code could actually operationalize features boasted in a white paper. Time consuming, complicated and expensive, the disclosures are effectively unauditible.

Collectively, the absence of a disclosure regime exacerbates the risk already inherent in ICOs. As discussed above, the vast majority of ICOs are for projects that are at a very early stage and only a few of the entities have pre-existing products. In that sense, ICO investments resemble angel and series A equity investments.²⁹ Nonetheless, in the absence of a comprehensive regulatory regime, white papers fall well short of providing the full array of disclosures most investors would need in order to make sound investment decisions. Once they have invested, such investors enjoy few of the protections commonly associated with equity holders like voting rights, anti-dilution protections, formal auditing mechanisms and an elected board of directors.

V. ICO DISCLOSURE MODELS: THE LOGIC, FORMS AND LIMITATIONS

²⁶ <https://medium.com/new-alchemy/5-mistakes-youre-making-in-your-ico-white-paper-8d7fba3fc83f>

²⁷ <https://coincentral.com/cryptocurrency-white-paper/>

²⁸ Coin Operated Capitalism, 43-44

²⁹ Initial Coin Offerings: Early Evidence on the Role of Disclosure in the Unregulated Crypto Market, pg. 14

Not surprisingly, given the consistently weak disclosures required in the ICO market, one of today's most popular policy refrains has been to more explicitly situate them within the governing framework for mandatory disclosure. If ICOs are subject to the same rules attached to public offerings of stock and debt, the argument goes, more abundant information will be made available to investors, allowing investors to make more informed on decisions.

Public offering disclosures are all the more fitting, proponents note, since most ICOs are securities, at least under U.S. law. Though rarely identifiable as common equity, or even bonds, ICO tokens routinely fit the definition of an "investment contract" under the Supreme Court's *Howey* test: they are transactions where an individual "invests his money in a common enterprise and is led to expect profits [primarily] from the efforts of the promoter or a third party." As such, they must be registered and, by extension, are subject to the mandated securities disclosure regime outlined in the 1933 Securities Act, unless ICOs are privately placed with accredited investors or those capable of "fending for themselves."

This *Howey*-backed argument presents an even stronger case since registration and disclosure in the context of investment contracts are grounded in circumstance that do not on their own trigger U.S. securities laws, but when combined, signal a degree of investor vulnerability that could arguably trigger a need for mandatory disclosure. Where individuals invest their money, they put it at risk and can potentially lose their savings. In addition, *Howey* requires a "common enterprise," which courts have defined as situations in which individuals may be unable, or disincented, from coordinating with one another to access information or bargain collectively with a promoter because their gains may not justify the outlay of individual investigative efforts or taking on the costs of coordinating with large numbers of other investors. The stakes are then only heightened where investors are additionally dependent on the promoter for their profits. *Howey* stands, at least in part, for the proposition that when such asymmetric information and power imbalances arise, U.S. securities law will step in to fill the void.

What many regulators and practitioners have, of course, long recognized is that in many, if not most ICOs: participants invest their money (in the form of Bitcoin, Ether or fiat currency), pool their resources in order to fund the development of a project (a common enterprise) from which they expect profits from their tokens, in the form of dividend-like payments or the appreciation of their token for later sale. Investors can thus find themselves in an extremely vulnerable position, especially given the technologically complex nature of many investments. By this logic, the transactions must be registered or privately placed, and appropriate Securities Act disclosures made.

In this section, we complicate the narrative by disentangling the logic of disclosure from its means. As we demonstrate, US disclosure requirements do not always map neatly onto token economics and can still fail to meet the disclosure needs of investors of ICO tokens. Thus even where the *Howey* test may be fulfilled,

investors may not be protected as courts and policymakers may assume. This is because disclosure forms do not always demand the kinds of information that would optimize the decision-making of ICO token investors. Furthermore, the essentially disclosure-optional regimes associated with private placements rely on assumptions of sophistication and agency that are unlikely to prove as robust for ICO token investors as they might for traditional securities transactions.

A. *The “Full” Disclosure Model*

The general disclosure document for securities offerings, Form S-1, has its origins in the New Deal. Following the October 1929 stock market crash and with the U.S. economy still in the midst of the Great Depression, calls for a radical overhaul and implementation of a new regulatory regime had reached a crescendo.³⁰ Securities transactions in the decades preceding the creation of the federal securities laws were simple, albeit flawed. A company seeking to raise capital would issue and sell securities to the public, often assisted by an investment bank that would help identify an appropriate wholesale and retail market for the securities and potentially underwrite the offering. Brokers would then market shares to the public. And depending on the prestige and notoriety of the company, the firm’s shares or bonds would be listed on an exchange or traded over the counter.³¹

This system changed in 1933 with the introduction of the Form A-1. The first general disclosure document, Form A-1,³² required issuers to provide a narrative description of their business, details of corporate incorporation, management, properties, capital structure, terms of outstanding debt, the purpose of the new issue and associated expenses.³³ It also demanded disclosure of topics not contained in listing applications, including management’s compensation, transactions between the company and its directors, officers, underwriters and promoters, a list of principal shareholders and their holdings and a description of any contracts not made in the ordinary course of business.”³⁴ The regime’s special contribution at the time—and a point of particular emphasis in subsequent agency administration—was the provision and accuracy of a firm’s financial statements. In contrast to exchange listing requirements of the time that merely required earnings

³⁰ **Note to AL:** Citation needed.

³¹ See Donald C. Langevoort & Robert B. Thompson, *'Publicness' in Contemporary Securities Regulation after the JOBS Act*, 101 GEO. L.J. 337, 353 (2012) (noting that listing on certain exchanges was “a means of signaling quality to potential traders”).

³² See Release 33-5 (1933).

³³ Mandatory versus contractual disclosure in securities markets: Evidence from the 1930s, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.524.7798&rep=rep1&type=pdf>.

³⁴ Mandatory versus contractual disclosure in securities markets: Evidence from the 1930s, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.524.7798&rep=rep1&type=pdf>.

for the preceding five years, Form A-1 provides a list of more than 40 potentially required line items in the income statement.³⁵

Today's disclosure regime has evolved considerably from its New Deal origins. In 1942, a new Form S-1 was introduced as the primary disclosure document for general issuances and for the following sixty years, would undergo periodic revision and elaboration in the face of varying scandals and political cycles.³⁶ The new S-1 also imposes a number of now canonical disclosures, capturing off-balance sheet arrangements that in the 1990s toppled global companies like WorldCom, as well as requiring more informational efficiency, business-related disclosures.

For the most part, these disclosures have helped the United States regulatory system earn the reputation of being one of the highest quality in the world.³⁷ Still, as a product of the New Deal and keyed as responses to specific past crises, the S-1 is built on a number of assumption about securities issuances that are not always applicable to emerging ICO tokens. As discussed in Part 1, ICO tokens differ considerably from traditional stock and bonds and the kinds of disclosures that are most relevant when deciding whether or not to purchase these more traditional securities. The S-1, keyed to the kinds of risks and logic of traditional securities offerings, offers some help, but it is not clear in many instances how the expectations should be applied. Below we examine some of the most material elements identified earlier and how Form S-1 approaches them.

1. Financial Statements.

The bedrock of the full disclosure model laid out in Form S-1 is financial disclosure. Modeled to reflect the needs of investors considering investment in industrial firms seeking capital to grow established operations, the form goes to great lengths to require the disclosure of a comprehensive and sometimes overlapping set of S-K items that cover the issuer's financial condition at present, throughout recent history and in the future.

Towards this end, Item 11(a) requires a description of "the registrant's plan of operation for the remainder of the fiscal year," and further descriptions of the cash budget for the next six months.³⁸ It also requires substantial disclosure about anticipated material acquisitions, research and development ("R&D") and financial information about each segment of the business.³⁹ Item 11(e) requires full financial statements to be prepared that meet the requirements of Reg S-X, with modifications for smaller reporting companies.⁴⁰ Items 11(f) and (g) require

³⁵ Mandatory versus contractual disclosure in securities markets: Evidence from the 1930s, <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.524.7798&rep=rep1&type=pdf>.

³⁶ Release 33-2887

³⁷ Cite to John Coffee, bonding hypothesis.

³⁸ Form S-1, at Item 11(a) (Pointing to Reg S-K at §229.101).

³⁹ *Id.*

⁴⁰ *Id.* at Item 11(e).

selected financial data (five years) and supplementary financial information (quarterly for the last two years).⁴¹

While comprehensive, these financial disclosures may be of limited utility to prospective investors in ICOs. Issuers may not have any historical financial information to share, obviating the very usefulness of a core disclosure requirement relied on by authorities to inform prospective investors. Some of the financial disclosure items are general enough that they might provide some value to ICOs, such as required forward-looking analysis. Item 11(h), for example, requires a discussion of the registrant's financial condition, including "such other information that the registrant believes to be necessary to an understanding of its financial condition."⁴² This includes discussion of "material trends" and how they will impact the business.⁴³ This disclosure item in particular may be important to ICOs since promoters would be required to discuss the health of the company. Still, many ICOs are brand new projects, or projects with very short histories. As a result, there may be no "trends" to identify.

2. Description of Token.

Whatever the investment, investors should understand what it is they are purchasing. For investors in ICOs, this means, at a minimum, grasping the rights afforded by a token and comprehending how the token is intended to operate.

Form S-1 aspires to afford an adequate description of rights to investors in securities, but it was not drafted with token investments in mind. There are no explicit references to ICOs in disclosure requirements, and the S-1's general disclosure requirements for traditional securities are an imperfect fit for the most pertinent features of an ICO token.

Arguably the most important disclosure requirement, Item 9, requires a description of the securities to be registered.⁴⁴ As a guide, it then lists a series of designated securities, and specifies disclosures concerning issues like voting rights, dividend rights, and rights concerning liquidation and preemption, among other things.

Still, this disclosure requirement is operationalized to effectuate disclosures traditional securities: critically, the requirements are organized by sections entitled capital stock, debt and warrants and rights. Meanwhile, for securities not explicitly contemplated, it requires "a brief description (comparable to that required [for capital stock, debt, warrants and rights]) of the rights evidenced thereby."⁴⁵ As such,

⁴¹ *Id.* at Item 11(f) (Pointing to Reg S-K at §229.301); *Id.* at Item 11(g) (Pointing to Reg S-K at §229.301).

⁴² *Id.* at Item 11(h) (Pointing to Reg S-K at §229.303).

⁴³ *Id.*

⁴⁴ *Id.* at Item 9 (Pointing to Reg S-K at §229.202)

⁴⁵ Reg S-K at §229.202.

Item 9 suggests a system of disclosure that operates in parallel to the structural features and logic of traditional securities offerings.

Token economics and operations differ from those of capital stock and debt, warrants and rights, however, raising important questions as to whether all salient token characteristics would be required to be disclosed, even in a registered offering. On the one hand, token issuers would certainly have to disclose characteristics that closely resemble those in traditional capital stock or debt. This would presumably include any equity stakes in the project, as well as dividend, fixed income, or other expected payments to token holders. On the other hand, tokens often tout non-financial use rights not present in traditional capital stock or debt. As we mentioned above, tokens may grant access rights to future services, instead of to claims on payments or profits. The extent to which Form S-1 specifies disclosure of the precise functioning of such “utility tokens,” even where they are purchased as investments, appears limited.

Disclosure obligations under the Securities Act could also fail to necessitate that issuers provide information to investors about factors impacting the creation and supply of their tokens. One of the most relevant provisions, Item 15, requires disclosure of “all securities of the registrant sold by the registrant within the past three years which were not registered under the Securities Act.”⁴⁶ As a backwards-looking disclosure, this requirement would presumably cover pre-sale offerings and therefore the extant supply of tokens at the time of the ICO. Item 1 requires stating the “amount of securities offered.”⁴⁷ Thus along with Item 15, Item 1 would require disclosures of an ICO of pre-sale tokens and those introduced by the ICO. Still, Item 1’s mandate would only apply to the registered offering and would not address tokens issued in other ways, like those gifted to promoters or minted to fill the issuer’s treasury.⁴⁸

Yet perhaps the most challenging problem deals with an absence disclosures that address future token supply. Descriptions of the minting of the tokens, future vesting of tokens and any caps are particularly relevant to investors in an ICO because for the potential for dilution (or depreciation of value). While Item 6 directly addresses dilution, it appears only to apply “when common equity securities are being registered.”⁴⁹

Collectively, these omissions indicate that even in a registered offering, key drivers of token supply are, at a minimum, not explicitly required to be disclosed. And in theory, one could infer the specificity that disclosures run parallel to the structure and logic of traditional offerings, one can plausibly interpret the S-1 as not enquiring such disclosures. This is, as our work above would suggest, a highly inefficient outcome, and severely undermine the ability of investors to accurately price the tokens.

⁴⁶ Form S-1 at Item 15 (Pointing to Reg S-K at §229.701).

⁴⁷ *Id.* at Item 1 (Pointing to Reg S-K at §229.501).

⁴⁸ **Note to Draft:** Doesn’t the preceding quote specifically cover all securities, not just registered securities? Why would it not cover tokens “issued in other ways”?

⁴⁹ *Id.* at Item 6 (Pointing to Reg S-K at §229.506).

3. Blockchain Governance.

A critical feature of any blockchain project is its system of on-chain governance—that is, how decisions are made concerning a token’s blockchain that can alter the rights, structure or the value of the token. For an investor in token securities, this means understanding how decisions are made concerning everything from the modifiability of tokens to the upgrade and integration of blockchain software, and the ability to create new tokens that are incompatible with the issued token’s software but share many of its features (e.g., forks).

S-1s do, for their part, require disclosure of an issuer’s corporate governance.⁵⁰ Item 402 requires the disclosure of directors and key disclosures relating to the compensation of key management officials. Item 407 similarly requires the identification of independent directors, as well as each director that is a member of the compensation, nominating or audit committee that is not independent under such committee independence standards. Issuers are further required to disclose the total number of meetings of the board of directors (including regularly scheduled and special meetings) which were held during the last full fiscal year.

It is unclear, however, whether the S-1’s mandate for corporate governance covers governance issues relevant to the blockchain.⁵¹ Changes to a blockchain’s protocol are rarely a matter of a simple vote by holders of a virtual currency or a board of directors of a firm. Instead, changes are often the result of the interaction of several actors: the developers of the blockchain’s code, miners, and finally, holders of the cryptocurrency. In such circumstances, the blockchain memorializing token transactions has a core software repository that holds the code for the main implementation of its protocol.⁵² For code changes to go into effect, the nodes on a blockchain network need to individually update their software to include the updated code.⁵³ And miners and developers must come to some kind of consensus about the appropriateness of the change.

Because corporate governance focuses on the interaction between management and directors—and more fundamentally, the separation of ownership and control—it is unclear that the interplay of actors in blockchain decision making must be disclosed in S-1s. Notably, other items may necessitate bits and pieces of relevant on-chain governance disclosure, mitigating some of the gaps arising under Item 1(l). Item 9, for example, requires that “if the rights of holders of such stock may be modified otherwise than by a vote of a majority or more of the shares

⁵⁰ *Id.* at Item 11(l) (Pointing to Reg S-K at §229.407).

⁵¹ **Note to Draft:** Briefly explain on-chain governance.

⁵² <https://medium.com/digitalassetresearch/the-three-branches-of-blockchain-governance-75a29bf98880>

⁵³ <https://medium.com/digitalassetresearch/the-three-branches-of-blockchain-governance-75a29bf98880>

outstanding, voting as a class, so state and explain briefly.”⁵⁴ This clause could be helpful insofar as it clearly anticipates the disclosure of the modification of holder rights in ways other “than by a vote of a majority or more of the shares outstanding.” However, like many other S-1 provisions, these rights and voting disclosures are discussed in terms of capital stock, which likely does not apply to the tokens issued in an ICO. Whether similar rights would also need to be disclosed for non-equity tokens depends solely on the interpretation of the catch-all requirement for other security types: “a brief description (comparable to that required [for capital stock].)”⁵⁵ Similar limitations arise with Item 11(l), which also requires a description of the process by which security holders can send communications to the board of directors.⁵⁶ But for such disclosures to touch on relevant blockchain governance systems for utility tokens, an analogous entity must be found—and core developers and miners would surely not qualify.

4. Management and Technology Team.

The human capital involved in any start-up enterprise, and especially an ICO, is often essential. Ideas pitched in white papers (or prospectuses in registered offerings) must ultimately be acted on and realized in order for them to generate value for investors. It is thus critical that investors know who are the individuals connected to the most important aspects of transforming ideas into a real-world, workable technology solution.

The S-1 goes some way to making such disclosures. While on-chain governance may not be covered by Form S-1, governance and management of any existing corporate entity certainly is. As mentioned above, Item 11(l) requires disclosure of corporate governance.⁵⁷ Therefore, this Item would cover governance mechanisms that exist as part of any legally formed entity. This could include the formation of a board of directors, the appointment and removal of officers, or other matters of traditional corporate governance that might be spelled out in a corporate charter or bylaws.⁵⁸ Moreover, an S-1 requires that an issuer’s management team itself must be carefully detailed. Item 11(k) requires identification of directors and executive officers.⁵⁹ It also requires disclosure of the business experience of directors, executive officers and significant employees.⁶⁰ Directors and officers must further disclose involvement in legal proceedings, including criminal proceedings, as do promoters.⁶¹

⁵⁴ *Id.* at Item 9 (Pointing to Reg S-K at §229.202).

⁵⁵ See text accompanying *supra* note **Error! Bookmark not defined.**

⁵⁶ Form S-1 at Item 11(l) (Pointing to Reg S-K at §229.407).

⁵⁷ *Id.*

⁵⁸ *Id.* at Item 16(a) (pointing to Reg S-K at §229.601) (requiring that articles of incorporation and bylaws be appended as exhibits).

⁵⁹ *Id.* at Item 11(k) (pointing to Reg S-K at §229.401).

⁶⁰ *Id.*

⁶¹ *Id.*

In traditional IPOs, such disclosures would invariably cover the most important decision-makers in the firm. However, questions arise as to how sufficient they are for ICOs. In contrast to IPOs, officers and director might not be the most important, or even the most visible, members of an ICO team. Instead, the technologists who develop a token's nuts and bolts are instrumental to the project. Their names often appear as the author of a project's white paper, or are touted in the offering materials as experienced and esteemed advisors. In the language of *Howey* and its progeny, these non-director, non-officer technologists are often those people from whose efforts investors expect profits.⁶² Item 11(k) includes one catch-all that might yet bring in some of these technologists. Even those who do not hold those formal titles are required to be identified if they are significant employees "who make or are expected to make significant contributions to the business of the registrant."⁶³ Yet even here, the disclosures would presumably relate to their "business experience." The S-1 would not, however, require disclosures of technologists' training in the technological area at issue, or their experience in coding or computer engineering more generally.

5. Secondary Trading.

Investors in an ICO often expect to realize a return through price appreciation, so the ability to be able to sell the token on an exchange or otherwise on a liquid market in the future is very relevant to their investment decision. And because traditional securities, particularly equity securities, are often sold on secondary markets—namely stock exchanges—disclosure about exchange listing and trading of the security is well contemplated by Form S-1. Form S-1, for example, restricts the touting of potential liquidity of a security [in a prospectus], which often occurs in ICO marketing materials. Item 9 notes that "the document should not . . . convey the impression that the registrant may apply successfully for listing of the securities on an exchange . . ."⁶⁴ Complexities arise, however, in applying relevant disclosures given the work-in-progress status of cryptocurrency exchanges.

Item 1 requires disclosing "whether any national securities exchange or the Nasdaq Stock Market" lists the securities offered.⁶⁵ Only properly registered securities may be traded on a national securities exchange; and only entities registered as an exchange or a more basic form of an exchange, called an alternative trading system (or "ATS"), are permitted to serve as a venue for trading securities. But for regulatory, technological, and historical reasons that are outside the scope of this chapter, no ICO token has yet been listed or traded on a national securities exchange or on an ATS.

Instead, trading of ICO tokens currently falls to digital token marketplaces commonly referred to as cryptocurrency exchanges.

⁶² See generally *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946).

⁶³ Form S-1 at Item 11(k) (pointing to Reg S-K at §229.401).

⁶⁴ *Id.* at Item 9 (pointing to Reg S-K at §229.202).

⁶⁵ *Id.* at Item 1 (pointing to Reg S-K at §229.501).

As of this writing, no cryptocurrency exchanges are national securities exchanges. These exchanges may hold other licenses, such as licenses as money services businesses with the Financial Crimes Enforcement Network or, if they operate in New York State, a bitlicense with the New York Department of Financial Services. Many cryptocurrency exchanges are located outside the United States, some in jurisdictions that may not currently require licensing. No cryptocurrency exchange would, as a result, need to be described by this disclosure. While Item 8 states that “if the securities are to be offered on an exchange, indicate the exchange,”⁶⁶ this requirement has—given the nature of traditional securities regulation been read to mean offerings on regulated securities exchanges. In addition, this requirement may only apply to initial offerings on an exchange and not secondary trading.

Form S-1 correctly recognizes that future developments, both due to and exogenous to an issuer’s actions, can have profound effects on secondary market trading. Item 8 requires disclosure of passive market making and stabilization.⁶⁷ Item 11(h) requires identification of trends that may affect the liquidity of the registrant and “the course of action that the registrant has taken or proposes to take to remedy.”⁶⁸ As such, this requirement could be interpreted to mandate disclosures akin to fat tail events in capital markets where demand for an instrument evaporates, leaving investors with no means of existing their investment. Finally, Item 11(j) requires quantitative and qualitative disclosures about market risk.⁶⁹ To the extent exchange rate exposure is included as a market risk, parties must describe “how those exposures are managed . . . a discussion of the objectives, general strategies and instruments, if any, used to manage those exposures.”⁷⁰

Still, there are very unique risks associated with infrastructure provision in the ICO markets. As described in some detail by the New York Attorney General’s office in a recent report on virtual currency exchanges,⁷¹ market-maker duties, pricing and rebates are often ill-defined, and information regarding exchange policies on these topics is largely not publicly available. Similarly, the ability and efforts of virtual currency exchange to police manipulative trading, including trading that could affect the pricing of exchange-listed assets, vary significantly. In addition, these exchanges—unlike regulated securities exchanges—often do not have publicly available listing standards or other criteria to inform market participations about how and why certain tokens are made available for trading.

The current state of regulation of ICO token trading venues may soon be addressed by the SEC. However, these exchanges may continue to function differently from traditional securities exchanges and other securities trading venues. And the functioning of these exchanges may have material effects on the

⁶⁶ *Id.* at Item 8 (pointing to Reg S-K at §229.508).

⁶⁷ *Id.* at Item 8 (pointing to Reg S-K at §229.508).

⁶⁸ *Id.* at Item 11(h) (pointing to Reg S-K at §229.303).

⁶⁹ *Id.* at Item 11(j) (pointing to Reg S-K at §229.305).

⁷⁰ *Id.*

⁷¹ **Note to AL:** Cite to NY AG report.

pricing of ICO tokens listed and traded on these exchanges. [To add a few sentences about how existing S-1 requirements don't fit well.]

6. Risk Factors.

ICOs, which normally involve companies with little or no operating history and a nascent or unproven technological innovation, may present significant risks to investors. A key goal of disclosure, therefore, should be informing investors about the possible risks they assume when investing in an ICO, and their relative likelihood of occurrence. In this subsection, we address the extent to which the general “risks” disclosure forced by the S-1 addresses key ICO risks. Furthermore, an expansive disclosure in the risk section could remedy some of the holes highlighted in the previous subsections. However, on both counts, we find that the S-1 disclosure regime would likely fall short.

Disclosure of risks under the “full disclosure” model is forced by Item 3 of Form S-1, which requires discussion of “the most significant factors that make the offering speculative or risky,” but cautions against “present[ing] risks that could apply to any issuer or any offering.”⁷² Such risk factors include, but are not limited to: (1) a lack of operating history; (2) a lack of profitable operations in recent periods; (3) the financial position of the issuer; (4) the business or proposed business; or (5) the lack of a market for common equity securities.⁷³

The enumerated types of risks seem largely orthogonal to the kinds of risk disclosures relevant for an ICO, with the possible exception of Item 4. Items 1-3 appear somewhat redundant given that they will likely provide the same information as the financial statements required by the S-1: the ICO is likely a new venture with no operating history, past profits, or assets of any kind. Item 5 is inapplicable because tokens issued in an ICO do not typically represent common equity securities.

Still, the general mandate of “significant factors” seems on its face flexible enough to cover many relevant ICO risk disclosures. However, the application of this language may be a bit more limited than it would appear. Although there is “scant caselaw on Item 503,” when analyzed, “courts have generally found Item 503 violations to track Rule 10b-5 violations.”⁷⁴ This implies that “courts typically analyze the sufficiency of Item 503 disclosures with the familiar materiality standard.”⁷⁵ Therefore, if a risk's omission would not be serious enough to generate a 10(b) claim, then it can presumably be excluded from the prospectus. In one particularly on-point case, a court rejected a claim that offering documents were misleading because they “failed to disclose a ‘systematic weakness’ in the company's proprietary technology.”⁷⁶ In ruling, the court noted that the offering materials

⁷² *Id.* at Item 3 (pointing to Reg S-K at §229.503(c)).

⁷³ *Id.*

⁷⁴ *City of Roseville*, 814 F. Supp. 2d 395 (SDNY 2011), 426.

⁷⁵ *Id.*

⁷⁶ *Seow Lin v. Interactive Brokers Group, Inc.*, 574 F. Supp. 2d 408, 418 (SDNY 2008).

“candidly acknowledge that the proprietary technology could fail if marketplace behavior diverged from prediction,” and concluded that “no reasonable investor could disregard these warnings, despite the frequent and laudatory descriptions of the proprietary technology also included in the Offering Documents.”⁷⁷

Further, the explicit exclusion of risks that “could apply to any issuer or any offering,” could be particularly troubling in the ICO context. There doesn’t appear to be any caselaw that decides whether the “any offering” language should be construed to all types of offerings or more specifically to offerings of similar types of securities. But, if this language was read to prohibit disclosure of risks that could apply “to any ICO,” this could remove disclosure of many salient blockchain-specific but common risks. The risk that blockchain technology could fail, or be hacked, are huge and consequential for any token offering. This is a much greater problem than in the context of equity securities, for example, where the risks are generally more tied to the specific business or product being offered.

B. Scaled Disclosure Regimes

Registration under the Securities Act can be burdensome. It usually requires hiring an investment bank to underwrite the securities, as well as lawyers and auditors to help prepare S-K disclosures and financial statements. Such costs not uncommonly can delay a company’s access to capital markets, or block any possibility of raising public capital.

For these reasons, efforts have been introduced periodically to lighten the regulatory burden of disclosures for firms. The lynchpin for many of these efforts has been what can be described as a scaled disclosure regime based in part on the economic impact of the issuance—and the exposure of potential investors on an individualized basis. Because of their flexibility, they offer faster, more efficient means for raising capital, though offer even fewer informational protections to investors.

1. Crowdfunding/Rule 4(a)(6)

The most basic scaled disclosure regime can be found in the SEC’s crowdfunding provisions. Memorialized under Title III of the JOBS Act, the provisions exempt crowdfunded securities (e.g. small securities offerings conducted via online platforms) from a range of registration and disclosure requirements that would normally attach wherever stocks and bonds were sold by burgeoning companies online. The rules contain a number of important obligations, including a requirement that all transactions take place online through an SEC-registered intermediary, a limit as to the amount of money permissible to be raised

⁷⁷ *Id.* at 420.

(\$1,070,000) in a 12-month period and limitations on the amount individual investors can invest across all crowdfunding offerings. But for our immediate purposes, what is more relevant are the disclosure requirements, which, against the backdrop of these prudential limitations, are designed to facilitate a lighter touch disclosure regime.

The key disclosure document for crowdfunding is Form C.⁷⁸ In Form C, the instructions outline a range of modified disclosures inspired in part by public offerings including: information about officers, directors and owners of 20 percent or more of the issuer; a description of the issuer's business and the use of proceeds from the offering; the price to the public of the securities or the method for determining the price; the target offering amount and the deadline to reach the target offering amount; whether the issuer will accept investments in excess of the target offering amount; certain related-party transactions; and a discussion of the issuer's financial condition.

Under the SEC's crowdfunding provisions, issuers must also disclose a company's financial statements. Just what kind of disclosures depends on the circumstances.

- For issuers offering \$107,000 or less: Financial statements of the issuer and certain information from the issuer's federal income tax returns, both certified by the principal executive officer. If, however, financial statements of the issuer are available that have either been reviewed or audited by a public accountant that is independent of the issuer, the issuer must provide those financial statements instead and will not need to include the information reported on the federal income tax returns or the certification of the principal executive officer.
- Issuers offering more than \$107,000 but not more than \$535,000: Financial statements reviewed by a public accountant that is independent of the issuer. If, however, financial statements of the issuer are available that have been audited by a public accountant that is independent of the issuer, the issuer must provide those financial statements instead and will not need to include the reviewed financial statements.
- Issuers offering more than \$535,000: For first-time Regulation Crowdfunding issuers: Financial statements reviewed by a public accountant that is independent of the issuer, unless financial statements of the issuer are available that have been audited by an independent auditor. For issuers that have previously sold securities in reliance on Regulation Crowdfunding: Financial statements audited by a public accountant that is independent of the issuer.

⁷⁸ U.S. SEC. & EXCHANGE COMM'N, *Form C Under the Securities Act of 1933*, <https://www.sec.gov/files/formc.pdf>.

Collectively, the requirements represent a dramatic departure from the kinds of disclosure represented in an S-1. They are much less invasive than those found in the S-1 and enable faster, less legally complex and less costly offerings of securities.

They do, however, present more risks for ICO token investors from an informational standpoint. Financial disclosures are, as mentioned above, generally less important for start ups than for established companies doing IPOs given the former's limited histories. However, whatever financial information is available can be insightful. And while Form C also emphasizes financial disclosure like S-1s, it does so in a way that is substantially less comprehensive. Specifically, Form C requires only abbreviated (and, for smaller offerings, unaudited) financial statements for the two most recently completed periods.⁷⁹ Thus in the year prior to an offering, the year most likely in which financial information may be available, a lighter touch to quality control is taken as compared to an S-1.

Form C asks whether the issuer has an operating history⁸⁰ and requests a description of the issuers financial condition.⁸¹ It also demands a general description of the terms of the securities being offered⁸² and whether the securities have voting rights.⁸³ Still, it is unclear whether this would force disclosure beyond the ownership and control rights of traditional securities to the features associated with ICO tokens. As we have described, the rights given to token holders are far different than those given to holders of traditional equity securities.⁸⁴ It is unclear whether the simple language commanding an issuer to "describe the terms of the securities being offered," would be enough to force disclosure beyond the simple dividend and voting rights that traditionally answer such questions, to complex and nuanced discussions of token functionality.

Similarly, disclosures about corporate governance, which themselves might not extend to important on-chain governance topics, are even more limited in Form C.⁸⁵ The relevant item in Form C asks generally the "risks to purchasers associated with corporate actions," and lists four examples: additional issuances, issuer repurchases, a sale of the issuer or its assets, and transactions with related parties.⁸⁶ This disclosure requirement is far more general and less expansive than the equivalent corporate governance section required by Form S-1. The latter, in Item 11(l) noted above, specifically addresses issues of director independence, board meetings and committees, shareholder communications.⁸⁷ It also requires

⁷⁹ Form C at page 14 (Q&A 29).

⁸⁰ *Id.* at 13 (Q&A 27).

⁸¹ *Id.* (Q&A 28).

⁸² *Id.* at 10 (Q&A 13).

⁸³ *Id.* (Q&A 14); *Id.* (Q&A 15).

⁸⁴ See Section II.A, *supra*.

⁸⁵ Compare *Id.* at 12 (Q&A 23) (asking how corporate actions might present risks to security purchasers) with Form S-1 at Item 11(l) (Pointing to Reg S-K at §229.407; requiring extensive disclosure of corporate governance).

⁸⁶ Form C at 12 (Q&A 23).

⁸⁷ See text and source accompanying *supra* note **Error! Bookmark not defined.**

attachment of relevant governance documents like the certificate of incorporation and bylaws.⁸⁸

Like Form S-1, Form C limits targets officers and directors in disclosures about a firm's key leadership. The likelihood, however, that technologists would be covered is less than even that in an S-1. An additional demand that disclosures be made for "any persons occupying a similar status or performing a similar function," could arguable pull in technologists.⁸⁹ However, while technologists may play high profile roles in white papers that serve a marketing function, their primary significance is as engineers and coders. Although this will ultimately be a fact-based inquiry, it is difficult to identify their work generically as "performing a similar function" to that of a CEO.

Finally, Form C does not require a discussion of exchange listings. As such, in contrast to the S-1, there is no legal basis for mandating a discussion of a token's ultimate liquidity and the market for the token.

Still, it must be noted that there are several areas where Form C, perhaps due to its more recent creation and the unique features of crowdfunding, arguably provides more suitable ICO disclosures than Form S-1, not less. For example, required disclosure about the terms of the offering is more representative of how an ICO operates. A typical ICO raises an amount of funding that is not perfectly determined *ex ante*, but rather that falls within certain pre-specified limits. ICOs may cease when the amount raised has hit a set "cap" on fundraising, or shortly thereafter, and the price may vary throughout the offering period. Form C contemplates such flexible offerings, and asks issuers to disclose a range of offering amounts by asking explicitly for both the target and the maximum offering amount, or cap, the "deadline to reach the target offering amount," and the "method for determining price."⁹⁰ By contrast, Form S-1 speaks more narrowly of the "amount of securities offered," and the "offering price."⁹¹ While some allowances are made in the S-1 to disclose offerings on a "minimum/maximum" basis, or a method for determining price (in the event stating a price is impracticable),⁹² Form C appears to more explicitly contemplate, and more clearly require disclosure of, the flexible pricing, timeline, and issuance amounts that characterize a typical ICO.

Reg A+

⁸⁸ See text accompanying *supra* note 58.

⁸⁹ Form C at 6 (Q&A 5).

⁹⁰ *Id.* at 1.

⁹¹ Form S-1 at Item 1 (pointing to Reg S-K at §229.501).

⁹² *Id.*

Another increasingly important example of scaled disclosure is Regulation A+. A more attractive outlet for offerings as compared to the original Regulation A, Regulation A+, like crowdfunding, was implemented under the JOBS Act to help facilitate capital formation. It offers much more potent tools for fundraises by establishing two tiers of investment: Tier 1, which permits offerings of up to \$20 million in a 12-month period; and Tier 2, which permits offerings of up to \$50 million in a 12-month period. As in crowdfunded projects, limitations are placed on the amount a non-accredited investor can raise for Tier 2 offerings.

The basic disclosure document for Regulation A+ is Form 1-A, which is intended to be a scaled-down version of an S-1. As such, it includes requirements necessitating a number of disclosures similar to those in public offerings:

- Risk Factors
- Dilution
- Plan of Distribution and Selling Security Holders
- Use of Proceeds
- Description of Business
- MD&A
- Compensation for Executives
- Security Ownership of Management and Other Security Holders
- Securities being Offered

The Reg A+ disclosure regime is, as compared to that in crowdfunding, a more fulsome and rigorous application of mandatory disclosure and is routinely categorized as a “mini-IPO.” It is, however, less expansive than an S-1. Because Form 1-A is largely a subset of Form S-1, it therefore falls short as an ICO disclosure tool in many of the same ways as Form S-1.

Like Form S-1 and Form C, Form 1-A emphasizes financial disclosures, which, for the reasons articulated above, may not be particularly relevant in the ICO context. This disclosure, furthermore, is, like the Form C, less comprehensive than Form S-1, requiring only abbreviated and sometimes non-audited financial statements⁹³ along with a more general discussion of the registrant’s financial condition.⁹⁴ Likewise, Form 1-A requires a discussion of the rights given by the offered security,⁹⁵ but these disclosure items are more tailored to the ownership and control rights of traditional securities than the features associated with ICO tokens. Again, disclosures about corporate governance might not extend to important on-chain governance topics and Form 1-A’s disclosures are even more limited.⁹⁶

⁹³ Form 1-A at Item 1; *Id.* at Circular Item 9.

⁹⁴ *Id.* at Circular Item 9.

⁹⁵ *Id.* at Item 4; *Id.* at Circular Item 14; *Id.* at Circular Item 17.

⁹⁶ *Compare Id.* at Part III Item 17 (requiring charter and bylaws to be attached as exhibits) with Form S-1 at Item 11(l) (Pointing to Reg S-K at §229.407; requiring extensive disclosure of corporate governance beyond provision of governing documents).

Like Form S-1, Form 1-A limits disclosure of relevant team member information primarily to officers and directors. Still, Form 1-A also includes a carve out for “significant employees,” who are “expected to make significant contributions to the business,” mirroring the language of the S-1.⁹⁷ Further, Form 1-A has similar holes in disclosure of secondary market trading that will occur in the ICO tokens.⁹⁸ Finally, unlike Form C, Form 1-A does not add to the Form S-1 framework any disclosure items that may be especially relevant to ICOs, such as any targets or caps on the sale.

2. Private Offerings

As the far end of the scaled disclosure regime are private offerings. In contrast to public offerings, where securities are sold to retail investors, private offerings are available only to accredited or sophisticated investors. Typically, private placements are conducted via Regulation D’s rules 505 and 506 and then resold via qualified institutional buyers under Rule 144A.

Private placement issuers have much more flexibility with respect to disclosure than their public offering, Reg A+ and even crowdfunding counterparts. Non-accredited investors must be furnished with a Regulation A circular if the issuer is a nonreporting company; only the balance sheet need be audited. Reporting companies must provide a copy of their annual report, exchange act filings and a brief description of the offering. Meanwhile, there are no disclosure requirements in Rule 505 and 506 offerings made exclusively to accredited investors. Although issuers will often circulate an offering memorandum that tracks disclosures required under the Securities Act, it is industry practice, not SEC regulation, that dictates the memorandum’s contents.

With this end run around full disclosure available and increasingly relied upon in ICO token markets, it is worth reflecting on the fact that disclosures in private offerings presume investor are capable of fending for themselves. Either through their income or wealth, or by dint of their access to the same information available in an S-1 and sophistication, participants in private markets are deemed to operate on a level playing field with issuers and, as seen above, securities laws do not necessitate registration or SEC disclosures. It is, however, not entirely clear that wealth or income, especially at the now modest thresholds at which one qualifies as an accredited investor, are sufficient to ensure either access or to relevant information or the ability to bargain for it.⁹⁹ Moreover, even where investors are generally sophisticated about business and financial matters, they are often not

⁹⁷ Form 1-A at Circular Item 10. See also text accompanying *supra* note **Error! Bookmark not defined.** By contrast, note that this mirrored language is not present in Form C, which instead has a carve out for persons “occupying a similar status or performing a similar function.” See *supra* note **Error! Bookmark not defined.**

⁹⁸ **Note To Draft [BC].**

⁹⁹ [note how from inflation-adjusted standpoint accredited investor threshold is low]

technically sophisticated enough to be able to make investment decisions in this novel context of the ICO.

VI. BEYOND DISCLOSURE: “PLAIN ENGLISH” REQUIREMENTS AND THIRD-PARTY VALIDATORS

Our analysis above highlights the fact that disclosure, for its own sake, is positive but needs tailoring, as U.S. securities laws have long acknowledged, to the facts and circumstances of a financial product. From this perspective, we see that the mere designation of many ICOs as securities does not immediately place them into a secure and transparent regulatory environment. S-1s, for their part, neglect key aspects of blockchain governance and token burning and would ultimately depend on risk factors or “regulatory risks” to highlight custodial and transfer risks. Even then, these disclosures concerning key parts of the infrastructure might be considered regulatory and it is unclear to what degree risks relating to both cybersecurity and also operational risks relating to ICO token infrastructures would need to be disclosed.

Of course, disclosure is, in itself, no panacea, even assuming that “full” or “scaled” disclosure regimes are ultimately revised in ways that address their current deficiencies. For disclosures to be meaningful, as well as incorporated into ICO pricing and valuations, two conditions must met: (1) disclosures must be read and understood by investors, and (2) third-party validators must be available to scrutinize disclosures to ensure their accuracy. The Securities Act does not always provide clear pathways for either, however, when applied to ICOs.

As to the first condition, we saw above that disclosures made in ICO white papers are often hyperbolic and also highly technical.¹⁰⁰ Developers will, when providing disclosures, routinely delve into highly technical details concerning their projects, for instance citing to code, either directly in the white paper or on the relevant GitHub repository, while offering few clarifying details and statements about such disclosures.¹⁰¹ Even those with technical backgrounds often struggle to make sense of such disclosures. Accordingly, retail investors with limited sophistication are also left with little actionable information.

Pulling ICOs into the existing securities law perimeter responds in part to the problem. On the one hand, the SEC has advanced “Plain English” disclosure rules designed to reduce the jargon and difficulty often associated with reading registration statements.¹⁰² The most stringent requirements in Rule 421(d) articulate definitive prohibitions against “legal jargon” and “technical terms” in the summary, risk factors and cover and back pages of a prospectus. Meanwhile, under

¹⁰⁰ See page [] and *infra*.

¹⁰¹ *Id.*

¹⁰² Cite to SEC style manual.

Rule 421(b), the Commission has outlined a number of norms such as “short sentences whenever possible,” “bullet points” and “descriptive headers” while advising that prospectus drafters avoid “legal and highly technical business terms,” “legalistic, overly complex presentations,” “vague boilerplate,” “excerpts from legal documents” and “repetition.” As such, the Plain English rules speak to the overly complex business narratives and communications that have traditionally made securities offerings indecipherable for everyday investors.

Whether the rules will make communications more understandable for technological start-ups is questionable, and in some instances they could exacerbate complexity, as opposed to improve clarity. Take, for example, the advisory note that prospectus drafters avoid “relying on glossaries and defined terms.” Under normal circumstances, this kind of guidance would help investors avoid the need to sift through disclosures in ways that added to the time and burden of reading disclosures. But for the current state of ICOs, these steps could be extremely useful. Because many ICO terms have multiple or unclear meanings, whether it be “decentralization,” “utility” and even “token,” defining terms and using the term in the document could prove helpful and perhaps even vital.

At the same time, some of the most rigorous requirements for clarity and simplicity should be extended beyond just the summary and cover and back pages to include parts of the registration statement describing the token itself. Here token’s financial and nonfinancial features, along with minting and burning, should be described in a clear manner, understandable to a lay audience. To supplement these disclosures, the code itself should be archived in a technical format, such as a GitHub repository, for outside scrutiny and evaluation.

This brings us to the second critical problem highlighted above: the current absence of necessary third-party validators to assist in ensuring the quality of disclosures made by developers in an ICO. Unlike typical securities offerings, where a stable of long-established gatekeepers like auditors and accountants are available to provide quality control for the most important traditional disclosures, financial statements, the ICO ecosystem enjoys comparatively few gatekeepers to monitor the most important disclosures made in ICO white papers—namely those concerning the underlying technology.¹⁰³ In short, there are no systems or entities in place to require the “review of code by experts to determine if the code is secure such as whether there are any existing vulnerabilities, possibilities for future bugs or any errors in coding that could expose users.”

This is a problem with real consequences. Recent academic studies have highlighted the fact that retail investors do not read the code presented in white papers or the related GitHub repositories, which given the relative lack of technical sophistication among retail and accredited investors is not altogether surprising.¹⁰⁴

¹⁰³ For an overview of auditors and the New Deal framers of the Securities Acts, see http://3197d6d14b5f19f2f440-5e13d29c4c016cf96cbbfd197c579b45.r81.cf1.rackcdn.com/collection/papers/1970/1978_0301_WiesenIntend.pdf.

¹⁰⁴ Coin Capitalism, [].

This is not just an academic issue. Source code flaws in certain digital assets or in the smart contracts that support them have been exposed and exploited, and in the process, have either exposed users' personal information, resulted in the theft of users' digital assets or both.¹⁰⁵ Additionally, such flaws in or exploitations of the source code have sometimes, albeit rarely, allowed a malicious actor to take or create money in contravention of known network rules. In other cases, such errors or defects have been publicly found and corrected prior to exploitation.

Accordingly, if smart contracts are used in a token sale, there should be some disclosure around who audited such contracts. Relatedly, ICO promoters should disclose the procedures in place to secure the token sale. For example, such promoters should disclose not only how users obtain tokens, but also what specific security procedures are in place to prevent common attack vectors such as (1) denial-of-service or distributed denial-of-service attacks,¹⁰⁶ (2) social engineering (e.g., phishing, spoofing) attacks,¹⁰⁷ (3) chat channel spamming, (4) fake social media accounts or (5) man-in-the-middle attacks.¹⁰⁸ Further, ICO promoters, when relevant, should provide detailed disclosures regarding their procedures for securing and storing private keys.

¹⁰⁵ SEE, E.G., IVICA NIKOLIĆ, ET AL., FINDING THE GREEDY, PRODIGAL, AND SUICIDAL CONTRACTS AT SCALE (2018), <https://arxiv.org/abs/1802.06038>.

¹⁰⁶ A denial-of-service attack, or DoS attack, is a cyber-attack whereby the attacker attempts to cause a machine or network resource to be rendered unavailable to its intended users. The attacker does this by disrupting, either temporarily or indefinitely, the services of a host connected to the Internet. Such attacks are typically accomplished by flooding the targeted machine or network resource with superfluous requests in order to overload systems, thereby preventing some or all legitimate requests from being fulfilled. A distributed denial-of-service attack, or DDoS attack, is largely the same, except that the incoming traffic directed at the target originates from many different sources, effectively making it impossible to stop the attack by simply blocking a single source. Such attacks commonly target unsuspecting ICO promoters, primarily as a smokescreen for more dangerous security breaches. For example, a DoS attacker may also attempt to access the control panel of the website through an attack on the site administrator in order to change the wallet address associated with the token sale to one controlled by the attacker. Or, a DoS attacker may combine this with a social engineering attack in order to direct ICO purchasers to a fake website for the token sale controlled by the attacker.

¹⁰⁷ Social engineering attacks refer generally to any type of psychological manipulation that causes the target to perform certain actions or divulge confidential information to the benefit of the attacker. One such type of attack is a phishing attack, in which the attacker fraudulently attempts to obtain sensitive information (e.g., login credentials, private keys) from the target. Phishing may be carried out through email spoofing or through instant messaging (e.g., using a mobile chat application or social media platform). In February 2018, it was reported that the ICO for Bee Token was the target of a phishing attack, whereby the attackers acquired an email address list of investors who had indicated interest in the token sale and sent fraudulent emails to such investors using email addresses with the domain "@thebeetoken.com" with instructions to send Ether to wallet addresses controlled by the attackers, rather than the ICO promoters. The attackers made off with roughly \$1 million in Ether in just over 25 hours.

¹⁰⁸ A man-in-the-middle attack is an attack where the attacker fraudulently alters the communication between two parties who believe they are communicating directly with each other. For example, an attacker might alter data on a trusted website by accessing an unsecured, or poorly secured, WiFi router (e.g., a public WiFi hotspot) in order to serve targets a fraudulent website designed to mimic an ICO website.

These shortcomings would naturally suggest that bringing ICOs more expressly within the perimeter of U.S. securities laws, where key financial data are reviewed by auditors, could help address what is a considerable market failure. But here too, the mere designation of ICOs as securities would not, in itself, serve as a silver bullet to the absence of auditors for technology- and code-related disclosures. Notably, U.S. securities law anticipates relatively mature industrial companies as issuers and as such requires the involvement of auditors only in the context of the review of a company's financial statements. An ICO issuer's representations relating to the data infrastructure and code driving its technology, something entirely unanticipated as a key disclosure under the New Deal framework of the Securities Act, would not be subject to such a requirement. Thus, even if ICO tokens were designated as securities, the Securities Act not impose rules requiring the auditing of disclosures relating to the blockchain code referenced in ICOs.

Additionally, even if rules were introduced subjecting code and technological disclosures to an audit by third parties, the firms undertaking validation would not necessarily be subject to any operational, professional or business conduct standards. Third-party validators are mostly engineering and technology firms, not financial intermediaries. Thus they would only be subject to direct federal regulation if their activities were deemed to constitute investment advising (which would subject them to the 1940 Investment Advisers Act). Yet even here, regulation as investment advisers would not involve the substantive certification or qualification of auditors. Instead, primary obligations of third-party validators would include disclosing their clients, business practices involving potential conflicts with clients and "any disciplinary events of the adviser or its employee." Operational guidelines would remain essentially voluntary or left for industry norms to potentially develop.

VII. CONCLUSION

In this chapter, we have sought to systematically examine the needs of investors in ICOs, and then examine how extant regulatory disclosure requirements speak to them. In doing so, the chapter carefully problematizes what are all-too-often simple policy prescriptions offered in light of the increasingly high profile and prominent role played by ICO tokens in capital markets and the associated risks posed to investors.

Among this chapter's insights is the observation that merely designating ICO tokens as "securities" will not necessarily improve the disclosures made available to prospective investors such that they will be able to make informed investment decisions. The disclosure regime embodied in the Securities Act is one based on pricing assumptions that, though well suited to the industrial age, do not map neatly onto the developing field of digital assets. As a result, reliance on Securities Act

disclosure forms would prove not only potentially burdensome, but also inadequate for investor protection.

Furthermore, even if Securities Act disclosures were revised to demand more tailored information concerning those features of ICOs most relevant for pricing, macro-level reforms would also be needed to ensure the accessibility of those disclosures to retail investors. Moreover, a system of third-party validation for blockchain code would be needed, along with a supporting regulatory infrastructure for auditors, to ensure the quality of disclosures made in a revamped regulatory ecosystem.

Collectively, these observations suggest that achieving an optimal disclosure regime for ICO tokens necessitates more than one-shot policymaking and rule-writing. Designating ICO tokens as “securities” may reflect sound applications of existing policy or Supreme Court case law, but it does not, on its own, constitute the extent of work required to integrate ICO tokens into an operational and efficient regulatory regime. Instead, such decisions comprise, at best, the initiation of a long-term process of regulatory upgrades that will be needed to fine tune protections for the retail public and preserve the efficiency of capital formation in global financial markets.

Disclosure Item	Form S-1	Form 1-A ¹	Form C ²
The Offering			
<p>What is it?</p> <ul style="list-style-type: none"> • What exactly are you participating in with this token or coin? <ul style="list-style-type: none"> ○ What right(s) does the token confer? ○ A portion of earnings or equity in a project? ○ A current or future utility? ○ A donation to a non-profit foundation? • Potential for dilution <ul style="list-style-type: none"> ○ See below (Insider Dealings) 	<p>Item 4 [S-K 504] requires stating “the principal purpose for which the net proceeds to the registrant from the securities to be offered are intended to be used,” but this might not be sufficient to explain what the purchaser of the token gets in return.</p> <p>Item 9 [S-K 202] requires a description of the securities to be registered. For types of securities not explicitly contemplated, it requires “a brief description (comparable to that required [for capital stock, debt, warrants and rights]) of the rights evidenced thereby.” This would certainly cover dividend and ownership rights, etc. Still, it is likely not sufficient to cover non-financial (use) rights of tokens.</p> <p>Item 6 [S-K 506] directly addresses dilution, but appears</p>	<p>Item 4 asks the issuer to check a box for the type of security offered. This will allow the issuer to affirmatively or negatively state whether the token contains a common equity or debt interest, but beyond that the “other” box only includes a brief line to describe. The “use” could be stated there but need not be.</p> <p>Circular Item 6 requires a statement of “the principal purposes for which the net proceeds to the issuer from the securities to be offered are intended to be used,” but this might not be sufficient to explain what the purchaser of the token gets in return.</p> <p>Circular Item 14 requires an outline of the presence of any of a list of enumerated rights, including dividends, voting, and</p>	<p>The cover page has a line for “type of security offered,” but does not specify the information that must be provided. Presumably, “non-equity token” might be sufficient.</p> <p>Q&A 9 asks bluntly “what is the purpose of this offering.”</p> <p>Q&A 13 asks for a description of the terms of the securities being offered.</p> <p>Q&A 14 asks whether the securities have voting rights, and Q&A 15 asks about limitations on voting rights.</p>

¹ Note that Form 1-A provides alternative formats for Part II of its disclosure requirements. The Form 1-A column in this table focuses on the disclosure required under the most straightforward option: following the requirements in Part II (the offering circular) of Form 1-A itself. Alternatively, issuers could instead follow Part I of the Form S-1 (the requirements of which are included in this sheet) or Part I of Form S-11.

² The requirements of Form C are only a cover page and three items. The remainder of the form is an optional “Question and Answer Format” that “an issuer may provide.” This chart includes disclosure items present in the question and answer section, but note them accordingly as Q&A.

Disclosure Item	Form S-1	Form 1-A ¹	Form C ²
	<p>only to apply “when common equity securities are being registered.”</p>	<p>“any rights of holders that may be modified otherwise than a vote of a majority.” Of course, this is likely insufficient to require disclosure of other token-specific rights that do not fall within these traditional financial categories.</p> <p>Part III Item 17 requires filing as an exhibit “all instruments defining the rights of any holder of the issuer’s securities.”</p> <p>Circular Item 4 specifically addresses dilution, requiring a comparison of the public contribution and the average cash contribution of officers, directors, promoters, and affiliated persons if there is a material disparity.</p>	
<p>Terms and conditions</p> <ul style="list-style-type: none"> • What is the fundraising cap? • What, if any, restrictions are there on the sale? 	<p>Item 1 [S-K 501] requires stating the “amount of securities offered,” and the “offering price,” which together could impute a fundraising cap. Still, this would not be sufficient to explain the functioning of how any coded cap operates.</p> <p>Item 8 [S-K 508] requires a brief outline of “the plan of distribution of any securities to be registered that are offered otherwise than</p>	<p>Item 4 requires disclosing the number of securities offered and the price.</p> <p>Circular Item 19(j) permits the price and maximum number of securities to be listed within ranges.</p> <p>Circular Item 5 requires a brief outline of “the pan of distribution of any securities being issued . . . otherwise than through</p>	<p>The cover page requires listing the “target number of securities to be offered,” the price “or the method for determining price,” the “target offering amount,” and whether and how oversubscriptions will be allocate. Notably, it also requests the “maximum offering amount,” and the “deadline to reach the target offering amount,” which seem better suited for how ICOs actually function that even the S-1 disclosure. Note that there is a</p>

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	through the underwriters.”	underwriters.” Circular Item 5 requires description of any arrangements “for the return of funds to subscribers if all the securities to be offered are not sold,” to “limit or restrict the sale of other securities of the same class,” or to “stabilize the market.”	bold statement in the form that the offering will be cancelled if the target offering amount is not met. Q&A 12 notes that investors may cancel an investment until 48 hours prior to the deadline identified in the offering materials.
Marketing and Insider Dealing Disclosures			
<p>Promotional activity</p> <ul style="list-style-type: none"> Describe the current and future promotional activity including marketing plans for the token sale, token giveaway information, beneficiaries of the giveaways, and more. Disclosure of celebrity and “influencer” endorsements. 	<p>Item 9 [S-K 508] requires identification of “any finder and, if applicable, describe the nature of any material relationship between such finders and the registrant.”</p> <p>Item 10 [S-K 509] requires disclosure of the interests of named experts, though this appears to be limited to those who “prepared or certified any part [of the registration statement] or a certified a report or valuation for use in connection.”</p> <p>Item 11(k) [S-K 401] requires registrants not previously subject to reporting requirements to disclose involvement of promoters in certain legal proceedings (e.g. criminal</p>	<p>Item 4 requires disclosure of the fees in connection with the offering, including those by “promoters” and asks the name of the “service provider.”</p> <p>Item 6 asks for disclosure of unregistered securities issued in the previous year, which could include giveaways and payments to endorsers.</p>	<p>Q&A 17 asks what other securities of the issuer are outstanding, which could provide insight into token giveaways.</p> <p>Q&A 25 asks about exempt offerings within the last three years, which could provide insight into token giveaways.</p> <p>Q&A 30 asks about convictions of promoters.</p>

Disclosure Item	Form S-1	Form 1-A ¹	Form C ²
	<p>convictions).</p> <p>Item 11(n) [S-K 404] requires disclosure of “the names of the promoter(s), the nature and amount of anything of value . . . received or to be received . . .”</p> <p>Item 13 [S-K 511] requires a “reasonably itemized statement of all expenses in connection with the issuance,” which could perhaps be stretched to cover token giveaways, and payments for endorsements and white paper translations, etc.</p> <p>Item 15 [S-K 701] requires disclosure of expenses incurred in connection with the issuance and distribution, including “finders’ fees,” and indications whether these were to insiders “and their associates,” or to those owning ten percent or more.</p>		
<p>Token reserves</p> <ul style="list-style-type: none"> • Founder and employee tokens (<i>e.g.</i>, reserved for incentive compensation) • Company and ecosystem (or foundation) tokens (<i>e.g.</i>, reserved for 	<p>Item 10 [S-K 509] requires disclosure of the interests of named experts, though this appears to be limited to those who “prepared or certified any part [of the registration statement] or a certified a report or valuation for use in connection.”</p>	<p>Circular Item 6 requires disclosure of whether “the proceeds will be used to compensate or otherwise make payments to officers or directors.”</p> <p>Circular Item 11 requires disclosure of the compensation of each of the three highest paid</p>	<p>Q&A 6 asks for the name of each person who is the beneficial owner of 20 percent or more of the issuer’s “outstanding voting equity securities.” To the extent the tokens issued are non-equity, this would seemingly exclude disclosure of majority holders of</p>

Disclosure Item	Form S-1	Form 1-A ¹	Form C ²
<p>working capital and incentivizing new users)</p> <ul style="list-style-type: none"> • Advisory tokens (<i>e.g.</i>, reserved for advisors) <ul style="list-style-type: none"> ○ Disclosure of advisors 	<p>Item 11(d) [S-K 201] requires disclosure of “securities authorized for issuance under equity compensation plans,” but this appears only to apply “where common equity securities are being offered.” Therefore, there may be a hole where token compensation plans need not be disclosed if the tokens are not considered “common equity.”</p> <p>Item 11(l) [S-K 402] requires disclosure of compensation of executive officers and directors. But, in-kind compensation by tokens might be difficult to value pre-sale. Also, many involved (founders, employees, advisors) might not qualify and executive officers to trigger the reporting requirements.</p> <p>Item 11(m) [S-K 403] requires disclosure of the portion of outstanding shares owned by the directors and executive officers.</p>	<p>persons who were executive officers or directors. Still, it is unclear whether founder and employee tokens would fall within “compensation,” as even “other compensation” must be denominated in dollars. A note to item 11 states that compensation “paid otherwise than in cash . . . state in a note to the table the nature and amount thereof.”</p> <p>Circular Item 12 requires disclosure of any holder who beneficially owns more than 10% of the issuer’s voting securities. Note that this might present a problem for tokens with no voting rights.</p> <p>Circular Item 13 requires disclosure of any experts who prepared or certified the offering statement if they were employed on a contingent basis or have a material interest in the issuer.</p>	<p>tokens.</p>
<p>Presale discounts and caps</p> <ul style="list-style-type: none"> • Disclosure of the exact amounts paid per token by every presale purchaser 	<p>Item 6 [S-K 506] requires disclosure where “there is substantial disparity between the public offering price and the effective cash cost to officers, directors, and promoters,” but appears only to apply “when</p>	<p>Item 6 asks for disclosure of unregistered securities issued in the previous year, along with the “aggregate consideration for which the securities were issued.”</p> <p>Circular Item 12 requires</p>	<p>Q&A 17 asks what other securities of the issuer are outstanding, which could provide insight into token giveaways.</p> <p>Q&A 25 asks about exempt offerings within the last three</p>

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<ul style="list-style-type: none"> ○ Not necessarily entity-level disclosure ○ Price and quantity disclosure 	<p>common equity securities are being registered.”</p> <p>Item 15 [S-K 701] requires disclosure for “all securities of the registrant sold by the registrant within the past three years which were not registered under the Securities Act.” This would presumably cover pre-sale offerings performed pursuant to a registration exemption.</p>	<p>disclosure of any holder who beneficially owns more than 10% of the issuer’s voting securities. Note that this might present a problem for tokens with no voting rights.</p>	<p>years.</p>
Economics and Financial Disclosures			
<p>Supply</p> <ul style="list-style-type: none"> • Is supply fixed or limited? <ul style="list-style-type: none"> ○ Discuss future issuance plans or token burning schemes designed to influence the price of the currency. ○ Anticipated fully-diluted supply curve • How many coins or tokens will be issued and how? <ul style="list-style-type: none"> ○ Who can change this? (see below, 	<p>Item 1 [501 S-K] requires stating the “amount of securities offered.” Still, this would only apply to the registered offering and would not address tokens issued in other ways.</p> <p>Item 7 [S-K 507] provides that “the amount and (if one percent or more) the percentage of the class to be owned by such security holder after completion of the offering,” when securities “are to be offered for the account of security holders.”</p> <p>Item 8 [S-K 508] requires disclosure of passive market making and stabilization.</p>	<p>Item 1 requires disclosure of outstanding securities. However, the only boxes provided are for common and preferred equity and debt, so outstanding tokens may not be included.</p> <p>Item 4 asks for a more general number of “securities of that class already outstanding.”</p> <p>Item 6 asks for disclosure of unregistered securities issued in the previous year.</p> <p>Circular Item 5 requires a description of any arrangement to stabilize the market.</p>	<p>The cover page requires listing the “target number of securities to be offered,” and the “maximum offering amount.” Still, this only covers tokens generated in the sale, and not supply management thereafter.</p> <p>Q&A 17 asks what other securities of the issuer are outstanding, which could provide insight into token giveaways. Q&A 18 and 19 discuss differences between securities, and 20 discusses how the rights of principal shareholders might affect new holders.</p>

Disclosure Item	Form S-1	Form 1-A ¹	Form C ²
<p style="text-align: center;">Governance)</p> <ul style="list-style-type: none"> Who controls large amounts of coins? 	<p>Item 11(m) [S-K 403] requires disclosure of any person “who is known to the registrant to be the beneficial owner of more than five percent of any class of the registrant’s voting securities,” as well as any arrangements known that could change control in the future. This may not apply to tokens without voting rights. Further, determining unique beneficial owners might be more difficult if they use multiple blockchain wallet addresses.</p>		
<p>Exchange Liquidity</p> <ul style="list-style-type: none"> Which exchanges will list the token after the ICO is complete and when? 	<p>Item 1 [S-K 501] requires disclosing “whether any national securities exchange or the Nasdaq Stock Market” lists the securities offered. It is unclear whether cryptocurrency exchanges would be covered.</p> <p>Item 8 [S-K 508] states that “if the securities are to be offered on an exchange, indicate the exchange.” This is broader than “national securities exchange” in Item 1, but only applies to initial offerings on an exchange and not secondary trading.</p> <p>Item 9 [S-K 202] notes that “the document should not . . . convey the impression that the registrant</p>		

Disclosure Item	Form S-1	Form 1-A ¹	Form C ²
	may apply successfully for listing of the securities on an exchange . . .”		
<p>Token lockup period and vesting schedules</p> <ul style="list-style-type: none"> • Disclose the token lockup period and vesting schedules for any investors, as well as the team and insiders described above. • Plan for distributing locked up tokens (<i>e.g.</i>, time frames, amounts) <ul style="list-style-type: none"> ○ Examples: <ul style="list-style-type: none"> periodic release, one-time release, governed by smart contract, token vesting, milestone based. • What mechanism assures that proceeds flow according to the distribution budget? 	<p>Item 6 [S-K 506] directly addresses dilution, but appears only to apply “when common equity securities are being registered.”</p> <p>Item 4 [S-K 504] requires stating “the principal purpose for which the net proceeds to the registrant from the securities to be offered are intended to be used and the approximate amount intended to be used for each such purpose,” but does not necessarily require disclosure of the mechanisms that assure this.</p> <p>Item 15 [S-K 701] requires that after the effective registration date, the issuer will report “the use of proceeds on its first periodic report.”</p>	<p>Circular Item 6 requires a statement of “the principal purposes for which the net proceeds to the issuer from the securities to be offered are intended to be used,” but does not necessarily require disclosure of the mechanisms that assure this.</p> <p>Part III Item 17 requires disclosure of “any management contract or any compensatory plan . . . deemed material,” except those available to employees generally and provides the same method of allocation between management and non-management. This might include plans for deferred compensation and lockup of tokens.</p>	
<p>Pre-ICO reporting</p> <ul style="list-style-type: none"> • Pro forma financials and projections 	<p>Item 11(a) [S-K 101] requires a description of “the registrant’s plan of operation for the remainder of the fiscal year,” and further descriptions of the cash budget for the next six months. It</p>	<p>Item 1 requires completion of an abbreviated income statement and balance sheet for the most recent fiscal period, and the amount of any outstanding securities.</p>	<p>The cover page requires a barebones listing of several core balance sheet and income statement items for the most recent fiscal year and one prior.</p>

Disclosure Item	Form S-1	Form 1-A ¹	Form C ²
	<p>also requires substantial disclosure about anticipated material acquisitions, R&D, and financial information about each segment.</p> <p>Item 11(e) requires full financial statements to be prepared that meet the requirements of Reg S-X, with modifications for smaller reporting companies. Items 11(f) and (g) subsequently require selected financial data (5 years per S-K 301) and supplementary financial information (quarterly for the last 2 years per S-K 302).</p> <p>Item 11(h) [S-K 303] requires a discussion of the registrant’s financial condition, including “such other information that the registrant believes to be necessary to an understanding of its financial condition.” This includes discussion of “material trends” and how they will impact the business.</p>	<p>Circular Item 9 requires a discussion of the registrant’s financial condition. This includes discussion of liquidity and capital resources, known trends, and a plan of operation for the 12 months following the offering.</p> <p>Circular Item F/S requires filing of limited financial statements, which need not be audited in every case.</p>	<p>Q&A 27 asks whether the issuer has an operating history.</p> <p>Q&A 28 asks to describe the financial condition of the issuer.</p> <p>Q&A 29 asks for additional financial information via financial statements.</p>
<p>Post-ICO reporting</p> <ul style="list-style-type: none"> • Will the team file ongoing financial reports and how often? • Will an annual audit be 	<p>Item 11(a) [S-K 101] requires that “if [applicable rules] do not require you to send an annual report to security holders . . . describe briefly the nature and frequency of reports that you will give to security holders, Specify</p>		<p>Item 2 requires a statement that an issuer must file an annual report, and how it may terminate its reporting obligations in the future.</p> <p>Item 3 specifies the nature of the</p>

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<p>conducted and by whom?</p> <ul style="list-style-type: none"> Where will these reports be filed? 	<p>whether the reports that you give will contain financial information [that has been audited.]”.</p>		<p>annual report, including non-audited financial statements certified by the principal executive officer.</p> <p>The back page requires annual reports, and provides for termination under certain conditions.</p>
Organization and Operations Disclosures			
<p>Mission, goals and objectives</p> <ul style="list-style-type: none"> What is the purpose of the sale and how does it fit within the larger mission of the project? What does the team seek to achieve and how? 	<p>Item 4 [S-K 504] requires stating “the principal purpose for which the net proceeds to the registrant from the securities to be offered are intended to be used and the approximate amount intended to be used for each such purpose.”</p> <p>Item 11(a) [S-K 101] requires a narrative description of the business, including the “principal products and services rendered,” “competitive conditions,” etc.</p>	<p>Item 2 requires the issuer to certify that it is not a development stage company with “no specific business plan or purpose.”</p> <p>Circular Item 7 requires a narrative description of the business, including the “principal products and services rendered,” and the “status of a product or service if the issuer has made public information about a new product or service that would require the investment of a material amount of assets.”</p>	<p>Q&A 7 asks to “describe in detail the business of the issuer and the anticipated business plan of the issuer.”</p> <p>Q&A 9 asks bluntly “what is the purpose of this offering?”</p> <p>Q&A 10 asks for “a reasonably detailed description” of the intended use of the offering’s proceeds.</p>
<p>The team</p> <ul style="list-style-type: none"> Who is working on this project? <ul style="list-style-type: none"> Is there a community? 	<p>Item 11(k) [S-K 401] requires identification of directors and executive officers. Even those who don’t hold those formal titles are required to be identified if they are significant employees “who make or are expected to</p>	<p>Item 3 [Reg A Rule 262] requires certification that no issuer, director, officer, beneficial owner, or promotor is disqualified (e.g. by virtue of criminal conviction).</p> <p>Circular Item 7 requires</p>	<p>The cover page requires listing the current number of employees.</p> <p>Q&A 5 asks for the name, title, responsibilities, and business experience for each officer. Notably, it includes “any persons</p>

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<ul style="list-style-type: none"> ○ Is it open source? ○ What is the off-chain governance structure? ● Is it centrally controlled? <ul style="list-style-type: none"> ○ Description of the founding team ○ Independent background checks? 	<p>make significant contributions to the business of the registrant.” This might sweep in at least some of the team who do not have executive officer titles.</p> <p>Item 11(k) [S-K 401] requires disclosure of the business experience of directors, executive officers and significant employees. Directors and officers must further disclose involvement in legal proceedings, including criminal proceedings, as do promoters.</p>	<p>disclosure of “the total number of persons employed by the issuer, including the number employed full time.”</p> <p>Circular Item 10 requires disclosure of the position, age, term of office, and hours per week for each executive officers, directors, and significant employees. Significant employees includes “persons such as production managers, sales managers, or research scientists . . . who make or are expected to make significant contributions to the business of the issuer.” This would likely sweep in much of the technology team. Directors and officers must further provide business experience and criminal convictions.</p>	<p>occupying a similar status or performing a similar function,” which might sweep in tech advisors who do not hold a traditional officer title.</p> <p>Q&A 30 asks about convictions of directors and officers.</p>
<p>Jurisdiction</p> <ul style="list-style-type: none"> ● Is a legal entity/ organization is involved? ● In what jurisdiction is the legal entity formed? ● Is there a principal place of business or geographic area where the organization or its 	<p>Item 3 [S-K 503] requires disclosure of the mailing address and phone number of “principal executive offices.”</p> <p>Item 11(a) [S-K 101] requires description of the business, which includes 5 years of operating history, the form of the registrant’s organization, etc.</p>	<p>Item 1 requires the name of the issuer, the jurisdiction, and the address of the principal executive offices.</p> <p>Part III Item 17 requires the charter and bylaws of the issuer to be attached as exhibits.</p>	<p>The cover page requires listing the name of the issuer, its form, jurisdiction, date of organization, and physical address.</p>

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activities are located?			
<p>Corporate legal structure (off-chain governance)</p> <ul style="list-style-type: none"> • Who are the primary issuing and supporting organizations for the project? • Where and how are these entities structured? • Organizational documents? • Legal counsel contact info? • Who controls and governs these entities? <ul style="list-style-type: none"> ○ Officers and board members? ○ Audit Committee? ○ Compensation Committee? 	<p>Item 3 [S-K 503] requires disclosure of the mailing address and phone number of “principal executive offices.”</p> <p>Item 11(a) [S-K 101] requires description of the business, which includes 5 years of operating history, the form of the registrant’s organization, etc.</p> <p>Item 10 [S-K 509] requires disclosure of the interests of counsel, though this appears limited to those who rendered an opinion or certification in connection with the offering.</p> <p>Item 11(k) [S-K 401] requires identification of directors and executive officers.</p> <p>Item 11(l) [S-K 407] provides at-length disclosure about the corporate governance of the registrant.</p> <p>Item 11(l) [S-K 407] requires disclosure of board meetings and “whether or not the registrant has standing audit, nominating and compensation committees.”</p>	<p>Item 1 requires the name of the issuer, the jurisdiction, and the address of the principal executive offices.</p> <p>Part III Item 17 requires the charter and bylaws of the issuer to be attached as exhibits.</p>	<p>The cover page requires listing the name of the issuer, its form, jurisdiction, date of organization, and physical address.</p> <p>Q&A 4 asks for the name and business experience of each director “and any persons occupying a similar status or similar function.”</p>

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	<p>Item 16(a) [S-K 601] requires that articles of incorporation, bylaws and subsidiaries be appended as exhibits.</p>		
<p>Blockchain governance and amendments (on-chain governance)</p> <ul style="list-style-type: none"> • White paper at token issuance and all historical versions (or links to these)? • What is the on-chain governance structure? <ul style="list-style-type: none"> ○ Public or private blockchain? ○ What is the consensus mechanism? • How are decisions made? • What mechanism governs amendments? 	<p>Item 11(l) [S-K 407] on Corporate Governance. Corporate governance deals with stocks. Would it be enough to force disclosure about blockchain governance?</p> <p>Item 2 [S-K 502] requires delivery of prospectus by dealers. Would this cover white paper disclosure, especially historical versions?</p> <p>Item 9 [S-K 202] requires that “if the rights of holders of such stock may be modified otherwise than by a vote of a majority or more of the share outstanding,, voting as a class, so state and explain briefly.” Note that this references stock, but a later provision requires comparable disclosure for other securities.</p> <p>Item 11(l) [S-K 407] requires description of the process by which security holders can send communications to the board of</p>		<p>Q&A 14 asks whether the securities have voting rights, and Q&A 15 asks about limitations on voting rights.</p> <p>Q&A 16 asks how the terms of the securities being offered may be modified.</p> <p>Q&A 31 asks for any other material information presented to investors, or any information necessary to make the statements not misleading, which could require releasing the white paper.</p>

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	<p>directors. To the extent that this allows token holders to communicate with any real-world entity, this may allow for interaction between on-chain and off-chain governance.</p>		
<p>Custody chain</p> <ul style="list-style-type: none"> • Who holds the private key(s) to the wallet(s) in which ICO funds will be held? • Who custodies reserve tokens? • Procedures and controls surrounding custody and treasury management. 			
<p>Treasury management policy</p> <ul style="list-style-type: none"> • Plan for managing ETH, BTC, fiat balances raised in the sale? • Hedging instruments for exchange rate risk exposure? • Liquidation plans to cover operating expenses? • Secondary sales rules (e.g., Ripple’s periodic liquidation windows)? • Hedging instruments for reserved tokens? 	<p>Item 11(h) [SK-303] requires identification of trends that may affect the liquidity of the registrant, and “the course of action that the registrant has taken or proposes to take to remedy.”</p> <p>Item 11(j) [S-K 305] requires quantitative and qualitative disclosures about market risk. To the extent exchange rate exposure is included as a market risk, parties must describe “how those exposures are managed . . . a discussion of the objectives, general strategies, and</p>		

Disclosure Item	Form S-1	Form 1-A ¹	Form C ²
<ul style="list-style-type: none"> • Policies and procedures regarding insider sales and purchases? 	instruments, if any, used to manage those exposures.”		
IP/Tech			
Web assets (verified) <ul style="list-style-type: none"> • <i>E.g.</i>, project website, token sale website, GitHub repository 			The cover page has a place for listing the website of the issuer.
Social media links (to prevent phishing attacks) <ul style="list-style-type: none"> • <i>E.g.</i>, Twitter, Telegram, Reddit, Slack 			
Protocol and other IP ownership <ul style="list-style-type: none"> • Who owns the copyright and IP for the protocol used by the company? • Any other IP associated with the token sale? • Is there an open source reference implementation that describes the licenses (<i>e.g.</i>, Creative Commons license) used by the ICO? • Community information relating to the size of the committer base and the 	Item 11(a) [S-K 101] requires discussion of “the importance to the segment and the duration and effect of all patents, trademarks, licenses, franchises and concessions held.” Still, this might not include other IP relevant to a crypto company, and it does not address ownership and use of the IP.	Circular Item 7 requires a discussion of “patents, trademarks, licenses, franchises, concessions or royalty agreements . . .” Still, this might not include other IP relevant to a crypto company, and it does not address ownership and use of the IP. Part III Item 17 requires attaching any material contracts as exhibits, which includes “any franchise or license or other agreement to use a patent, formula, trade secret, process or trade name upon which	

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<p>volume of pull requests, along with the total size of the codebase.</p>		<p>the issuer’s business depends to a material extent.” This is important because it includes trade secrets, which may well cover much of the IP held by a crypto company.</p>	
<p>Audits</p> <ul style="list-style-type: none"> Independent audits of the smart contracts and security procedures used in the ICO. 		<p>Part III Item 17 requires attaching as an exhibit the consent of experts “whose profession vies authority to a statement made by them and who is named in the offering statement as having prepared or certified a report or evaluation whether or not for use in connection with the offering statement.” This could conceivably force disclosure of an audit report if such audit is mentioned in the offering statement.</p>	
Risk Factors			
<p>Material risks to a purchase of the tokens based on any of the above or other factors</p>	<p>Item 11(j) [S-K 305] requires quantitative and qualitative disclosures about market risk. But, this is only one part of purchaser risk, and the concept of a “market” in the token context may be less well defined.</p> <p>Item 1[S-K 501] requires a cross-reference to the “risk factors section” to be placed on the cover</p>	<p>Circular Item 1(h) requires a cross-reference to the risk factors section to be placed on the cover page.</p> <p>Circular Item 3 requires “a carefully organized series of short, concise paragraphs, summarizing the most significant factors that make the offering speculative or substantially</p>	<p>Q&A 8 asks for a discussion of “the material factors that make an investment in the issuer speculative or risky,” and instructs to “avoid generalized statements and include only those factors that are unique to the issuer.”</p> <p>Q&A 22 asks for the risks</p>

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	<p>page.</p> <p>Item 3 [S-K 503] requires a discussion, “where appropriate,” of the most significant factors that make the offering speculative or risky.” This seems flexible enough to cover many crypto-specific risks.</p>	<p>risky.”</p> <p>Circular Item 14 requires a description of “potential liabilities imposed on securityholders under state statutes or foreign law, for example, to employees of the issuer . . .”</p>	<p>relating to minority ownership.</p> <p>Q&A 23 asks for risks associated with corporate actions.</p>