Blockchain-Based Token Sales, Initial Coin Offerings, and the Democratization of Public Capital Markets

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Best known for their role in the creation of cryptocurrencies like bitcoin, blockchains are revolutionizing the way tech entrepreneurs are financing their business enterprises. In 2017 alone, over $2.2 billion has been raised through the sale of blockchain-based digital tokens in what some are calling initial coin offerings or "ICOs," with some sales lasting mere seconds. In a token sale, organizers of a project sell digital tokens to members of the public to finance the development of future technology. An active secondary market for tokens has emerged, with tokens being bought and sold on cryptocurrency exchanges scattered across the globe, with often wild price fluctuations.

The recent explosion of token sales could mark the beginning of a broader shift in public capital markets—one similar to the shift in media distribution that started several decades ago. Blockchains drastically reduce the cost of exchanging value and enable anyone to transmit digitized assets around the globe in a highly trusted manner, stoking dreams of truly global capital markets that leverage the power of a blockchain and the Internet to facilitate capital formation.

The spectacular growth of tokens sales has caused some to argue that these sales simply serve as new tools for hucksters and unscrupulous charlatans to fleece consumers, raising the attention of regulators across the globe. A more careful analysis, however, reveals that blockchain-based tokens represent a wide variety of assets that take a variety of forms. Some are obvious investment vehicles and entitle their holders to economic rights like a share of any profits generated by the project. Others carry with them the right to use and govern the technology that is being developed with funds generated by the token sale and may represent the beginning of a new way to build and fund powerful technological platforms.

Lacking homogeneity, the status of tokens under U.S. securities laws is anything but clear. The test under which security status is assessed—the Howey *test—has uncertain application to blockchain-based tokens, particularly those that entitle the holder to use a particular technological service, because they also present the possibility of making a profit by selling the token on a secondary market. Although the SEC recently issued a Report of Investigation in which it found that one type of token qualified as a security,*

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confusion surrounds the boundaries between the types of tokens that will be deemed securities and those that will not.

Blockchain-based tokens exhibit disparate features and have characteristics that make current registration exemptions a poor fit token sales. In addition to including requirements that do not fit squarely with blockchain-based systems, the transfer restrictions that apply to the most popular exemptions would have the perverse effect of restricting the ability of US consumers to access a new generation of digital technology. The result is an uncertain regulatory environment in which token sellers do not have a sensible path to compliance.

In this Article, we argue that the SEC and Congress should provide token sellers and the exchanges that facilitate token sales with additional certainty. Specifically, we propose that the SEC provide guidance on how it will apply the Howey *test to digital tokens, particularly those that mix aspects of consumption and use with the potential for a profit. We also propose that lawmakers adopt both a compliance-driven safe harbor for online exchanges that list tokens with a reasonable belief that the public sale of such tokens is not a violation of Section 5 as well as an exemption to the Section 5 registration requirement that has been tailored to digital tokens.*

INTRODUCTION

Blockchains are taking a bite out of capital markets. With less than a hundred lines of code,[1] anyone can generate blockchain-based tokens and sell them to the public. Over the past year, parties have raised over $2.2 billion through token sales—what some have referred to as initial coin offerings (or ICOs)—with some sales lasting a matter of seconds.[2] Absent from these token sales are traditional disclosures and the battery of professionals and

[1] As described in Part I *infra,* the code necessary to launch a blockchain-based token based on Ethereum's ERC20 token standard is only 57 lines of code. *See* ERC20 Token Standard, The EthereumWiki, https://theethereum.wiki/w/index.php/ERC20_Token_Standard (last accessed September 18, 2017).

[2] As described further below, blockchain-based funding has now eclipsed $1.8 billion in cumulative proceeds. Several projects, including Bancor, Filecoin, and Tezos, have sold hundreds millions of dollars in tokens. *See* CoinScheduler, "Cryptocurrency ICO Status 2016," https://www.coinschedule.com/stats.php?year=2016 (last accessed September 18, 2017); CoinScheduler, "Cryptocurrency ICO Status 2017," https://www.coinschedule.com/stats.php?year=2017 (last accessed September 18, 2017). Many token sales are "capped"—*i.e.*, only a limited number of tokens are sold. Several capped tokens sales have lasted mere seconds, raising tens of millions of dollars. *See, e.g.,* Jonathan Keane, "$35 Million in 30 Seconds: Token Sale for Internet Browser Brave Sells Out," CoinDesk, Mar. 31, 2017, http://www.coindesk.com/35-million-30-seconds-token-sale-internet-browser-brave-sells/.

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intermediaries that tightly control access to public capital markets. Tokens sales are accompanied by informal technical white papers or specs, do not involve investment bankers, and are not listed on traditional securities exchanges like Nasdaq or the New York Stock Exchange. Rather, token sales are announced on Reddit, discussed on Twitter, and bought and sold on "cryptocurrency" exchanges of varying degrees of sophistication.

Tokens appear to be taking the world by storm, generating intense interest from blockchain enthusiasts, cypherpunks, and venture capitalists—raising the eyebrows of regulators across the globe. In 2016, less than $100 million in tokens were sold. By the summer of 2017, that number had swelled to over $2.2 billion, with several token sales raising over $230 million each.[3]

Given the intensity of interest, it is unsurprising that the Securities Exchange Commission ("SEC") has turned its attention to token sales. In July 2017, the SEC released a Report of Investigation in which it found that a blockchain-based token qualified as a security requiring registration under Section 5 of the Securities Act of 1933.[4] Other government regulators from Canada, China, Hong Kong, Malaysia, Russia, and Singapore have followed suit, examining how token sales fit within their own securities laws frameworks.[5]

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[3] *See* note 3 *supra*.

[4] Securities and Exchange Commission, *Release No. 81207: Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO*, July 25, 2017, available at https://www.sec.gov/litigation/investreport/34-81207.pdf [hereinafter "The DAO Report"]; *see also* 15 U.S.C. § 77e.

[5] Canadian Securities Administrators, *CSA Staff Notice 46-307, Cryptocurrency Offerings*, Aug. 24, 2017, http://www.osc.gov.on.ca/documents/en/Securities-Category4/csa_20170824_cryptocurrency-offerings.pdf; The People's Bank of China, Central Office of the Ministry of Industry and Information Technology, Banking Regulatory Commission, and China Regulatory Commission, *Notice on the Prevention of Tokens*, Sept. 4, 2017, http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/3374222/index.html; Hong Kong Securities and Futures Commission, *Statement on Initial Coin Offerings*, Sept. 5, 2017, http://www.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=17PR117; Securities Commission Malaysia, *Media Statement: Initial Coin Offering*, July 9, 2017, http://www.mondovisione.com/media-and-resources/news/securities-commission-malaysia-media-statement-initial-coin-offerings/; Central Bank of the Russian Federation (Bank of Russia), *On the Use of Private "Virtual Currencies" (Crypto Currency)*, Sept. 4, 2017, https://www.cbr.ru/press/PR/?file=04092017_183512if2017-09-04T18_31_05.htm; Monetary Authority of Singapore, *MAS Clarifies Regulatory Position on the Offer of Digital Tokens in Singapore*, Aug. 1, 2017, http://www.mas.gov.sg/News-and-Publications/Media-Releases/2017/MAS-clarifies-regulatory-position-on-the-offer-of-digital-tokens-in-Singapore.aspx; https://www.cbr.ru/press/PR/?file=04092017_183512if2017-09-04T18_31_05.htm; Monetary Authority of Singapore, *MAS Clarifies Regulatory Position on the Offer of Digital Tokens in Singapore*, Aug. 1, 2017, ;

The recent explosion of token sales could mark the beginning of a broader shift in public capital markets—one similar to the shift in media distribution that started several decades ago. The Internet drastically reduced the cost of transmitting digital files, leading to a realignment of the music and media industries. Files could be zipped around the globe in a matter of seconds and at a low cost, prompting dreams of "celestial jukeboxes"—services that ultimately manifested in peer-to-peer networks, like Napster, and eventually in centralized media services, like YouTube and Spotify.[6] The initial appearance of peer-to-peer networks and eventual migration to centralized service unleased a flood of both traditional media and user-generated content, which created new tensions with existing copyright law.[7]

With blockchains, we could very well be witnessing a similar trend, but this time in the context of public markets and securities laws. Blockchains drastically reduce the cost of exchanging value and enable anyone to transmit digitized assets around the globe in a highly trusted—and often pseudonymous—manner.[8] With blockchains, technologists dreams have begun to shift from celestial jukeboxes to truly global capital markets—markets that are decentralized, geographically agnostic, and accessible to all.[9]

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[6] *See, e.g.*, PAUL GOLDSTEIN, COPYRIGHT'S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX 197-236 (1994) (using the metaphor but disclaiming credit for generating it); Janelle Brown, "The Jukebox Manifesto," Salon, Nov. 13, 2000, http://www.salon.com/2000/11/13/jukebox/ (describing how "[d]igital music evangelists talk a lot about a gadget they like to call the 'celestial jukebox' . . . a networked device that will allow you to download any song your heart desires, anytime. Imagine a Walkman that had broadband wireless connectivity to the Net, could access the entire world's catalog of recorded music and played back that music with impeccable sound quality.").

[7] The Internet created a number of issues related to copyright law, leading to the enactment of new Digital Millennium Copyright Act ("DMCA"), and a number of court decisions redefining the boundaries of secondary copyright liability. *See* Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified at 17 U.S.C. § 1201-1205); *Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd.*, 545 U.S. 913 (2005); *A&M Records, Inc. v. Napster, Inc.*, 239 F.3d 1004 (9th Cir. 2001); Perfect 10, Inc. v. CCBill L.L.C., 488 F.3d 1102, 1117 (9th Cir. 2007); *Columbia Pictures Indus., Inc. v. Fung*, 710 F.3d 1020 (9th Cir. 2013); *UMG Recordings, Inc. v. Shelter Capital Partners LLC*, 718 F.3d 1006 (9th Cir. 2013); *Viacom Int'l, Inc. v. YouTube, Inc.*, 676 F.3d 19 (2d Cir. 2012).

[8] One of the best current primers on blockchain technology—which provides a technical overview of how blockchain technology works—is ARVIND NARAYANAN ET AL., BITCOIN AND CRYPTOCURRENCY TECHNOLOGIES: A COMPREHENSIVE INTRODUCTION (2016). As we outline further below, any asset can be represented as a token in a blockchain and traded just like a digital currencies. *See* Part I *infra.*

[9] Whether blockchain-based token sales are accessible to everyone is an open question. As described further below, a number of token sales are capped at a fixed amount (e.g., $10 million). Parties seeking to purchase tokens in these sales often have to pay high fees in order to ensure that they are able to participate in the sale before others. Some purchasers are willing to pay fees in excess of $6,000 to ensure that they gain access to tokens—prices that are inaccessible for most individuals. *See* Keane, *supra* note 3 (noting that a participant in

For now, blockchain-based token sales have an immature veneer, causing some to argue that these sales simply represent new tools that will be leveraged by hucksters and unscrupulous charlatans.[10] Digging below the surface, however, reveals that blockchain-based tokens represent a wide variety of assets, some of which will qualify as securities under U.S. law. Tokens sales are changing how technologists are choosing to fund their ventures and have begun to eclipse traditional financing sources—like venture capital funding—for entrepreneurs exploring blockchain technology.[11]

This Article examines the phenomena of blockchain-based token sales and argues that these sale create new tensions with existing U.S. securities laws. Every token sale will not involve the sale of a security subject to the U.S. securities laws. Under the applicable test, each token will need to be evaluated on a case-by-case basis—particularly one type of token, what we refer to as *utility tokens*, which have both consumptive and speculative characteristics.[12] This ad hoc approach generates costs and uncertainty, chilling lawful, economically valuable activities and technological innovation—all while providing an opportunity for the SEC to expand its jurisdiction over digital goods that have consumptive aspects. The uncertainty regarding the U.S.'s approach to token sales will create strong incentives for token sellers to engage in regulatory arbitrage, driving activity to jurisdictions that accommodate this new technology with predictability and reasonable paths to compliance.[13]

To address these risks, we offer several proposals. First, we suggest that the SEC issue guidance as to the types of blockchain-based tokens that

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the token sale for the "Basic Attention Token" "paid more than $6,000 in ethereum mining fees to almost guarantee their place at the top of the line," in a sale that lasted 30 seconds).

[10] *See* David Morris, "The Rise of the Cryptocurrency Ponzi Scheme," The Atlantic, May 31, 2017, https://www.theatlantic.com/technology/archive/2017/05/cryptocurrency-ponzi-schemes/528624/ (noting that "ICOs are catnip for scammers"). Indeed, it is possible that token sales are just modern versions of the "financial pirates" who were engaged in the widespread sale of "pieces of paper" representing ownership interest in various corporate enterprises, which prompted the passage of state blue sky laws in the early 1900s. *See* Manning Gilbert Warren III, *Reflections on Dual Regulation of Securities: A Case Against Preemption*, 25 B.C. L. REV. 495, 495 (1984) (quoting Mulvey, Blue Sky Law, 36 CAN. L. TIMES 37 (1916)).

[11] Alex Sunnarborg, "ICO Investments Pass VC Funding in Blockchain Market First," CoinDesk, June 9, 2017. http://www.coindesk.com/ico-investments-pass-vc-funding-in-blockchain-market-first/.

[12] *See* Part II *infra*. We note that the word speculative can have a negative connotation. Our use of the word is not intended to be negative. Rather it merely reflects the ability of a token to fluctuate in value over time, depending on the popularity of the underlying technology or other factors.

[13] *Id.*

are likely to be deemed a security.[14] Such guidance would allow token sellers and the exchanges to better assess their risk and compliance obligations. Second, we argue that the SEC should consider a registration exemption that has been designed specifically for blockchain-based tokens so that parties who sell tokenized securities that rely on blockchain technology will have a method of compliance that does not require Section 5 registration.[15] As we discuss below, many aspects of the current registration regime and existing exemptions are not well-suited to digital tokens. They ignore important aspects of the technology and provide token sellers with strong incentives to conduct their sale outside the purview of U.S. law. Third, we recommend that Congress enact legislation instructing the SEC to adopt a safe-harbor for exchanges facilitating the buying and selling of blockchain-based tokens provided they comply with certain procedures prior to listing the token and take certain steps to delist the token if it is subsequently determined to be subject to the Section 5 registration requirement and does not fall into an exemption. With a safe-harbor for exchanges, the SEC can encourage relevant parties to take steps that will protect purchasers from fraud, but without impairing the ongoing development of this financial technology. By taking these steps, Congress and the SEC can reduce the incentive to engage regulatory arbitrage and foster a regulatory climate that ensures that the U.S. retains its position in global financial markets.[16]

This Article proceeds in three Parts. Part I provides an overview of blockchain-based tokens and their use as a tool for financing the development of new technology. In Part I, we provide a taxonomy of the different types of blockchain-based tokens currently being sold and discuss both the size and frequency of recently-completed sales and the emerging "best practices" that sellers tend to follow when conducting sales. Part II provides an analysis of blockchain-based tokens under relevant U.S. securities laws.[17] It demonstrates that under the current approach for determining what is or is not a security, there is significant uncertainty as to the status of blockchain-based tokens. *Utility tokens*, in particular, seem to exist in a regulatory no-mans' land insofar as they offer both an opportunity to use or consume valuable technological services and a chance at turning a profit by selling the token on an exchange.[18] We explain why current registration exemptions are not well suited for app tokens and contain anachronistic requirements that are largely unnecessary for this new technology.[19] The result is a regulatory

[14] *See* Part III *infra*.
[15] *Id.*
[16] *Id.*
[17] *See* Part I *infra*.
[18] *See* Part II *infra*.
[19] *Id.*

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regime that creates considerable risk for token sellers and also fails to offer a sensible path to compliance. Part III suggests various measures that Congress, the SEC, and other lawmakers can take to balance the need for regulatory oversight with the need of token sellers for certainty.[20] We outline the factors the SEC should consider when determining the security status of blockchain-based tokens[21] and also suggest that the appropriate lawmakers fashion both a token-specific registration exemption and a safe-harbor designed for token exchanges.[22]

I. BLOCKCHAINS, APP TOKENS, AND TOKEN SALES

At their core, blockchains are decentralized databases maintained by a network of computers. Through the use of public-private key cryptography and strict code-based rules—known as consensus mechanisms[23]—blockchains store tamper-resistant, resilient, and authenticated data and enable users to engage in pseudonymous transactions.[24]

Blockchains first emerged to facilitate the transfer of decentralized, digital currencies.[25] By relying on the Internet and a blockchain, digital assets—like bitcoin—could be transferred across the globe like email or music files.[26] A blockchain kept track of who owned these digital assets at any point in time without the need for a centralized intermediary, like a central bank or centralized exchange.[27]

Blockchain technology, however, is useful for far more than just digital currencies. From a technical perspective, blockchains can be used to

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[20] *Id.*

[21] *See* Part III *infra.*

[22] *Id.*

[23] *See* PRIMAVERA DEFILLIPI & AARON WRIGHT, BLOCKCHAIN & THE LAW: THE RULE OF CODE (forthcoming 2018) (under file with authors).

[24] *Id.*

[25] *Id.* For purposes of this article, the terms "bitcoin" and "ether," without the first letter capitalized, will refers to digital currencies with the same name. We will refer to the Bitcoin and Ethereum blockchains using a capitalized first letter. There is an open question as to how to legally characterize a digital asset, like bitcoin. Under the U.C.C., bitcoin and other cryptocurrencies are considered "general intangibles." Jeanne L. Schroeder, *Bitcoin and the Uniform Commercial Code*, 24 U. MIAMI BUS. L. REV. 1, 8 (2016). The United States Internal Revenue Service ("IRS") characterizes "virtual currencies" as "property"—akin to a physical asset—and taxes the purchase and sale of bitcoin and ethereum token accordingly. *See* Internal Revenue Service, *Notice 2014-21*, Mar. 25, 2014 https://www.irs.gov/pub/irs-drop/n-14-21.pdf. There is also an open question of whether bitcoin and other cryptocurrencies are securities. These issues, while also important, are outside the scope of this Article. *See* Jeffrey E. Alberts & Bertrand Fry, *Is Bitcoin A Security?*, 21 B.U. J. SCI. & TECH. L. 1, 21 (2015) (concluding that bitcoin is not a security).

[26] DeFillipi & Wright, *supra* note 23.

[27] *Id.*

manage the transfer of traditional assets like stocks, bonds, and even real property simply by correlating the rights of ownership to a blockchain-backed token, which can be exchanged by anyone with an Internet connection in a matter of seconds or minutes.[28] For purposes of our analysis, we narrowly focus on two types of blockchain-based assets—protocol tokens and app tokens—providing a detailed overview of these assets below.

A. Protocol Tokens

Most blockchains use digital tokens as a means of compensating parties for participation. Large public blockchains are redundantly stored on computers scattered throughout the globe,[29] and are managed by open source software protocols that dictate how new information is added to these shared data structures. A core component of each of these software protocols is a *consensus mechanism*, or a set of rules that governs: (i) how information is added to a blockchain; and (ii) how disparate members of a blockchain-based network come to periodic agreement about the current state of the shared database.[30]

Today, blockchain-based consensus mechanisms make adding information to a blockchain purposefully difficult and even harder to remove once saved, creating data that is hard to alter once stored. Blockchain-based protocols group sets of transactions into sets called *blocks*, which are linked together to form a sequentially ordered chain.[31] Before a block can be added to a blockchain, the protocol requires that a valid cryptographic hash for a block—*i.e.*, an encrypted representation of the underlying transactional data—is generated.[32]

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[28] The notion of using a blockchain for more than just the transfer of digital currency has been explored for several years. For example, the founder of AngelList, Naval Ravikant, described the use of "appcoins" as early March 2014 to "[a]llocate scarce resources in the network using a scarce token," which users needed to own "to use the network." Naval Ravikant, "The Bitcoin Model for Crowdfunding," Mar. 9, 2014. https://startupboy.com/2014/03/09/the-bitcoin-model-for-crowdfunding/. Other Bitcoin and blockchain developers began to explore the idea of "app coins" around the same time. *See, e.g.*, David Johnson et al., "The Value of AppCoins," June 10, 2014 https://github.com/DavidJohnstonCEO/TheValueofAppCoins.

[29] Bitnodes, "Global Bitcoin Nodes Distribution," https://bitnodes.21.co/ (last accessed September 19, 2017) (listing 9,384 nodes on the Bitcoin blockchain, in 95 different countries, each storing a copy of the Bitcoin blockchain); Ethernodes, "The Ethereum Node Explorer," https://www.ethernodes.org/network/1 (last accessed September 19, 2017) (listing 24,626 nodes supporting the Ethereum blockchain, found in countries across the world).

[30] *See* Arvind et al., *supra* note 8, at 32-41.

[31] *See* DeFillipi & Wright, *supra* note 23. This is why the technology is called a "blockchain."

[32] Hashes are often generated using standard cryptographic hashing functions, providing

While generating a valid hash does not need to be challenging, blockchain-based protocols make this task purposefully difficult. For most current blockchains, a valid hash for a block must have a predefined number of leading zeroes, which can only be generated through a computationally difficult, brute force guessing game—often referred to as *proof of work*.[33] The proof of work guessing game requires that a computer repeatedly execute a hashing algorithm until the algorithm outputs a valid hash with a sufficient number of leading zeros. Members of a blockchain-based network (known as *miners*) play this proof of work guessing game and expend computational resources to generate a valid hash.[34]

Miners engage in this game—not out of the goodness of their hearts—but rather because a blockchain's protocol will reward them with tokens of digital currency. The lucky miners that win proof of work guessing games, as confirmed by other members of the network, have their accounts credited with protocol tokens, along with small fees paid by the transacting parties. Miners, in turn, can transfer these tokens to other parties or sell them on the open market.[35]

Blockchains-based protocols tend to reduce the allocations of protocol tokens over time.[36] They thus serve as a powerful incentive for miners to support a blockchain early in the network's development and before mining becomes too computationally expensive.[37] All things being equal, the

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a way to represent the bundle of transactions in a block as a string of characters and numbers that are uniquely associated with that block's transactions. *See* Lawrence J. Carter & Mark N. Wegman, *Universal Classes of Hash Functions*, 18 J. COMP. & SYS. SCIENCES 143 (1979).

[33] Joseph Bonneau et al., *SoK: Research Perspectives and Challenges for Bitcoin and Cryptocurrencies*. In Security and Privacy (SP), 2015 IEEE Symposium, pp. 104-121. IEEE, 2015 ("Bitcoin . . . establishes consensus on the blockchain through a decentralized, pseudonymous protocol dubbed Nakamoto consensus. This can be considered Bitcoin's core innovation and perhaps the most crucial ingredient to its success. Any party can attempt to add to the chain by collecting a set of valid pending transactions and forming them into a block. The core ingredient is the use of a challenging computational puzzle (usually given he slight misnomer proof of work) to determine which party's block will be considered the next block in the chain.").

[34] *Id.*

[35] For example, with Bitcoin, the size of the block reward is determined by a fixed schedule. Initially, each block had a block reward of 50 bitcoin. This has since halved to 25 bitcoin and then 12.5 bitcoin. The scheduled roughly halves every four years until roughly 2140 at which point no new bitcoins will be created. In addition to mining rewards, the miner who adds a block to the Bitcoin blockchain receives a small fee. Bonneau et al., *supra* note 39; *see also* Arvind et al., *supra* note 9, at 41-43.

[36] *Id.*

[37] Blockchains have profound economic and game theoretical models embedded in their structure. For an overview of these issues, *see* Joshua A. Kroll et al., *The Economics of Bitcoin Mining, or Bitcoin in the Presence of Adversaries*, *Proceedings of WEIS*, Vol. 2013. (2013). When it comes to mining, back in 2014 it was possible for a commodity laptop to

earlier a miner allocates computational assets to a blockchain-based network the greater probability that miner has of receiving an allocation of protocol tokens.[38]

However, protocol tokens do not only serve as a reward; they also have functional aspects. For example, on Bitcoin, the bitcoin protocol token serves as the unifying purpose of the entire network.[39] The primary reason why the network exists is to create and transfer these tokens after they are forged from the computer hardware and the electricity needed to facilitate bitcoin transactions. The bitcoin token thus serves as a rough approximation of the expected value and total support for the Bitcoin network as a whole: the more miners that choose to support the network, the harder and more expensive it becomes to create a bitcoin, thus providing a basis for a bitcoin's value.[40]

On more advanced blockchains, protocol tokens have additional functional utility. Take for instance Ethereum, a second generation blockchain reengineered from the ground up: Like Bitcoin, Ethereum enables member of the Ethereum network to store information in a tamper resistant, highly resilient, and non-repudiable manner.[41] And like Bitcoin, Ethereum has a native protocol token ether that is rewarded to miners who generate valid blocks for the Ethereum blockchain.[42]

Ethereum goes one step further than Bitcoin to implement a decentralized virtual machine—a parallelized computing system—that enables anyone participating on the network to execute programs called

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mine Bitcoin, today the cost of mining requires specialized hardware, which is costly to acquire. Arvind et al., *supra* note 9, at 45.

[38] Bonneau et al., *supra* note 39 ("The randomized nature of [proof of work] is important; with a non-randomized puzzle (true proof-of-work) the most powerful individual miner could be expected to find every block first. With a randomized puzzle each miner will have a probability of finding the next block proportional to their share of the competing computational power."); Karl J O'Dwyer & David Malone, *Bitcoin Mining and its Energy Footprint*, ISSC'14: Proceedings of the 25th IET Irish Signals and Systems Conference. ("[o]n the other hand, as the number of people mining Bitcoin increases and the difficulty of mining follows suit, so the likelihood of discovering a valid block decreases.").

[39] *See* Kroll et al., *supra* note 37, at 6 (noting that the success of Bitcoin relies on participants of the network "agree[ing] that Bitcoins have value so that players will be willing to accept bitcoin in payment.").

[40] *See* note 38 *supra*.

[41] DeFillipi & Wright, *supra* note 23. Note, however, that the Ethereum blockchain has some differences in how its blockchain is architected. Unlike Bitcoin, Ethereum blocks contain a copy of both the transaction list and the most recent state. Aside from that, two other values, the block number and the difficulty, are also stored in Ethereum blocks. *See* Vitalik Buterin, *The Ethereum Whitepaper* (2013). For a more technical overview of how Etherem operates, *see* Gavin Wood, *The Ethereum Yellowpaper* (2014).

[42] Buterin, *supra* note 41; Wood, *supra* note 41.

"smart contracts."[43] Smart contracts are a new type of computer program that can be designed to operate autonomously from a centralized operator.[44] This means that unlike today's computer programs—which are executed by individuals or intermediaries, like Amazon, Google, or Microsoft—multiple members of Ethereum network independently run a smart contract's code when triggered, using Ethereum's blockchain to access the code and record interactions with the program.[45]

Once saved in the Ethereum blockchain, no single party can stop others from using the smart contract (unless specifically provided for in the underlying code), and no single party can stop the execution of the smart contract once running. Due to these characteristics, smart contracts act, in a sense, as autonomous electronic agents for parties seeking to engage in economic or social activity online.[46]

Ethereum requires that users of the network seeking to execute a smart contract pay miners a fee (called "gas") for each computational step in the smart contract.[47] These fees are necessary for Ethereum to run smart contract programs because, without them, members of the network could choke the network with spurious requests that would prevent smart contracts from executing.[48] Ether, therefore, serves as a form of "crypto fuel"—a necessary element—needed for the network to appropriately operate.[49]

In effect, Ethereum can be conceptualized as a novel, decentralized computing system, where ether acts as a unit of account providing pre-paid access to computing power provided by members of the Ethereum network. Unlike today, where individuals and businesses directly purchase an application protocol interface ("API") key from Amazon Web Services or

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[43] *Id.* Smart contracts are written in a Turing complete programming language called *Solidity*, which means they can be used to write programs that can be used in arbitrary state transition functions, allowing users to create complex programs that are value aware and can maintain a state, relying on a blockchain for storage. Buterin, *supra* note 41.

[44] In effect, each smart contract on the Ethereum blockchain can be viewed as an autonomous agent. As described by Vitalik Buterin, one of the founders of Ethereum, "'[C]ontracts' in Ethereum should not be seen as something that should be 'fulfilled' or complied with,'" in the sense of a legal agreement, "rather they are more like 'autonomous agents' that live inside of the Ethereum execution environment . . . executing a specific piece of code when 'poked'" by a user. *Id.* They have "direct control over their own ether balance and their own [data storage system] to keep track of persistent variables." *Id.*

[45] DeFillipi & Wright, *supra* note 23.

[46] *See* note 44 *supra*.

[47] Buterin, *supra* note 41; Wood, *supra* note 41.

[48] The concept of "gas" is thus "crucial" for Ethereum to operate. Gas creates a fee system that forces a malicious "attacker to pay proportionately for every resource that they consume, including computation, bandwidth and storage; hence, any transaction that leads to the network consuming a greater amount of any of these resources must have a gas fee roughly proportional to the increment." Buterin, *supra* note 41.

[49] *Id.*

Microsoft's Azure to run software on cloud computing servers, the holders of ether can redeem their token in exchange for computing time or sell it on the open market. Ether is a way to ration access to the computing power of the network, and without it, people would be incentivized to run an excessive number of programs on Ethereum—too many for the members of the Ethereum network to efficiently handle.

B. Application or "App" Tokens

A number of different protocol tokens have been launched—and in some instances publicly pre-sold—since the birth of Bitcoin in early 2009.[50] However, protocol tokens are just one part of a larger emerging story. Blockchains also are supporting a second type of token—what we will refer to as app tokens—to coordinate activity related to online services and other collaborative endeavors.[51]

App tokens are different from protocol tokens. They generally are created by deploying a smart contract program on the Ethereum network.[52] Using a smart contract, both experienced (and relatively novice) software developers can set up and generate their own cryptographically secured tokens, which can be assigned various economic, voting, participation, consumptive, or utilization rights.[53] Indeed, the Ethereum developer community has created a standardized smart contract—known as the ERC20

[50] Indeed, there are a number of blockchain-based tokens, which are based on modified versions of the Bitcoin blockchain. Notable examples of these types of tokens are Zcash, which attempt to add privacy enhancing features to the Bitcoin blockchain. Other tokens, like Litecoin, have proven to be fertile testing grounds for new blockchain-based functionality. *See* Ian Miers, et al. "Zerocoin: Anonymous Distributed E-cash from Bitcoin." Security and Privacy (SP), 2013 IEEE Symposium on. IEEE, 2013; Zcash, https://z.cash/; Litecoin, https://litecoin.org/. Tokens generated by blockchain-based protocols raise independently interesting legal questions, which are outside the scope of this short article.

[51] Another way to characterize these tokens is as "sub-currencies" for individual applications or organizations or "app coins." *See* Buterin, *supra* note 41; Ravikant, *supra* note 28.

[52] As we describe further below, the majority of the app tokens in circulation today have been launched on the Ethereum network. *See* Part I.D *infra*. The reason this is the case is because launching a token on Ethereum is "surprisingly easy," because a token system "is just a database with one operation: subtract X units from A and give X units to B, with the proviso that (i) A had at least X units before the transaction and (ii) the transaction is approved by A." Buterin, *supra* note 41. That logic can be readily implemented as a smart contract program on Ethereum.

[53] Launching a token is so easy to create they are the first example in the Ethereum tutorial. *See* Ethereum, "Create your own Crypto-currency with Ethereum," https://www.ethereum.org/token.

token standard—which makes it possible for anyone to issue a token using less than 100 lines of smart contract code.[54]

The ERC20 smart contract enables its creator to set a supply of tokens, facilitates the transmission and receipt of tokens between parties participating in the Ethereum network, and maintains a record of token holders.55 By creating tokens via an autonomous ERC20-compliant smart contract, token holders retain full control over these assets. The software, in effect, acts as an electronic agent for both the party generating the tokens and any subsequent token holder. The smart contract manages the cumbersome process of keeping track of who owns a token at any point in time and helps streamline the process of collecting any funds from a sale. It acts as both the bookkeeper and manager of a complicated sales process, and requires little to no ongoing oversight once triggered.[56]

As compared to protocol tokens, app tokens tend to have more specific and narrow objectives, imbuing the holder of a token with pre-defined rights, privileges, and rewards within a particular online application or service. Certain app tokens—what we will refer to as utility tokens—grant holders the right to access (or a license to use) a given technology or participate in an online organization. They tend to provide holders with governance rights, such as the right to vote on how the online service should be updated or evolve.[57]

By way of illustration, consider Status a messaging platform modeled after the popular Chinese mobile app, WeChat. Status relies on a ERC20 token—the Status Network Token (SNT)—to manage the purchase of services provided by the platform.[58] Holders of SNT can obtain access to advanced features like push notifications, register a username on the network, buy digital stickers, or set a minimum amount of SNT an unknown user must spend to contact another user (thereby reducing spam).[59] In addition, SNT holders are provided governance rights over the technology and are imbued

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[54] ERC20 Tokenstandard, The EthereumWiki, https://theethereum.wiki/w/index.php/ERC20_Token_Standard.

[55] *Id.*

[56] As we will describe further below, the ERC20-compliant smart contract could be tied to other smart contracts to to perform tasks generally handled by a transfer agent in the context of securities transactions. *See* Part II.3.C *infra*.

[57] According to Smith & Crown, an organization that creates original research related to token sales, 75% of tokens sales through March 2017 had tokens that provided users with the right to access on online service. 50% relied on tokens as a means of payment. Governance and investment rights were less common. *See* Matt Chwiert, "Token Rights: Key Considerations in Crypto-economic Design," Smith & Crown (Mar. 30, 2017), https://www.smithandcrown.com/token-rights/.

[58] The Status Network, "The Status Network: A Strategy Towards Mass Adoption of Ethereum," June 15, 2017, https://status.im/whitepaper.pdf.

[59] *Id.*

with the power to influence and shape the direction of the software project by voting on decisions about how the network should be managed on an ongoing basis.[60]

There is also the Basic Attention Token (BAT token), an ERC20 token used in the Brave Browser, a new open source web browser that automatically blocks online advertisements and tracking services.61 The BAT attempts to align incentives between users who consume advertising, publishers, and the advertisers who supply the underlying content. Users of the Brave browser do not see advertisements by default, but they can earn BAT if they choose to watch online advertisements. In exchange for their attention, users earn BAT, which can be used to unlock premium content on publishers' websites. If advertisers want to run a campaign on a publisher's website, and access Brave users, they must purchase BAT tokens. And participating publishers earn BAT tokens if they post engaging content, which they can, in turn, sell back to advertisers or users.[62]

Other app tokens—what we will term investment tokens—are different from utility tokens and are not only functional in nature but provide holders with economic rights, such as a share of profits generated by a project or organization.[63] Given the economic component, it is no surprise that the SEC first focused on this variety of token in a recently released Report of Investigation that concerned tokens sold by The DAO, a decentralized organization.[64] The DAO relied on investment tokens to represent an interest in a decentralized venture capital fund. The DAO had no owner. Parties purchased tokens—DAO tokens—by transmitting ether to a smart contract managing The DAO, and proceeds from the sale were stored in a collectively managed Ethereum account. Any token holder could apply to The DAO for funding by submitting a proposal via a smart contract, which included such

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[60] *Id.*

[61] *See* Brave, "About Us," https://brave.com/about/ (last accessed September 19, 2017).

[62] Specifically, advertisers buy BAT to fund marketing campaigns. Publishers and users are rewarded BAT tokens based on how users engage with marketing content. *See* Brave Software, "Basic Attention Token (BAT): Blockchain Based Digital Advertising," Mar. 29, 2017, https://basicattentiontoken.org/BasicAttentionTokenWhitePaper-4.pdf.

[63] As noted by Smith & Crown, roughly 25% of app tokens raising over $30,000 provided some sort of profit right. *See* Chwiert, *supra* note 57.

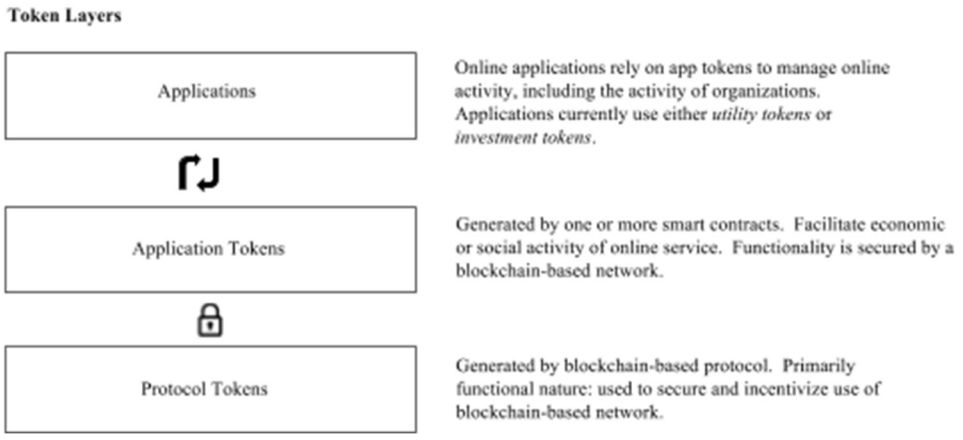
[64] *See* The DAO Report, *supra* note 4. A "decentralized organization" is an organization that relies on blockchain technology and smart contracts as their primary or exclusive source of governance. By relying on smart contracts, these organizations aim to enable people to cooperate or collaborate on a peer-to-peer basis—and, if desired, to transact value—with less of a need to rely on a centralized entity or intermediary. *See* DeFillipi & Wright, *supra* note 23; Vitalik Buterin, "DAOs, DACs, DAs, and More: An Incomplete Terminology Guide." May 6, 2014, https://blog.ethereum.org/2014/05/06/daos-dacs-das-and-more-an-incomplete-terminology-guide/.

information as a description of the project and the amount of ether requested.[65]

Once a valid proposal was submitted, The DAO's underlying smart contract enabled token holders to vote on whether to fund the proposal.66 If approved by token holders, the project would bind itself to The DAO via another smart contract which would remit payments on installment to the project's creator if certain milestones were met.[67] The same smart contract would return any ether earned by the project to The DAO, and any profits or proceeds were redistributed to token holders on a pro rata basis.[68]

Another example of an investment token is the token launched by the Blockchain Capital Fund. The fund created Ethereum-based "BCAP Tokens" with a face value equal to $1, capped at a maximum of $10 million tokens. Holders of the tokens are entitled to profits generated by the fund on a pro rata basis, and raised capital will be used to invest in 10 to 20 companies or token-based projects, at roughly $500,000 per deal.[69]

Figure 1. A Taxonomy of Blockchain-Based Tokens



[65] Christoph Jentzsch, "Decentralized Autonomous Organization to Automate Governance," https://download.slock.it/public/DAO/WhitePaper.pdf.

[66] *Id.*

[67] *Id.*

[68] *Id.*

[69] *See* Matt Chwierut, "Blockchain Capital Token Sale: Membership in a Blockchain Capital Fund," Smith & Crown, April 4, 2017. The BCAP token sale lasted 6 hours. *See* Blockchain Capital, "First Digital Liquid Venture Fund," http://blockchaincapital.tokenhub.com/. As of July 5, 2017, the fund had invested in Bitcoin, Ether, and a number of other token based projects, including Bancor, EOS, Kin, Parity, Ripple, and ZeroEx. The net asset value of the BCAP token was reported to be $1.03. *See* The Aragon Group, "Blockchain Capital Releases Q2 2017 BCAP Token Nav," July 5, 2017, https://argongroup.com/2017/08/02/blockchain-capital-releases-q2-2017-bcap-token-nav/.

C. App Token Sales

Hundreds of millions of dollars of both utility and investment tokens have been sold over the past year.[70] In a relatively short period of time, a set of best practices relating to token sales has begun to emerge. Parties seeking to sell a token draft a detailed "white paper," which provides a technical description of the project and outlines any consumptive or functional aspects of a token.[71] White papers often contain development roadmaps, as well as descriptions of the team backing the technology. The document will explain whether founders and developers will receive tokens as part of the sale and other terms and conditions of the sale.[72]

Following the release of a white paper, the organization supporting the token sale releases the code to the public (usually under an open source license). Trusted technical experts vet the code to ensure that the code governing the application or the sale does not contain any errors or bugs.[73] Many projects issuing tokens also engage in a security audit and issue bounties to compensate developers if they find flaws.[74]

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[70] CoinScheduler, "Cryptocurrency ICO Status 2017," https://www.coinschedule.com/stats.php?year=2017 (last accessed September 18, 2017). Nearly $1 billion in tokens have been sold for infrastructure projects. Over $275 million have been sold for projects related to data storage. And, roughly $225 million in tokens have been sold to support projected related to token trading and investment. *Id.*

[71] Indeed, public repositories of token white papers and other disclosure documents have already been created. *See* TokenFilings, http://tokenfilings.com/, (last accessed September 17, 2017). As the whitepapers on this site show, many of these whitepapers contain basic information about token sales including providing relevant websites, location of the project, number of employees, supply of tokens, token distribution, management teams, and advisors. *See id.*

[72] *Id.*

[73] For example, consider the token sale of Nimiq—a browser-based blockchain—which sold $10 million in tokens in July 2017. Prior to the sale, Nimiq engaged in a security audit and subjected its code to peer review. Team Nimiq, "Nimiq Token and Token Audit Sale," June 23, 2017, https://medium.com/nimiq-network/nimiq-token-and-token-sale-audit-486e1994c462. Prior to the sale, Nimiq also established a "bug bounty" program and rewards to help find security issues related to its platform. *Id.* Other securities audits occur less formally. For example, Aragon—a blockchain-based project aimed at helping people build virtual organizations—sold $24.75 million in tokens in May 2017. They publicly released their underlying source code and interested parties analyzed the code for errors and mistakes. *See* Jordi Baylina, "Aragon Token and Token Sale Audit," May 10, 2017, https://medium.com/@jbaylina/aragon-token-and-token-sale-audit-21cade332f1d (noting how this developer was "reviewing Aragon's smart contracts" and "working closely with Aragon developers, improving the code[,] reviewing and fixing issues in this contracts [sic].").

[74] Indeed, if the code is not released under an open source license, it may signal ulterior motives on the part of the party selling the token. That is why third-party research services, like Smith & Crown, often report whether a token has "project code available." *See* Smith &

After the release of the white paper, the organization seeking to sell the app token engages in both formal and informal marketing, relying on popular technology-learning social media sites such as Reddit and Twitter to generate interest. They also set up communication hubs (through Slack or on message boards) to keep parties interested in the token sale appraised of developments.[75]

Once the token sale begins, anyone with an internet connection can conceivably buy a token. The sale operates as a worldwide crowdfunding event, where tokens can be purchased *en masse*, similar to the way entrepreneurs and artists have used Kickstarter to fund product development. Parties interested in buying a token simply go to an online portal and purchase tokens, which are deposited into a digital currency wallet.[76] Many token sales are "capped." In other words, only a fixed sum of tokens are sold.[77] These token sales—for popular projects or with founders with strong reputations—sell out in a matter of minutes, if not seconds.[78]

Once sold, tokens are non-redeemable. The seller generally has no repurchase obligation, and the tokens are not subject to transfer restrictions.[79]

Crown, "ICOs, Token Sales, Crowdsales," https://www.smithandcrown.com/icos/ (last accessed September 17, 2017).

[75] A popular place for announcements of token sales and updates from product teams is the Ethereum Sub-Reddit—an online committee with over 120,000 readers. *See* Reddit, "/r/Ethereum," https://www.reddit.com/r/ethereum/ (last accessed September 17, 2017).

[76] There have been various projects launched to streamline the sale of tokens. One example is TokenHub, which bills itself as the "first platform in the world to deliver a turnkey solution to set up, run and manage ICOs." TokenHub helps parties "[d]evelop[] your own smart contract tokens"; "[a]dvertiz[e] and PR for your ICO"; "[p]roved[e] specialized wallets to hold and transfer the tokens"; "[l]ist[] on a digital asset exchange." *See* TokenHub, https://tokenhub.com/ (last accessed September 22, 2017).

[77] *See* Keane, *supra* note 2 (describing the capped sale of the BAT token); *see also* Vitalik Buterin, "Analyzing Token Sale Models," June 9, 2017, http://vitalik.ca/general/2017/06/09/sales.html (providing an overview of capped sales as of June 2017, including the BAT token and a token sale for Gnosis, a decentralized prediction market).

[78] For example, the BAT token sale lasted within 30 seconds. *See* Keane, *supra* note 2. Gnosis's token sale lasted a mere 15 minutes. *See* Alyssa Hertig, "ICO Insanity? $300 Million Gnosis Valuation Sparks Market Reaction," CoinDesk, Apr. 25, 2017. Filecoin raised $200 million in 60 minutes. *See* Stan Higgins, "$200 Million in 60 Minutes: Filecoin ICO Rockets to Record Amid Tech Issues," CoinDesk, Aug. 10, 2017. There have been some people who have raised issue with capped token sales, because they benefit "whales" or wealthy large token traders that pay high fees to beat smaller purchasers, thus precluding the wide distribution of token sales. *See* Amy Castor, "Tame the Whales? Developer Nick Johnson Thinks He Can Fix ICOs," CoinDesk, June 1, 2017 (providing an overview of this problem an outlining a potential solution to limit the effect of large purchasers in token sales).

[79] Some tokens have varied this restriction, particularly of late. For example, Protocol Labs sold a token called Filecoin, which contained transfer restrictions. *See* Protocol Labs, "Filecoin Token Sale Economics," https://coinlist.co/static/media/Filecoin-Sale-

Rather, they are actively traded on secondary cryptocurrency markets, around the globe, which list tokens and facilitate their trading, much in the same way as a stock exchange lists shares in publicly traded companies.[80] The existence of these exchanges and the ease with which it is possible to buy and sell tokens on an exchange means that even *utility tokens*—which only may entitle the holder to the use of some service or software—can generate profits if sold on exchanges for more than their purchase price.

All proceeds from the token sale go to the organization or group of developers selling the tokens. The nature of these organizations run the gamut. Some are organized as traditional business entities or not-for profit foundations.[81] Others are not formally organized—they consist of a loosely connected group of developers, and the proceeds from the token sale are distributed to those individuals.[82]

Economics.0ae9a53f.pdf. In addition, often times the organization selling a token will reserve authorized tokens for founders, early employees, and key advisors. These allocations often are placed on a vesting schedule. *See, e.g.*, *id.*; Luis Cuende, "Aragon Network Token Sales Terms: Founder Vesting, Simple Pricing and Distributio," Aragon Blog, Apr. 21, 2017 ("Vesting is a must. There are no excuses not to do it. It aligns everyone's incentives and ensures that no founder dumps happen. Founders . . . will have 2 years vesting with 6 months cliff. This means we will mature 25% of our tokens each 6 months. Early contributors, presale partners and advisors will have 6 months vesting with 3 months cliff. This means they will mature 50% of their tokens at the end of month #3, and the rest on month 6").

[80] Currently, there are handful of token exchanges that facilitate the sale of tokens, including Bitfinex, a Hong Kong based exchange, and Poloniex, a U.S. based exchange. *See* BitFinex, https://www.bitfinex.com/ (last accessed September 22, 2017); Poloniex, https://poloniex.com/ (last accessed September 22, 2017). These exchanges often enable parties to trade both protocol tokens (like bitcoin and ether), as well as app tokens.

[81] For example, several large VC-backed companies have recently engaged in token sales, receiving proceeds from the sale, in part, from traditional venture capital funds. *See* Jon Russell, "Kik Could Pave the Way for More Mainstream Tech Company ICOs," TechCrunch, Sept. 12, 2017, https://techcrunch.com/2017/09/12/kik-ico/ (noting that Kin's messaging platform Kik is engaged in a token sale, which is targeting raising $125 million, despite the fact that: it was founded in 2009; has mainstream traction via its messaging app, with 15 million monthly users; has raised more than $170 million from investors that include Chinese internet giant Tencent; and is valued at more than $1 billion); Stan Higgins, "Filecoin Presale Raises $52 Million Ahead of ICO Launch," CoinDesk, Aug. 4, 2017 (explaining how Protocol Labs sold tokens ahead of a token sale, including from large institutional venture capitalists). Other projects are organized as not for profit corporations. For example, Bancor—a protocol facilitating the exchange of blockchain-based tokens raised over $150 million through a token sale, with proceeds going to a not-for-profit corporation organized in Switzerland. *See* John Biggs, "How to Run a Token Sale," TechCrunch, Sept. 22, 2017 (noting that the Bancor "fundraiser was executed by a Swiss non-profit foundation, that has a mandate to use its funds in order to develop and promote the open-source Bancor protocol.").

[82] The most notable example of an informal group engaging in the token sale was The DAO. The DAO was not a formally organized company. Rather it was managed by several smart contracts, which managed an Ethereum-based address. That being said, there was a

Many of these projects have opted to organize outside of the United States. In particular, a number of parties engaging in an app token sale are forming not-for-profit companies in Zug, Switzerland.[83] The Swiss canton thus far has taken a *laissez-faire* approach to token sales, and local law firms have streamlined the process for handling relevant legal work.[84]

D. Growth of Protocol and App Token Sales

To date, there have been over 150 app tokens in public circulation, with a total market capitalization that has widely fluctuated, reaching over $90 billion in terms of total token supply as of September 2017.[85] Almost half of these tokens have been deployed on the Ethereum blockchain, and the majority of these tokens have been sold in 2017.[86] Token sales have been used to fund a variety of different projects, including projects in the realm of social media, the Internet of Things, advertising technology, new identity platforms, as well as financial and gambling/gaming projects.[87]

Not surprisingly, not all app token sales have been successful. While several app token sales have generated proceeds in excess of $100 million—

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centralized company, in part, behind The DAO, named Slock.it. Slock.it helped manage and promote the sale of DAO Tokens. *See* Christian Jentzsch, "The History of the DAO and Lessons Learned," Aug. 24, 2016, https://blog.slock.it/the-history-of-the-dao-and-lessons-learned-d06740f8cfa5 (describing the role of Slock.it in the development of The DAO, but noting that "Slock.it, would be just one of the many companies that would offer products and services to it.").

[83] *See, e.g.*, Biggs, *supra* note 81; Matt Chwierut, "DFINITY: a decentralized cloud governed by a distributed intelligence," Smith & Crown, Feb. 13, 2017 (noting that DFINITY raised $3.75 million in just over 24 hours through a Zug-based not-for-profit).

[84] Oliver Bussman, "Swiss Crypto Moves on Fundraising Gold Rush," FiNews, Sept. 8, 2017 ("Switzerland has been home to a glut of initial coin offerings, the digital currency version of initial public listings. The country's standards for such ICOs are laxer than in other hubs like the U.S., Singapore, South Korea, Russia move to regulate cryptocurrency offerings or even, as China did recently, ban them.").

[85] Coinmarketcap, "Marketcap of Assets by Total Supply," https://coinmarketcap.com/tokens/views/market-cap-by-total-supply/ (listing the total market cap based on the supply of tokens as $94 billion) (last accessed September 22, 2017). It is worth noting that many tokens are "locked" by the selling party. The total market cap for tokens in circulation is significantly lower, at roughly $6 billion. Coinmarketcap, "Marketcap of Assets by Circulating Supply," https://coinmarketcap.com/tokens/ (listing the total market cap based on circulating supply at $6.6 billion) (last accessed September 22, 2017).

[86] Some tokens have been issued on other blockchains including Omni, Nxt, and the Bitcoin blockchain (via Counterparty). Coinmarketcap, "Marketcap of Assets by Circulating Supply," https://coinmarketcap.com/assets/views/all/ (last accessed September 22, 2017).

[87] *See* CoinScheduler, "Cryptocurrency ICO Status 2017," https://www.coinschedule.com/stats.php?year=2017 (last accessed September 18, 2017) (providing a distribution of token sales by category).

generating headlines—other app token sales have fallen flat, generating little for the parties seeking to generate funding.[88]

Successful app token sales tend to concentrate in the hands of a few purchasers. For example, Iconomi—a new financial services company operated out of Slovenia that enables anyone to create their own investment fund comprised of other blockchain-based tokens[89]—sold an app token (ICN), receiving proceeds of $10,000,000.[90] Yet, the overwhelming majority of the tokens (81%) were sent to a mere ten blockchain-based accounts, suggesting that the sale was dominated by a few large purchasers.[91]

The same trend held for the sale by First Blood, a decentralized eSports gaming app that allowed people to play against one another and gamble on popular online games.[92] FirstBlood raised $5 million through a token sale.[93] However, roughly 74% of the tokens are held in a mere 100 accounts, suggesting a limited number of actual purchasers.[94]

The value of some of these app tokens has increased rapidly over the past several years. For example, consider Golem, a decentralized supercomputing platform,[95] that competes existing cloud service provides (like Amazon or Microsoft), by enabling anyone to the rent computing resources from others. Golem has sold an app token (called GNT) that acts as pre-paid access to the computational resources provided collectively by members of the Golem network. Even though the Golem platform has not yet

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[88] *See* Matt Chwierut, "Toke Sale Market Performance," Smith & Crown, May 25, 2017 (outlining the distribution of token sales over $25,000 and noting that more than half of all raised proceeds from sales "went to the top 10% of the projects" and noting that "[t]hese high-raise projects usually dominate news headlines about token sales, but the longer tail of smaller-raise projects is important and is often ignored.").

[89] Iconomi, "Iconomi: Open Fund Management Platform to Disrupt the Investment Industry," https://coss.io/documents/white-papers/iconomi.pdf.

[90] Sid Kalla & Matt Chwierut, "2016: The Year Blockchain ICOs Disrupted Venture Capital," CoinDesk, Jan. 8, 2017, http://www.coindesk.com/2016-ico-blockchain-replace-traditional-vc/.

[91] Etherscan, "ICONOMI Top 100 Token Holders," https://etherscan.io/token/tokenholderchart/0x888666CA69E0f178DED6D75b5726Cee99A87D698 (last accessed September 22, 2017).

[92] Matt Chwierut, "First Blood Token Sale (ICO)," Smith & Crown, Aug. 24, 207 (describing the FirstBlood token sale and underlying project); FirstBlood, https://firstblood.io/#/home (last accessed September 22, 2017).

[93] *Id.*

[94] Etherscan, "FirstBlood Top 100 Token Holders," https://etherscan.io/token/tokenholderchart/0xaf30d2a7e90d7dc361c8c4585e9bb7d2f6f15bc7 (last accessed September 22, 2017).

[95] Golum, "The Golum Project: Crowdfunding White Paper," Nov. 2016 https://golem.network/doc/Golemwhitepaper.pdf.

launched, the value of the Golem token has grown dramatically, from an initial price of $0.015 to a high of $0.70 per token, a 700% increase.[96]

Likewise, DigixGlobal sold a token "DGD" which represented an ownership interest in physical gold bullion maintained by the company.[97] The DGD token has swelled from roughly $6.30 a token to a high of over $100—for a total market cap of over $200—in little over a year and despite the fact that the project has barely inched beyond a "beta" software release.[98]

Given the dramatic rise in the price of app tokens and the ability for early purchasers to realize this gain by selling on an exchange, these new digital assets appear to have not only functional or consumptive value but also a *speculative value*, in a literal sense—the possibility or prospect of buying an token at one price and selling it in the future to someone for a higher price. Because many app tokens cap their total supply, they create artificial scarcity. Users—or potential users—of online services relying on tokens are purchasing or selling these tokens in hopes that the online service becomes popular and useful. With a limited or diminishing supply of tokens, the value of the tokens could theoretically increase, as more and more individuals or business decide to use the service, rewarding those that purchased or acquired tokens before mass adoption.

Due to this dynamic, some argue tokens will serve as a new tool to launch, fund, and generate support for new technology projects.[99] In the most

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[96] Coinmarketcap, "Golem," https://coinmarketcap.com/currencies/golem-network-tokens/ (noting that the initial value of Golem's token "GNT" was $0.015 and it swelled to nearly $0.70 in June 2017) (last accessed September 22, 2017).

[97] Anthony C. Eufemio et al., "Digix's Whitepaper: The Gold Standard in Crypto-Assets (English / 中文), Jan. 2016, https://digix.global/whitepaper.pdf.

[98] Coinmarketcap, "DigixDAO," https://coinmarketcap.com/currencies/digixdao/ (displaying a graph demonstrating that the price of the "DGD" token has traded a ranges between $6.30 in May 1, 2016 to just over $100 in May 2017) (last accessed September 22, 2017); Digix, "Dev Update 31st July 2017," July 31, 2017, https://keepingstock.net/dev-update-31st-july-2017-540eb57aea31 (providing a development update of the Digix platform and its "beta" launch).

[99] This view has been advanced by prominent venture capitalists, like Albert Wenger from Union Square Ventures and Balaji Srinivasan a Board Partner at Andreesen Horowitz. *See* Albert Wenger, "Crypto Tokens and the Coming Age of Protocol Innovation," Continuations, July 28, 2016, http://continuations.com/post/148098927445/crypto-tokens-and-the-coming-age-of-protocol; Balaji Srinivasan, "Thoughts on Tokens: Tokens are Early Today, But Will Transform Technology Tomorrow," May 27, 2017, https://news.21.co/thoughts-on-tokens-436109aabcbe; *see also* Richard Kastelin, "What Initial Coin Offerings Are, and Why VC Firms Care," Harv. Bus. Review., Mar. 24, 2017, https://hbr.org/2017/03/what-initial-coin-offerings-are-and-why-vc-firms-care ("For blockchain startups, ICOs are a win-win — they allow startups to raise funds without having equity stakeholders breathing down their necks on spending, prioritizing financial returns over the general good of the product or service itself. And there are many in the blockchain community who feel that ICOs are a long-awaited solution for non-profit foundations that

optimistic view of the technology, tokens align incentives between developers, contributors, users, and supporters of a given technology project. They are freely tradable and alienable, and anyone who wants to contribute to a project has the opportunity to get in on the ground floor. Tokens and token sale thus serve as a potent new mechanism to raise capital, attract early adopters, and generate interest from the public. If a project attracts early supporters, tokens lay the foundation for producing a network effect, thus catapulting the value and potential usefulness of the service, particularly with two-sided markets.[100]

Others see echoes of the Tulip mania that swept through Holland in the early 1630s or the Great South Sea Bubble in England in the early 1720s.[101] For them, token sales represent blind and irrational speculation that will ultimately end in financial ruin. Online services relying on tokens are modern heirs of the charlatans and fraudsters whose conduct prompted the federalization of securities regulation in the first instance. Everyday citizens will be left holding the bag, as parties selling and issuing tokens profit handsomely.[102]

The truth likely lies in between. Today, few would argue that birth of limited-liability joint stock companies during the Industrial Age transformed how humans organized their economic activities, improving economic productivity and overall wealth. Having said that, there is no question that the first few hundred years of stocks were often marked by fraud and period of irrational speculation.[103] As with any new development, the effect of tokens will depend on the use to which they are put.

While it was technically feasible to build electronically represented securities before the advent of blockchains,[104] the new technology breaks

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want to build open-source software to raise capital.").

[100] *See* Ramon Recuero, "The Token Effect," Y Combinator Blog, Aug. 16, 2017, https://blog.ycombinator.com/the-token-effect/ (describing explaining how "[t]okens allow decentralized protocols to capture the value of the network. A token is the basic economic unit in the ecosystem and should represent a scarce resource. Tokens are spent to use this resource and are earned by contributing to the network."); Nick Tomaino, "The Token Economy: Network Ownership Effects Enabled by Crypto Tokens are Fueling a New Era of Internet Products," Mar. 14, 2017, https://thecontrol.co/the-token-economy-81becd26b9de; *see also* Geoffrey G. Parker & Marshall W. Van Alstyne, *Two-sided Network Effects: A Theory of Information Product Design*. 51.10 MANAGEMENT SCIENCE 1494, 1494-1504 (2005) (describing network effects of two sided markets and the challenges of creating such effects).

[101] *See generally* Nicolaas W. Posthumus, *The Tulip Mania in Holland in the Years 1636 and 1637*, 1 J. ECON. & BUS. HISTORY (1929).

[102] *See generally* Richard Dale, THE FIRST CRASH: LESSONS FROM THE SOUTH SEA BUBBLE (2004).

[103] *Id.*

[104] Indeed, the 1978 amendments to Article 8 of the Uniform Commercial Code sought

down barriers and dramatically reduces the cost of issuing, trading, and managing the sale of both securities and other assets worldwide. Anyone with access to an Internet connection and a computer now can issue a security and represent that security as a token. Moreover, due to the disintermediated and transnational nature of a blockchain, these investment tokens can be bought and sold in any country and by any person with an Internet connection, and they can be freely traded across the globe often on unregulated exchanges.

In a sense, blockchains do to finance what the Internet did to copyright during the late 1990s and early 2000s by making it increasingly easy to create, disseminate, and trade securities and other assets in ways that were not available before. Before the advent of the Internet, it was possible to create, reproduce, and disseminate copyrightable content digitally—by, for example, swapping floppy disks. But, these files were difficult to transmit and often required the use of physical media as a method of transfer. Copyright infringement occurred, but not at an intolerable volume.

With the growth of the Internet and the a newfound ability to send digital files to anyone, anywhere across the globe, copyright infringement grew exponentially.[105] In reaction, governments and legislatures were forced to act, passing new laws, like the Digital Millennium Copyright Act ("DMCA"), to shield intermediaries from copyright liability.[106] Ultimately,

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to "reduce the need for handling paper in the securities markets and to accommodate an increasing use of electronic information technology. It provided for paperless, intangible 'uncertificated' securities." Steven L. Harris & Charles W. Mooney, *Negotiability, Electronic Commercial Practices, and A New Structure for the UCC Article 9 Filing System: Tapping the Private Market for Information Technology*, 31 IDAHO L. REV. 835, 837 (1995). These amendments were retained in the 1994 revisions. *See* U.C.C. § 8-102(a)(18) (defining an uncertificated security).

[105] These risks were obviously known before the Internet gained mainstream adoption. For example, influential futurist Ithiel de Sola Pool noted in 1983 that "For copyright, the implications [of electronic publishing] are fundamental. Established notions about copyright become obsolete. rooted as they are in the technology of print. The recognition of a copyright and the practice of paying royalties emerged with the printing press. With the arrival of electronic reproduction, these practices become unworkable. Electronic publishing is analogous not so much to the print shop of the eighteenth century as to word-of mouth communication, to which copyright was never applied." ITHIEL DE SOLA POOL, TECHNOLOGIES OF FREEDOM 214 (1983).

[106] As recognized by scholars at the time, "the emergence of electronic networks ha[d] undeniably placed significant pressure on . . . existing intellectual property system." Eric Schlachter, *The Intellectual Property Renaissance in Cyberspace: Why Copyright Law Could be Unimportant on the Internet*, 12 BERKELEY TECH. L.J. 16 (1997). This lead, in part, to the implementation, of the Online Copyright Infringement Limitation of Liability Act ("OCILLA")—a part of the DMCA—which created a conditional safe harbor for "internet service providers" and other online intermediaries from claims of copyright infringement arising from, *inter alia*, linking to copyright-protected materials and hosting copyright infringing materials uploaded by the service provider's users if the service provider adopted and reasonably implement a policy of addressing and terminating accounts of users who are

mass copyright infringement, facilitated by Internet technologies, caused courts to re-examine theories of secondary copyright liability to account for a new generation of online services unimaginable before the digital age.[107]

Blockchain-based tokens are creating a similar situation. Software developers can use blockchain technology to create investment tokens and engage in public offerings simultaneously in potentially every jurisdiction across the globe. The cost of structuring this offering is lower than the cost of engaging in such sales previously and requires minimal ongoing monitoring or enforcement on the part of the selling party. These tokens can be widely dispersed and purchased by anyone with an Internet connection.[108]

In effect, the distributive power of the Internet is being combined with the raw power of a blockchain to manage and transfer assets globally. This combination has extraordinary potential for capital formation, streamlining a once cumbersome process of raising funding and holding out the hope of democratizing access to capital and unleashing untapped entrepreneurship.

At the same time, however, when digital goods—which are meant to be consumptive in nature—are tokenized and are sold online using blockchain technology, they begin to resemble securities. Just like how blockchains break down barriers related to the sale of digitized securities, blockchains also decrease the cost of selling and managing the sale of digital goods, making them highly liquid. These goods become capable of being traded or transferred by anyone and to anyone around the globe, all facilitated by token exchanges.

In this regard, digital goods (like an API key or pre-paid access to online services), which before blockchains, could not be reasonably viewed as securities begin to resemble securities once they are tokenized. These digital goods are no longer bought and sold, in bilateral transactions between a supplier and a purchaser, but rather are widely available and accessible through market-based exchanges found across the globe. Due to the distributed nature of a blockchain, tokenized representations of digital goods or other assets become fungible, exhibiting characteristics of securities because they can increase in value and can be sold to fund new projects.

II. APP TOKENS UNDER U.S. SECURITIES LAWS

The recent explosion of tokens sales raises obvious questions surrounding their status under U.S. securities laws, an inquiry governed by a complicated body of case law and administrative materials applying a test

found to be "repeat infringers" and did not interfere with "standard technical measures" that copyright owners use to identify or protect copyrighted works. *See* 17 U.S.C. § 512.

[107] *See* note 7 *supra*.

[108] *See* Part I.B *supra*.

first articulated by the United States Supreme Court in *SEC v. W.J. Howey Co*.[109] Within this framework, significant uncertainty as to whether digital tokens will be treated as securities exists. For investment tokens, which assign economic rights to their holders, the analysis is relatively straightforward. These are often securities dressed in different clothing and thus would be subject to U.S. securities laws.

For *utility tokens*, however, the analysis is more muddled. These tokens combine functional and consumptive elements with high liquidity and speculative value in a way that presents novel issues under the *Howey*. Because they entitle the holder to use a service or software, they have a practical use and derive value from the rights they confer on their holders. They also, however, can appreciate in value and, for this reason, present opportunities for speculation. In a sense, they resemble event tickets, rare wines, artwork, or other collectibles, but this analogy is limited. The existence of exchanges that facilitate an active secondary market as well as the use of advance token sales to finance completion of the project are important ways that *utility tokens* differ from these more traditional, non-securities that combine consumption with the potential for profit.

In this Section, we provide an overview of the U.S. securities laws, with emphasis on the *Howey* test. We discuss the application of that test to digital tokens and concludes that there is significant uncertainty as to the status of tokens, particularly *utility tokens.* We further consider the possibility that token sellers can organize their sales to comply with one of the major registration exemptions and conclude that this is not currently a viable path for the organizers of token sales to ensure regulatory compliance.

A. Overview of U.S. Securities Laws

The Securities Act of 1933 ("Securities Act")[110] provides the statutory framework for federal regulation of securities offerings. Prior to the passage of this act, offerings of securities were regulated at the state level. These state "blue sky laws" were typically merits-based: state governments either approved or disapproved the offering of a security depending on its perceived merit.[111]

After the stock market crash of 1929, Congress inserted the federal government into the mix with the Securities Act. Unlike the state blue sky laws, the Securities Act and its sister statute, the Securities and Exchange Act

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[109] *SEC v. W.J. Howey Co.*, 328 U.S. 293, 298-99 (1946).

[110] 15 U.S.C. § 77a *et seq.* Of course, after a company goes public, it is subject to ongoing disclosure requirements, which are primarily imposed by the Securities and Exchange Act of 1934. *See id.*

[111] Mark A. Sargent, *A Future for Blue Sky Law*, 62 U. CIN. L. REV. 471, 473 (1993).

of 1934,[112] reflect a regulatory approach that seeks to protect investors by ensuring that they receive information relating to the security being offered. Rather than giving the SEC the authority to approve securities based on their merits, the Securities Act requires that securities sold through a public offering be registered with the SEC[113] and that the issuer disclose a variety of information to investors in connection with the registration requirement.[114] The Exchange Act subjects the issuers to ongoing disclosure requirements after the public sale of its securities; both statutes include antifraud provisions.[115]

This regulatory regime applies only when a transaction involves a security.[116] If the subject of transaction is not a security, the Securities Act does not apply. The term "security" is defined broadly and includes a variety of common investment mechanisms, like stocks and bonds, as well as a catch-all term—"investment contract"—intended to capture innovative financial arrangements that are, in substance, securities but which do not take the form of a traditional security included in the definition.[117] Whether or not a token is subject to the securities laws will depend on whether it is an investment contract.[118]

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[112] 15 U.S.C. § 78a *et seq*.

[113] As described further below, there are exemptions to the registration requirement.

[114] Zachary J. Gubler, *Public Choice Theory and the Private Securities Market*, 91 N.C. L. REV. 745, 747 (2013).

[115] *See* 15 U.S.C. § 78j (Section 10b); 17 C.F.R. § 240.10b-5 (Rule 10b-5). Rule 10b-5 prohibits the use of any "device, scheme, or artifice to defraud," and creates liability for any misstatement or omission of a material fact, or one that investors would think was important to their decision to buy or sell the stock. Courts held early on that investors can sue, and the scope of liability is broad: a wide range of participants, from brokers to issuers to company employees may be liable, provided that the fraud was "in connection with" a securities purchase or sale. The fraud is considered to be "in connection with" a securities transaction, if it was material to the decision to buy or sell a security.

[116] 15 U.S.C. § 77e ("Unless a registration statement is in effect, as to a *security* . . . .").

[117] *Id.* § 77b(a)(1) ("The term 'security' means any note, stock, treasury stock, security future, security-based swap, bond, debenture, evidence of indebtedness, certificate of interest or participation in any profit-sharing agreement, collateral-trust certificate, preorganization certificate or subscription, transferable share, investment contract, voting-trust certificate, certificate of deposit for a security, fractional undivided interest in oil, gas, or other mineral rights, any put, call, straddle, option, or privilege on any security, certificate of deposit, or group or index of securities (including any interest therein or based on the value thereof), or any put, call, straddle, option, or privilege entered into on a national securities exchange relating to foreign currency, or, in general, any interest or instrument commonly known as a 'security', or any certificate of interest or participation in, temporary or interim certificate for, receipt for, guarantee of, or warrant or right to subscribe to or purchase, any of the foregoing.")

[118] *See,* The DAO Report, *supra* note 5. In finding that DAO Tokens were securities, the SEC applied the *Howey* test and concluded that the tokens were investment contracts.

The question of whether a transaction involves an "investment contract" is one of substance not form and turns on a test adopted by the Supreme Court in *SEC v. W.J. Howey Co*.[119] Under the *Howey* test, an investment contract is "a contract, transaction or scheme whereby [1] a person invests his money [2] in a common enterprise and [3] is led to expect profits solely from the efforts of the promoter or a third party."[120] The test "embodies a flexible rather than a static principle" and was aimed to cover "the countless and variable schemes devised by those who seek the use of the money of others on the promise of profits."[121]

B. *Status of Application Tokens Under U.S. Securities Laws*

As we show below, the current test for an investment contract has no categorical resolution when it comes to app tokens and in particular *utility tokens*. Although certain aspects of the *Howey* test are straightforward other components implicate novel issues relating to the scope of U.S. securities regulation. This difficulty primarily arises from the dual nature of many *utility tokens*: they are consumptive insofar as they entitle their holders to access a technological service, but they also can be used by some purchasers as an investment opportunity. The nature of *utility tokens* makes categorical determinations about their status under U.S. securities laws impossible and subjects token sellers to significant uncertainty as to their regulatory obligations.

1. Investment of Money

In the context of blockchain-based tokens, the first prong of the *Howey* test—an investment of money—is relatively straightforward. The term "money" has not been strictly limited. For purposes of assessing whether an arrangement will be construed as a security, money may include not only the provision of cash. Goods, services, promissory notes, and other "exchanges of value."[122] can constitute "money" for this purpose.[123]

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[119] 328 U.S. 293 (1946).

[120] *Howey*, 328 U.S. at 298-99.

[121] *Id.*

[122] *Uselton v. Commercial Lovelace Motor Freight, Inc.*, 940 F.2d 564, 574-75 (10th Cir. 1991); *see also Frazier v. Manson*, 484 F. Supp. 449, 452 n.5 (N.D. Tex. 1980) (limited partnership interests received in exchange for services, rather than money, met the ""investment of money"" requirement although limited parters participation in day-to-day operation of the business precluded security status due to *Howey*'s efforts of others requirement).

[123] *See, e.g.*, *Int'l Bhd. Of Teamsters v. Daniel*, 439 U.S. 551, 560 n.12 (1979); *Hector v. Wiens*, 533 F.2d 429, 432-33 (9th Cir. 1976); *Sandusky Land, Ltd. V. Uniplan Groups,*

Purchasers of app tokens (both *utility* and *investment*) generally pay with a digital currency, like bitcoin or ether, and thus will satisfy the first prong of *Howey*. Despite departing from many traditional notions of what money is (*e.g.*, digital currency involves no physical bills or coinage), app tokens are routinely exchanged for increments of traditional fiat currency and can be used for a variety of transactions in which valuable goods and services are exchanged. For this reason, at least two courts have determined that Bitcoin qualifies as money for purposes of both anti-money laundering statutes[124] and the Securities Act of 1933.[125] In short, whether it is because virtual currencies are treated as the equivalent of traditional fiat currency or because they involve an exchange of value, the purchase of an app token with virtual currency likely meets this prong of the *Howey* test.[126]

2. Common Enterprise

The second prong of the *Howey* test—common enterprise—"focus[es] on the extent to which the success of the investor's interest rises and falls with others involved in the enterprise."[127] The *Howey* Court did not explain precisely what it meant by a "common enterprise," and lower court opinions have developed at least three ways of approaching this issue: "horizontal commonality," "broad vertical commonality," and "narrow or strict vertical commonality."[128]

Inc., 400 F. Supp. 440, 445 (N.D. Ohio 1975).

[124] *United States v. Faiella*, 39 F. Supp. 3d 544, 545 (2014) ("Bitcoin clearly qualifies as 'money' . . . under these plain meaning definitions. Bitcoin can be easily purchased in exchange for ordinary currency, acts as a denominator of value, and is used to conduct financial transactions.").

[125] *SEC v. Shavers*, Civ. No. 4:13–CV–416, 2013 WL 4028182, at *2 (2013) ("First, the Court must determine whether the BTCST investments constitute an investment of money. It is clear that Bitcoin can be used as money. It can be used to purchase goods or services, and as Shavers stated, used to pay for individual living expenses. The only limitation of Bitcoin is that it is limited to those places that accept it as currency. However, it can also be exchanged for conventional currencies, such as the U.S. dollar, Euro, Yen, and Yuan. Therefore, Bitcoin is a currency or form of money, and investors wishing to invest in BTCST provided an investment of money.")

[126] Some commentators analyze the distinction between a purchasers' consumption expectation and an investors' profit expectation under the rubric of whether or not there has been an investment—rather than just a payment—of money. We address these issues below in connection with the "expectation of profits" prong of the Howey test. *See, e.g.*, Joan MacLeod Heminway & Shelden Ryan Hoffman, *Proceed at your Peril: Crowdfunding and the Securities Act of 1933*, 78 TENN. L. REV. 879, 895-98 (2011).

[127] Miriam R. Albert, *The Howey Test Turns 64: Are the Courts Grading This Test on a Curve?*, 2 WILLIAM & MARY BUS. L. REV. 1, 16 (2011).

[128] *Id*; *see also* THOMAS LEE HAZEN, THE LAW OF SECURITIES REGULATION § 1:52 (2016).

The horizontal commonality test requires multiple purchasers (more than one) who are all exposed to the risk of the enterprise. This typically means that their monetary investments have been pooled and that they stand to enjoy gain or suffer losses according to the success of the enterprise.[129]

Vertical commonality "focuses on the relationship between the investor and the promoter."[130] The narrow test requires that "the fortunes of the investor are interwoven with and dependent upon the efforts and successes of those seeking the investment or of third parties."[131] This test typically requires that the promoter (or third party) have a financial stake in the enterprise such that the promoter bears the risk of loss and the potential for gain alongside the investor. The broad version of vertical commonality requires that the investor's outcome be dependent on the promoter's efforts or expertise; it does not require that the promoter's fortune rise and fall with that of the investor (as is the case with narrow vertical commonality), only that the investors are dependent upon the efforts of the promoter.[132]

Like the investment of money prong, most tokens will meet at least one (if not more) of the tests currently utilized. Of course, determining precisely which version of commonality will suffice to establish a common enterprise is a surprisingly difficult undertaking. Circuit Courts have reached disparate outcomes on which variety (or varieties) they will recognize as satisfying *Howey*'s common enterprise requirement, and in many circuits the validity of one or more versions of commonality has not yet been decided.[133] We address all three below.

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[129] *See, e.g.*, *SEC v. Infinity Group Co.*, 212 F.3d 180, 188 (3d Cir. 2000) (citing various authorities); *Steinhardt Group Inc. v. Citicorp*, 126 F.3d 144, 151 (3d. Cir. 1997).

[130] James D. Gordon III, *Defining a Common Enterprise in Investment Contracts*, 72 OHIO ST. L.J. 59, 67 (2011); s*ee also* Hazen, *supra* note 128, at § 1:52.

[131] *SEC v. Glenn W. Turner Enterprises, Inc.*, 474 F.2d 476, 482 n.7 (9th Cir. 1973); *SEC v. SG Ltd.*, 265 F.3d 42, 49 (1st Cir. 2001).

[132] *See, e.g.*, *Revak v. SEC Realty Corp.*, 16 F.3d 81, 87-88 (2d Cir. 1994) ("To establish broad vertical commonality, the fortunes of the investors need be linked only to the efforts of the promoter. Strict vertical commonality requires that the fortunes of investors be tied to the fortunes of the promoter") (internal citations and quotations omitted). *See also Long v. Shultz Cattle Co., Inc.*, 881 F.2d 129, 140-41 (5th Cir. 1989) ("While our standard requires interdependence between the investors and the promoter, it does not define that interdependence narrowly in terms of shared profits or losses. Rather, the necessary interdependence may be demonstrated by the investors' collective reliance on the promoter's expertise even where the promoter receives only a flat fee or commission rather than a share in the profits of the venture.").

[133] *See, e.g.*, Gordon, *supra* note 130 ("The circuit courts of appeal are profoundly divided over the definition of a common enterprise. The Third, Sixth, and Seventh Circuits require horizontal commonality. By contrast, the Fifth and Eleventh Circuits use broad vertical commonality. The First, Fourth, and D.C. Circuits accept horizontal commonality but have not ruled on vertical commonality. The Second Circuit accepts horizontal commonality, rejects broad vertical commonality, and has not ruled on narrow vertical

Most *utility* and *investment* tokens will meet the horizontal commonality test insofar as they are typically sold to more than one purchaser, and the received funds are pooled to finance the project. In the case of *investment* tokens, like DAO Tokens, that entitle their holders to a share of the earnings generated by the enterprise, the investors' dependence on the success of the enterprise is clear. Even in the case of *utility* tokens, however, both their consumptive and speculative value will rise and fall with the success of the enterprise—if the project is completed as intended, the *utility* token will be more useful, and it will also, presumably, have a higher value on token exchanges than they would had the project not been completed successfully. For these reasons, both utility and investment tokens will likely meet the horizontal commonality test in most situations.

Vertical commonality may present a more difficult question on account of variations in the way that a seller is linked to token purchasers. In the case of broad vertical commonality, it seems that both *utility* and *investment* tokens are likely to meet the requirements of the test insofar as the value of the token (whether consumptive, speculative, or based on some income stream generated by the enterprise associated with the token) will be likely to depend on the efforts of the promoters in developing and completing the project.

Narrow vertical commonality, however, generally requires that the promoters have some financial stake in the enterprise—the applicable test requires that their fortunes rise and fall with those of investors.[134] In the case of tokens, this may or may not be the case. Sellers may very well have their own financial interest in the enterprise (*e.g.*, receive a token allocation of their own), but they might not. It will depend on the terms of the particular sale. In the case of *investment* tokens, in which proceeds will be distributed to token holders, retention of tokens by the selling party would almost certainly create narrow vertical commonality. In the case of *utility* tokens, however, the argument could be made that even if the party receives an allocation of tokens, the promoter's fortunes are not sufficiently tied to those of the investors—no profits are being distributed to anyone, and to the degree the promoter and investor's fortunes are tied together, it is only with respect to consumptive and, perhaps, speculative interests.

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commonality. The Ninth Circuit recognizes both horizontal commonality and narrow vertical commonality. The Tenth Circuit has rejected a requirement of horizontal commonality in favor of an "economic reality" approach.).

[134] *See, e.g.*, SEC v. Pinckney, 923 F. Supp. 76, 82 (E.D.N.C. 1996) ("Accordingly, the court adopts the strict vertical commonality approach; a common enterprise may be established by showing that the investor's profits are directly tied to the promoter's profits.").

3. Expectation of Profits from the Efforts of Others

Howey's final prong, the profit expectation requirement, has two components: (1) at the time of purchase, the investor must have a reasonable expectation of profits; and (2) those profits (if realized) must result from the efforts of others. The United States Supreme Court has, on occasion, articulated a narrow view of what constitutes profits, indicating that it means "either capital appreciation resulting from the development of the initial investment . . . or a participation in earnings resulting from the use of investors' funds."[135] More recently, however, the Court has indicated that the word "profit" is not limited to a strict accounting definition. Instead, in this context it means "income or return, to include, for example, dividends, other period payments, *or the increased value of the investment*."[136]

a. Profits, Not Consumption

To meet the first component (that there be an expectation of profits), the purchaser's motivation must be securing "a financial return," not consumption or use.[137] If the purchaser is motivated by a desire for use or consumption, the transaction does not involve a security.[138] The United States Supreme Court first recognized the distinction between purchasers whose expectations are related to consumption and those whose have an expectation of profits in *United Housing Foundation, Inc. v. Forman*,[139] which addressed the status of shares in a housing corporation that entitled the owner to occupy an apartment.[140] Despite the fact that purchasers bought shares of stock in the cooperative, the Court found that they were motivated by a desire to occupy an apartment, not to secure return on an investment. The shares were subject to a variety of restrictions and limitations on resale, and the Court looked to these restrictions and to the nature of long-term housing in a cooperative to find that the purchasers had an expectation of consumption, not profit.[141]

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[135] *United Housing Foundation, Inc. v. Forman*, 421 U.S. 837, 852 (1975).

[136] *SEC v. Edwards*, 540 U.S. 389 (2004) ("Concededly, *Forman*'s illustrative description of prior decisions on 'profits' appears to have been mistaken for an exclusive list in a case considering the scope of a different term in the definition of a security, 'note.' But that was a misreading of *Forman*, and we will not bind ourselves unnecessarily to passing dictum that would frustrate Congress' intent to regulate all of the 'countless and variable schemes devised by those who seek the use of the money of others on the promise of profit.").

[137] *SEC v. Life Partners, Inc.*, 87 F.3d 536, 547 (D.C. Cir. 1996).

[138] *Id.*; *Ricke v. Braniger Organization, Inc.*, 922 F.2d 788, 791 (11th Cir. 1991) (holding that purchases of lots and memberships in adjacent country club were not securities).

[139] 421 U.S. 837 (1975).

[140] *Forman*, 421 U.S. at 837.

[141] *Id.* Similarly, under the consumption/investment distinction, the SEC has indicated it would take no action against the sale of unregistered bonds to finance construction of an

Kickstarter (more accurately the companies and individuals that fund their projects on the platform) provides a contemporary example of the consumption versus investment distinction in action. Because funders will receive a product in the future in exchange for their payment, these transactions are typically not subject to the securities laws.[142] For much the same reason various collectibles and rare items are not considered securities, even though they may generate a financial return or profit on secondary markets. As discussed more fully below, the expectation of profit requirement has uncertain application to app tokens, particularly *utility tokens*.

For some app tokens, the distinction between a profit interest and consumption will be manifest. *Investment tokens* bestow express economic rights on their holders, and these economic rights are, at least in part, why purchasers buy these tokens. Again, the DAO is instructive here: Holders of DAO tokens were entitled to receive a share of the profits generated by the projects that the DAO funded, and these economic rights (along with the opportunity to participate in the DAO's funding decisions) were the reason DAO tokens were purchased. The SEC has recognized this in relation to DAO tokens, finding in its recent Report of Investigation that because "DAO Token holders stood to share in potential profits" from the projects funded by the DAO "a reasonable investor would have been motivated, at least in part, by the prospect of profits on their investment."[143]

In the case of *utility tokens*, however, the distinction between consumption and profit often becomes harder to tease apart. The *Forman* distinction between consumption and profit expectations certainly provides sellers of *utility* tokens a strong argument against treating them as securities. Because these tokens entitle the holder to access an online service or serve other functional purposes, elements of consumption are present. Industry participants have focused on this consumptive aspect of app tokens to argue that as a class, they fall outside of the securities laws. Nevertheless, as our description of app tokens above in Section I demonstrates, they also arguably include a speculative component. For this reason, the status of app tokens under U.S. securities laws is less certain that many current and potential token sellers and their advisors appear to believe.

Utility tokens confer on their owners some right that is typically consumptive in nature—the ability to participate on a messaging platform,

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assisted-living center in which bondholders would reside and receive medical care pursuant to services contracts coupled with the bonds. *Spring Life Care Community*, SEC No Action Letter, 1985 WL 54240 (Apr. 17, 1985).

[142] C. Steven Bradford, *Crowdfunding and the Federal Securities Laws*, COLUM. BUS. L. REV. 1, 32 (2012) ("Contributors on reward or pre-purchase sites are offered no financial return of any kind. They are promised only a product or service-a consumption item. Therefore, no investment contract is being offered.").

[143] The DAO Report, *supra* note 4.

for example, or to view surf the Internet free of ads. However, the tokens—and the rights they confer—are not specific to the initial purchaser of the token. They are alienable and are actively traded on a variety of online exchanges and platforms.[144] However attractive these tokens may be to some purchasers on account of their consumptive potential (and no doubt there are some purchasers who are primarily motivated by consumption), there are also purchasers motivated by the potential financial gains that would result from an increase in the value of the token on the secondary market.[145] It also seems likely that many purchasers are unsure, at the time of purchase, whether they will "consume" the token or sell it—a rational economic actor would base this decision on whether she can sell the token for more than she values the right conferred by the token.

App tokens, in other words, present a hybrid or mixed transaction in which elements of consumption and investment are intertwined. Mixed transactions are certainly not new. Given the investment based focus of securities regulation, it is unsurprising that most status determinations that turn on the distinction between consumption and profit expectations involve at least some degree of investment alongside consumption: Even in *Forman*, where the Supreme Court first addressed the role of consumptive intent in determining status as a security, the matter involved at least some degree of profit potential insofar as residents of the housing cooperative could enjoy reduced fees on account of revenue received by the cooperative from lessors of commercial space also owned and managed by the housing corporation.[146] According to the Court, however this profit potential was simply insufficient to confer security status in light of fundamental consumptive nature of the transaction (securing entitlement to a home).[147]

In light of *Forman,* the SEC has issued No-Action Letters when faced with mixed transactions in which the consumptive element outweighs the profit motivation. The Ticket Reserve, Inc., for example, secured a No-Action Letter for a trading platform involving event tickets that it planned to design and operate.[148] Its platform would allow sellers and buyers of tickets to a variety of events to identify one another and arrange transactions

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[144] *See* Part I.B *supra*.

[145] Nathaniel Popper, "Easiest Path to Riches on the Web? An Initial Coin Offering," N.Y. Times, June 23, 2017, https://www.nytimes.com/2017/06/23/business/dealbook/coin-digital-currency.html.

[146] *Forman*, 421 U.S. at 856-57.

[147] *Id.* at 857.

[148] *The Ticket Reserve, Inc.*, SEC No-Action Letter, 2003 WL 22195093 (Sept. 11, 2003); *see also San Francisco Baseball Associates, LP*, SEC No-Action Letter, 2006 WL 488513 (Feb. 24, 2006) (no-action letter issued in relation to service operated by San Francisco Giants to assist in matching buyers and sellers of seat license that entitled the holder to purchase season tickets).

bilaterally. The Ticket Reserve acknowledged that some would use the platform to attempt to buy and sell tickets for profit but argued that in light of the platform's design and operation, it would be too speculative for any investor to have an expectation of profit: The Ticket Reserve would not guarantee any liquidity, would not guarantee a buyer, and would not repurchase any tickets in the event no buyer is available. Sellers of memberships in country clubs, golf clubs, and sports clubs have also secured No-Action Letters on account of the profit/consumption distinction.[149]

On the other hand, when the expectation of profit dominates any expectation of consumption, a mixed transaction will be treated as involving a security. Another high-profile case involving televangelists Jim and Tammy Faye Bakker demonstrates such a situation. In that case, *Teague v. Bakker*, the Fourth Circuit reversed a trial court order granting the defendants judgment as a matter of law on the basis that the "lifetime partnerships" offered by Jim Bakker were not, in fact, securities.[150] These partnerships were sold to finance the construction of Heritage Village, a "vacation park" attached to Bakker's pre-existing "Christian retreat center," Heritage USA. Purchasers of these units were guaranteed annual lodging at the vacation park for a certain period of time each year. Despite the obvious consumptive element of the lifetime partnerships (lodging for a particular time each year), the Fourth Circuit held that the directed verdict was inappropriate—the partnerships were advertised as entitling holders to discounted lodging privileges worth far more than the price paid for the interests and were led to believe that this was made possible by the renting out of 50% of the site to the general public at non-discounted prices.[151] Because the promotional "materials allow[ed] the reader to infer that the value of the [lifetime partnerships] was enhanced by virtue of the commercial activities of the PTL facilities in catering to patrons paying full price," there was sufficient profit potential for a jury to find that they were securities, notwithstanding the aspect of consumption represented by entitlement to lodging at Bakker's facility.[152]

As *Forman* and *Bakker* demonstrate, mixed transactions can go in either direction. Much depends on the intent of the purchasers (consumption or profit-seeking)[153] and, in this regard, the materials used to promote the

[149] *Olohana Golf Club, Inc.*, SEC No-Action Letter, 2003 WL 21831944 (July 31, 2003) (golf club in Hawaii); *Manchester Country Club*, 1999 WL 301382 (May 13, 1999) (golf and country club in New Hampshire).

[150] 35 F.3d 978 (11th Cir. 2002).

[151] *Bakker*, 35 F.3d at 988-89.

[152] *Id.* at 989.

[153] *See, e.g.*, *SEC v. Goldfield Deep Mines of Nevada*, 785 F.2d 459, 464 (1985) ("It is of added significance that during trial, investors testified that they had enrolled in Goldfield's ore purchase program with the expectation of profit.").

"opportunity" to purchasers are important.[154] If those materials emphasize the profit potential, it is more likely that the offering is of a security. Inclusion of features intended to make it more difficult for purchasers to subsequently realize an appreciation in value cut against security status. *Forman* is, again, instructive insofar as the shares were subject to a variety of restrictions on transferability. A resident who wished to terminate her occupancy was required to first offer the shares to the housing corporation *at the initial price*. In the event the corporation chose not to exercise this right (which the Court characterized as "extremely unlikely"), the shares could only be sold to certain third parties for no more than "the initial purchase price plus a fraction of the portion of the mortgage" that the resident had paid off.[155]

Take, as another example, the No-Action Letter issued by the SEC in relation to seat licenses (which both entitled and obligated the holder to purchase season tickets) issued by the San Francisco Giants and a proposed service to be operated by the Giants that would match buyers and sellers of seat licenses.[156] Notably, the seat licenses were transferable only with the permission of the Giants, and licensees warranted that they were acquiring the seat licenses for their own use only (consumption) and not for transfer, distribution, or resale. Similarly, in the No-Action Letter issued in relation to the bonds sold to finance the construction of an assisted living center, the SEC indicated that it had given "particular consideration" to the fact that "the bonds [were] non-transferable and [would] not appreciate in value . . . ."[157]

When *utility tokens* are considered in light of both case law and administrative materials, the uncertainty surrounding their status becomes apparent. No doubt, there is an element of consumption present in *utility tokens*, which makes it possible to fashion arguments under *Forman* and analogize to situations in which the SEC has issued No-Action letters in the past. Nevertheless, they also have speculative value and afford their holders the possibility of selling in the future at a profit. They are highly liquid, and restrictions on transferability are not common—if they were, the active secondary market that has emerged over the past few years would simply not be possible. It is not apparent that courts tasked with determining the status of *utility tokens* would find that the purchasers' consumption interest outweighs any profit expectation in all instances.

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[154] *Fogel v. Sellamerica, Inc.*, 445 F. Supp. 1269, 1277 (S.D.N.Y. 1978) ("[T]he court must consider the motivation of the purchaser as well as the promotional emphasis of the developer.") (internal citations omitted).

[155] *United Housing Foundation, Inc. v. Forman*, 421 U.S. 837, 843 (1975).

[156] *San Francisco Baseball Associates L.P.*, SEC No-Action Letter, 2006 WL 488513 (Feb. 24, 2006).

[157] *Spring Park Life Care Community*, SEC No-Action Letter, 1985 WL 54240 (Apr. 17, 1985).

Muddying the waters further is the fact that the features of *utility tokens* and the motivations of their investors are not standardized. It is completely plausible that one token, exhibiting one set of features, offers primarily consumptive value (and therefore is not a security) while another, exhibiting a different set of features, offers primarily speculative value and therefore is a security. Categorical determinations on this issue are not simply not possible under the relevant authorities that control today.

b. Efforts of Others

Under the second component of *Howey*'s final prong, the expected profits must result from the efforts of others. Although the *Howey* Court's formulation of the test indicated that the profits must result "solely" from the efforts of others, subsequent case law has relaxed this requirement and instead focuses on whether the efforts of others are "entrepreneurial or managerial" in nature and the degree to which the efforts of others are required to generate the profits.[158] This is to say that minor investor involvement in the generation of profits will not automatically take a transaction out of the scope of the Securities Act, but it does cut against security status. If the generation of profits is primarily dependent on the efforts of investors, however, their involvement will preclude a finding that the transaction involves a security. Although courts employ a variety of formulations,[159] the relevant questions are the amount of control that the purchaser maintains over the operation and the degree and ways in which investor participates.[160] As is so often the case, the issue is one of line-drawing and is highly dependent on the facts and circumstances presented by a given situation

Some tokens—in particular many *utility tokens*—do not entitle their holders to any degree of participation in or control over the development of the project. Initial purchasers pay for the token in digital currency, and owning it enables them to either utilize the technology when it is completed

[158] *See, e.g.*, *United Housing Foundation, Inc. v. Forman*, 421 U.S. 837 (1975); *Int'l Bro. of Teamsters, Chauffeurs, Warehousemen and Helpers of America v. Daniel*, 439 U.S. 551, 561 (1979) (formulating the investment contract test requiring that the profits result from the entrepreneurial or managerial efforts of others).

[159] *See* ARNOLD S. JACOBS, 5B DISCLOSURE & REMEDIES UNDER THE SEC. LAWS 9:69 (2017) (listing a variety standards applied by lower courts in the "efforts of others" context, all of which focus on the nature of any efforts contributed by the investor and the degree of control retained by investors).

[160] *See, e.g.*, *SEC v. Unique Financial Concepts, Inc.*, 196 F.3d 1195, 1201 (11th Cir. 1999) ("[T]his Court has clearly stated that the crucial inquiry for the third prong is the amount of control that the investors retain under their written agreement.") (internal citations, quotations and brackets omitted).

or transfer the token to someone else. They do not participate in the enterprise as it is being developed, and they do not control how the sellers of these tokens work toward completing the project for which the tokens were sold. In these situations, the efforts of others certainly predominate and may even predominate to a degree that would satisfy a narrow reading of "solely."

On the other hand, some *utility tokens* allow their holders to participate in certain decisions related to the enterprise, and it is conceivable that such participation, if sufficiently extensive, could call into question the security status of the token. The point at which participation by token holders will take the enterprise outside of the definition of security (because the relevant efforts are no longer efforts of others) is only visible with hindsight. Variation in the voting and participation rights extended to token holders is another issue that prevents categorical determinations as to the security-status of *utility tokens*.

Even in the case of *investment tokens,* the "efforts of others" prong may also lead to differing, and possibly counterintuitive results. Because these tokens may give their holders rights to participate in managerial decision making, some *investment tokens* may not ultimately qualify as securities even though the expectation of profits is express. In the realm of more traditional business arrangements, interests in general partnerships and joint ventures are typically not considered securities for precisely this reason. General partners and venturers typically have the ability to participate in the management of the enterprise, so any profits generated are not from the efforts of others, as required by the *Howey* test.[161]

DAO Tokens again provide a helpful example of how the "efforts of others" can make assessing the status of investment tokens difficult. As discussed above, DAO Tokens allowed their holders to vote on the projects that The DAO would fund. The fundamental purpose of The DAO was to provide funding to proposed projects and to generate profits for its token holders by retaining an entitlement to a share of the profits generated by the projects it funded. Because each token holder was entitled to participate in each funding decision, it is at least arguable that token holders participated sufficiently in the profit-making activities of the enterprise to remove the tokens from the definition of security.[162] In its Report of Investigation with regard to DAO Tokens, the SEC rejected this position for two reasons. According to the SEC, (1) opportunities presented to DAO Token holders

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[161] *Williamson v. Tucker*, 645 F.2d 404, 421 (1981) ("[A] general partnership or joint venture interest generally cannot be an investment contract under the federal securities acts.").

[162] *See, e.g.*, *Steinhardt Group Inc. v. Citicorp.*, 126 F.3d 144 (3d Cir. 1997); *Nichols Charolais Ranch, Inc. v. Barton*, 460 F. Supp. 228, 231 (M.D. Fla. 1975), *aff'd*, 587 F.2d 809 (5th Cir. 1979).

were vetted and filtered by a variety of individuals (including the co-founders of The DAO) prior to being submitted to token holders for a vote; and (2) DAO Tokens were "widely dispersed and limited in their ability to communicate with one another."[163]

The SEC's account may not be factually or legally accurate and may, therefore, not be adopted by a court called upon to litigate the issue in the future. First, as to the supposed dispersion, ten accounts owned over 20% of total DAO Tokens, with the top 100 accounts accounting for roughly 47% of DAO token ownership. These accounts tended to be clustered, indicating that The DAO was substantively controlled by only a handful of token holders.[164] Second, it is unclear that the mere fact that token holders were only able to vote on projects after a group of individuals vetted them means that the token holders are sufficiently dependent on their efforts to deem DAO Tokens securities. In the partnership context, for example, delegation of managerial authority to a committee does not convert a general partnership interest into a security,[165] so it does not necessarily follow that token holders' reliance on a small group of individuals to vet and clear funding opportunities means that the profits generated flowed from the efforts of others, particularly when the ultimate decision depends on a vote. Even with regard to investment tokens in which the profit expectation is clear, the particular rights that a token bestows upon its holder make categorical determination of security status impossible. An investment token that gives its holders sufficient control and participation rights may be more akin to an interest in a general partnership or joint venture than a security.

Another relevant consideration is the timing of the efforts in relation to the sale, and in this regard, tokens differ. Some tokens are sold prior to the commencement of the project and most of the efforts will occur post-sale. Others are sold when the project has been completed (or when it is close to completion), and in these situations, the relevant efforts will occur primarily prior to the sale.

The timing of the sale in relation to the efforts of others affects both the likelihood of consumption and the degree to which the purchaser is dependent on the efforts of others. Tokens sold after the project is complete carry with them a higher consumption interest—these are tokens which can be used immediately to access a service. The likelihood that the token will be used for consumption and that the purchaser intends consumption seems higher when the token purchased immediately entitles the holder to utilize a service. Furthermore, after completion of the project, the value of the token

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[163] The DAO Report, *supra* note , at 14.

[164] Johannes Pfeffer, "A Network View of The DAO (Part 1)," May 26 , 2016, https://medium.com/@oaeee/a-network-view-on-the-dao-61081f72c418.

[165] *New York Stock Exchange, Inc. v. Sloan*, 394 F. Supp. 1303, 1314 (S.D.N.Y. 1975).

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(and therefore any profit potential) primarily depends on the demand for the technology that the token entitles the holder to use. The token thus no longer strictly depends on the successful completion of the project, and thus no longer relies on the managerial or entrepreneurial efforts of others. In this regard, tokens sold after a project launched appear to be more like a commodity whose value is dependent on market fluctuations. Precisely for this reason, Courts and the SEC have found that certain contracts involving the sale of commodities do not involve securities when the investor's return is dependent on the market.[166] This is another area in which tokens can differ greatly, preventing any sort of categorical determination. Some are sold at the outset of the project's development, before any real steps have been taken toward the project's completion. With these tokens, the efforts of others do seem to dominate both the utility and speculative value of the token. Others are sold after completion or as completion nears. For these, the consumption interest appears to be much greater insofar as the token can be used immediately or very soon after purchase. The resale value of these tokens also seems to be less tied to the ongoing managerial and entrepreneurial efforts of others and, instead, is reliant on the usefulness and desirability of the technology to which the token is tied.

This relevance of the timing of the efforts was recognized explicitly by the District of Columbia Circuit in *SEC v. Life Partners, Inc.*[167] This case involved viatical settlements, which are financial contracts in which investors purchase fractional shares in life insurance policies. The policyholder received funds, and the investor eventually received a portion of the policy pay-out after the policyholder's death. In a controversial decision, the D.C. Circuit Court of Appeal declined to apply the securities laws to the viatical

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[166] *See, e.g.*, *Noa v. Key Futures, Inc.*, 638 F.2d 77, 79 (9th Cir. 1980) (holding that contract for sale of silver in which seller promised to store silver for one year and also to buy back silver at the spot price published in the Wall Street Journal was not a security because "the profits to the investor depended upon the fluctuations of the silver market"). When ongoing entrepreneurial or managerial efforts determine the return, however, involvement of a commodity or other asset subject to market fluctuations does not prevent a finding that the transaction involves a security. *See, e.g.*, *Glen-Arden Commodities, Inc. v. Costantino*, 493 F.2d 1027 (2d. Cir. 1974) (holding that sales of warehouse receipts for Scotch whiskey were investment contracts because the seller chose the whiskey, arranged for its storage, and agreed to either find buyers or buy the whiskey back); s*ee also Gary Plastic Packaging Corp. v Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 756 F.2d 230 (2d Cir. 1985). In this case, the Second Circuit held that certificates of deposit sold by Merrill Lynch (but issued by other banks) to investors were securities even though CDs generally do not fall within the purview of the securities laws. The purchasers' returns were reliant on Merrill Lynch's efforts insofar as Merrill Lynch negotiated with issuing banks for interest rates, created a secondary market on which the CDs could be bought and sold, and monitored the issuing banks on an ongoing basis. *Id.* at 240-41.

[167] 87 F.3d 536, 547 (D.C. Cir. 1996).

settlements offered by Life Partners, Inc. because the relevant efforts occurred prior to the sale. Before making sales to investors, LPI would evaluate the policyholder, his or her medical condition, and the relevant insurance polices and also negotiate the purchase price and prepare necessary documentation.[168] As *Life Partners* Court explained, "if the value of the promoter's efforts has already been impounded into the promoter's fees or into the purchase price of the investment, and if neither the promoter nor anyone else is expected to make further efforts that will affect the outcome of the investment, then the need for federal securities regulation is greatly diminished."[169] Although *Life Partners* is not the majority view, it does support drawing a distinction between tokens sold at the beginning of a project and those sold at the end of a project and is consistent with those cases in which courts have held that assets whose value depends on external forces, like market fluctuations, are not securities. This distinction appears even more persuasive in this context than it did in the context of viatical settlements on account of the consumption interest that characterizes *utility tokens*. As the project comes to completion, consumption becomes more likely, and it would certainly be reasonable to argue that as the likelihood of completion increases, the relative significance of the consumption interest also increases.

C. App Tokens and Registration Exemptions

Given the difficulty in applying the *Howey* test to *utility tokens* and even some investment tokens, there appears to be a high risk of inconsistent case law or an overly broad application of these laws when courts and the SEC are faced with questions related to this technology. If this occurs, subjecting token sellers and exchanges to significant regulatory uncertainty, a second set of issues will come into focus—whether it is possible to structure token sales to fit within various exemptions from Section 5 registration requirements and, if possible, whether it makes business sense to do so. Based on the level of funding being raised in connection with utility token sales, the global nature of these sales the number of tokens sold, and the active resale market for tokens, existing securities exemptions are not particularly well-suited for this new funding mechanism. As currently conceived, these exemption create the risk of channeling a large portion of inherently consumptive goods that could benefit many, into the hands of the few. Laws enacted at a time when it was impossible to contemplate today's wave of digital and financial innovation would have the effect of excluding everyday consumers from an entire generation of digital technology.

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[168] *Id.*

[169] *Id.* at 547.

1. Section 4(a)(2) Exemption

Section 4(a)(2) of the 1933 Act creates a transaction exemption for sales that do not involve a public offering.[170] Determining whether or not an offering falls within this exemption requires consideration of the number of offerees as well as their relationship to one another and the issuer; the number of units of offered; the size of the offering; and the manner of the offering.[171]

As they are currently conducted, token sales almost certainly do not constitute exempted private placements: the number of purchasers is typically high, and purchasers are dispersed and often remain unknown due to the pseudonymous process.

Token sales usually include a large number of tokens (e.g., over 100 million for the recent sale of FileCoin, described further below), and the total amounts raised have recently been in the tens, if not hundreds of millions of dollars.[172] As to resale, token sales are typically conducted through online websites and portals, another fact which makes them look more public than private. For these reasons, the statutory exemption for transactions "not involving a public offering" is unlikely to provide token sellers with a reliable avenue to compliance with the securities laws.

2. Regulation D

Regulation D also offers two exemptions from the Section 5 registration requirement: Rule 504[173] and 506.[174] Despite being "housed" in the same regulation, Rules 504 and 506 correlate to two different statutory provisions and, for this reason, differ in their criteria.

Rules 504 was adopted pursuant to Section 3(b)(1) of the 1933 Act, which allows the SEC to develop exemptions that cover offerings of up to $5 million provided the exemption is consistent with the public interest.[175] Accordingly, Rule 504 provides an exemption for offerings that do not exceed $5 million. While there are no limitations on the type of investor (*i.e.*, securities can be sold to unsophisticated investors) or the number of

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[170] 15 U.S.C. § 77d(a)(2).

[171] *SEC v. Continental Tobacco Company of South Carolina, Inc.*, 463 F.2d 137 (1972). These four factors originate from a 1935 Release issued by the SEC's General Counsel. Sec. Act Release No. 285 (Jan. 24, 1935), Fed. Sec. L. Rep. (CCH) 2740.

[172] *See* Part I.C *supra*; Protocol Labs, "Filecoin Token Sale Economics," https://coinlist.co/static/media/Filecoin-Sale-Economics.0ae9a53f.pdf (noting that FileCoin engaged in a token sale that would issue "200,000,000" filecoin).

[173] 17 C.F.R. § 230.504.

[174] *Id.* § 230.506. It previously included a third exemption, Rule 505, but its repeal became effective on May 22, 2017.

[175] 15 U.S.C. § 77c(b)(1).

purchasers, securities sold pursuant to Rule 504 "cannot be resold without registration under the Act or an exemption."[176] Additionally, Rule 504 offerings must also comply with applicable state blue sky laws, which can include registration and merits review of the security.

Rule 506 offers a safe harbor that will bring an offering within Section 4(a)(2).[177] Unlike Rule 504, Rule 506 does not limit the amount raised, but it does limit the number of investors that can participate if the offering is not limited to accredited investors.[178] Unlike Rule 504 offerings, Rule 506 offerings are not subject to state blue-sky laws.[179]

Of particular importance to token sales, securities sold in a Rule 504 or Rule 506 placement are restricted securities, which means that they cannot be resold by the initial purchaser for a period of time in the absence of registration or another exemption.[180] For token sales, this is problematic. Initial token purchasers would be unable to sell their tokens without registering or fitting them within another exemption. This is in obvious tension with the highly liquid secondary market for tokens that currently exists. There is no doubt that this market allows some market participants to treat tokens as a pure investment vehicle, but this is only part of the story. This market also serves to allocate real rights of consumption to those who value them most—in other words, completely aside from enabling some token holders to attempt to profit from the appreciation in value, these markets contribute to social welfare by enabling the efficient allocation of the right to use newly developed technology. Restricting the transfer of tokens is not only an issue for token sellers and initial purchasers looking to turn a profit. It would also negatively impact individuals who have a real need for a particular digital service and are willing to pay for it. Thus, as currently conceived, neither Rule 504 and 506 fit token sales particularly well and would have the effect of preventing everyday U.S. consumers from interacting with novel and potentially useful online services.

Notwithstanding the issues raised by the transfer restrictions, Rule 506 holds out some advantages for token sales (at least as compared to Rule 504)—there is no cap on the amount that can be offered, and it is possible to avoid limitations on the number of investors by limiting it to accredited

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[176] 17 C.F.R. § 230.506(d).

[177] *Id.* § 230.506(a) ("Offers and sales of securities by an issuer that satisfy the conditions in paragraph (b) or (c) of this rule shall be deemed to be transactions not involving any public offering within the meaning of section 4(a)(2) of the Act.").

[178] *Id.* § 230.506 (b)(2). Rule 506 provides that there shall be no more than 35 purchasers. Rule 501(e)(4), however, provides that accredited investors will not count toward this limitation.

[179] 15 U.S.C. § 77r(b)(4).

[180] Transfer restrictions appear in Rule 502, 17 C.F.R. § 230.502(d), but are incorporated into both Rules 504 and 506. *See* 17 C.F.R. § 230.504(b); *id.* § 230.506(b).

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investors.[181] Some token offerings have taken this step and require purchasers to qualify as accredited investors. Nevertheless, the transfer restrictions are problematic insofar as they would bar the securities from being sold on token exchanges after the initial sale for at least a year and thus could deprive parties from accessing and using *utility tokens* for potentially useful online services.[182]

To illustrate the uneasy fit between token sales and the current regime of securities regulation, take the recent token sale for Filecoin, a decentralized file sharing system: Filecoin aims to decrease the cost of storing and accessing files online by building a network of individual computers that will store small pieces of files uploaded to the network.[183] To manage and keep track of members' contributions to the network, Filecoin relies on a native token to keep track of files flowing through the network. Those that store parts of files for others on the network earn and receive Filecoin from other users for dedicating hard drive space to the network.[184]

Protocol Labs, the party behind the Filecoin network and token, structured the sale as a 506(c) private placement. It relied on CoinList, a centralized intermediary in part developed by Protocol Labs, to manage the sale of Filecoin, while the underlying technology was further developed.[185] The mechanics of the sale centered on a Simple Agreement for Future Tokens (a "SAFT"), which by its terms was characterized as a security.[186] Filecoins

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[181] Pursuant to Rule 501(e), accredited investors are excluded in counting the number of investors for purposes of the Rule 506(b) maximum of 35 investors. 17 C.F.R. § 230.501(e). Rule 506(c) (which allows issuers to engage in general solicitation and advertising) is limited to offerings that only involve accredited investors. *Id.* § 230.506(c).

[182] Rule 144 governs the resale of restricted securities, such as those sold pursuant to Regulation D. In addition to other requirements, this Rule requires that the restricted securities be held for a certain period of time prior to resale – in the case of securities issued by a non-reporting company, the holding period is one year. *Id.* § 144(d)(1)(ii).

[183] Juan Benet, "Filecoin: A Decentralized Storage Network," Protocol Labs, July 24, 2017, https://coinlist.co/static/media/Filecoin-Whitepaper.504569e3.pdf. In other words, "Filecoin is a decentralized storage network that turns cloud storage into an algorithmic market. The market runs on a blockchain with a native protocol token (also called "Filecoin"), which miners earn by providing storage to clients. Conversely, clients spend Filecoin hiring miners to store or distribute data."

[184] *Id.*

[185] *Id.*; CoinList, https://coinlist.co/ (noting that CoinList was partnership between Protocol Labs and AngelList) (last accessed September 22, 2017).

[186] *See* Protocol Labs, "Form SAFT (A Simple Agreement for Future Tokens)," https://coinlist.co/static/media/Protocol%20Labs%20-%20SAFT%20for%20Filecoin%20Token%20Presale.6ddb6fb6.pdf (providing in Section 4(b) of the agreement a representation that "Purchaser has been advised that this instrument is a security and that the offers and sales of this instrument have not been registered under any country's securities laws and, therefore, cannot be resold except in compliance with the applicable country's laws.").

were sold to verified accredited investors through a sale that ultimately resulted in a total of $257 million in proceeds for Protocol Labs.[187]

Protocol Labs intends to deliver tokens to holders once the underlying Filcoin network is developed and launched.[188] Its position is that even though the SAFT was an admitted security, the underlying subject matter of the security—the Filecoin token—is not. In effect, Protocol Labs is attempting to analogize the use of the SAFT to a forward contract, whereby Protocol Labs sells tokens ahead of time to a buyer in the future.[189]

However, it is unclear whether the SAFT will limit the risk that a Filecoin is deemed a security. When Protocol Labs delivers the tokens to SAFT holders the underlying Filecoin token will still need to be evaluated under *Howey*'s test for an investment contract. And, delaying the timing on the delivery of Filecoins will not necessarily pull Filecoins out of *Howey's* broad definition of an investment contract, because the timing of the "efforts" of the selling party is but one factor in assessing whether a sale involved an investment contract. Indeed, whether the underlying Filecoin tokens will be deemed a security likely will turn—not only the timing of when Filecoins were delivered—but also on whether parties that receive Filecoins through the SAFT tokens due to an "expectation of profits."

Here, the profit and speculative motives of those obtaining Filecoins through the SAFT appear to predominate, at least for a large subset of future Filecoin holders. As part of the sale, Protocol Labs sold nearly $52 million worth of Filecoin to venture capital funds and prominent angel investors—

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[187] *See* Stan Higgins, "$257 Million: Filecoin Breaks All-Time Record for ICO Funding," Sept. 7, 2017, https://www.coindesk.com/257-million-filecoin-breaks-time-record-ico-funding/.

[188] Protocol Labs, "Filecoin Token Sale Economics," https://coinlist.co/static/media/Filecoin-Sale-Economics.0ae9a53f.pdf ("The SAFT is a fundraising instrument and legal agreement between two parties, where one party (the buyer) buys tokens to be delivered at a future date by the other party (the seller), after the Network Launch or some other event important to the creation of a crypto token network.").

[189] Such a characterization, however, is a bit incongruous, because the SAFT is modeled closely on a popular financing document—a "Simple Agreement for Future Equity" or SAFE—developed by the large Silicon Valley accelerator Y-Combinator (or "YC"). Under the SAFE, purchasers receive preferred equity in the future, generally at a discount, when a company hits a financing milestone. *Id.* ("The Simple Agreement for Future Tokens (SAFT) is a legal agreement, similar to the YC SAFE. Think of it a bit like a forward contract — the seller (Protocol Labs) sells tokens ahead of time to a buyer (you); the seller must then build the network, and deliver the tokens at Network Launch in the future."); *see also* Y Combinator, "Startup Documents: Safe Financing Documents," Feb. 2016, https://www.ycombinator.com/documents/. The triggering event for the issuance of tokens under the SAFT is a not a future financing event, but rather a "network launch" or "a bona fide transaction or series of transactions, pursuant to which the Company will sell . . . Tokens to the general public in a publicized product launch." *See* SAFT Project, "The SAFT Project: The SAFT Forms," http://saftproject.com/ (last accessed October 3, 2017).

organizations and individuals that routinely purchase securities and thus presumably purchased these tokens in such large quantities because they viewed them as potentially valuable assets that would increase in value.[190] These venture capital funds and sophisticated angel investors were not motivated by the consumptive aspects of the token. Rather, they entered into these transactions with an express expectation that they would generate profit.[191]

Indeed, this understanding is expressly affirmed under the terms of the SAFT. When entering into this agreement, purchasers and future holders of Filecoins represented that they were "enter[ing] into th[e] SAFT with the predominant expectation that (i) he, she or it, as the case may be, will profit upon the successful development and Network Launch arising from the efforts of the Company and its employees to develop and market the Filecoin Network, the Network Launch and related sale of the Tokens; and (ii) the Company will make actual delivery of the tokens to the Purchaser upon the Network Launch."[192]

By relying on the SAFT structure, Protocol Labs has chosen to treat Filecoins as investment vehicles, at least implicitly. As to those token holders who receive Filecoins through a SAFT, Filecoins are not simply functional digital assets that represent pre-paid access to a decentralized file sharing system. They are also an express means to generate profits and a return on an investment, a fact admitted by SAFT holders.

Even without such an express admission, the investment intent is evident from the fact that the return enjoyed by those holding Filecoin will depend on the value of Filecoins going forward and may depend on the ongoing efforts of Protocol Labs after the project is operational. This will almost certainly be relevant to the issue of whether Filecoins themselves are

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[190] Higgins, *supra* note 81 (noting that "notable backers of the Filecoin pre-sale include Union Square Ventures and Sequoia Capital, according to a representative of the startup," as well as "Winklevoss Capital, Digital Currency Group and Y Combinator president Sam Altman.").

[191] Many of these large venture capital funds received tokens at a discount even as compared to other accredited investors who were able to participated in the Filecoin token sale. These advisors were sold FileCoins at a maximum price of $0.75, while other accredited investors paid up to $5.00 for a Filecoin. By the end of the sale, the value of a Filecoin resulted in more than a six-fold increase in the price per token, at least on paper, indicating a potential for profit. Protocol Labs, "Filecoin Token Sale Economics," https://coinlist.co/static/media/Filecoin-Sale-Economics.0ae9a53f.pdf.

[192] Protocol Labs, "SAFT for Filecoin Token Presale (Series S-2), https://coinlist.co/static/media/Protocol%20Labs%20-%20SAFT%20for%20Filecoin%20Token%20Presale.7d759ef3.pdf. This structure has now been generalized by Protocol Labs as the "SAFT Project." *See* SAFT Project, "The SAFT Project: The SAFT Forms," http://saftproject.com/ (last accessed October 3, 2017) (emphasis added).

securities. The fact that the Filecoins will be delivered in the future, after the network launches, is not dispositive under *Howey*. The inquiry still will center on whether holders of Filecoins expect to generate a profit substantially based on Protocol Labs's efforts and will still require an ad hoc case-by-case basis.

If Filecoins are in fact deemed securities, it would create complications for Protocol Labs. Because Protocol Labs sold these tokens pursuant to Rule 506(c), if these tokens are characterized as securities, they will need to be sold as restricted securities and will need to somehow include a legend outlining the terms of the restrictions.[193]

Assuming restricted legends can somehow be imprinted or associated with these tokens, purchasers will have limited avenues to transfer these "restricted tokens" once sold. Filecoins will need to be held by purchasers for a holding period, and they can be transferred only pursuant to certain limited exceptions under other securities exemptions.[194]

For example, token holders not affiliated with Protocol Labs could avail themselves of Rule 144 of the Securities Act of 1933 and sell these tokens after the holding period.[195] Alternatively, holders of Filecoins could engage in a Rule 144A offering, which would permit these token holders to avoid the holding period by selling these restricted securities to qualified institutional buyers ("QIBs"), such as saving and loans associations, banks, investment and insurance companies, and employee benefit plans.[196] They

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[193] Securities issued under Rule 506 (the Section 4(2) safe harbor) are "restricted securities" under Rule 144, and under Rule 502(d), the issuer must "exercise reasonable care to [ensure] that the purchasers of the securities are not underwriters within the meaning of [Section 2(a)(11)]" (*i.e.*, they are not purchasing with a view to distribution of the securities). *See* 17 C.F.R. § 230.502(d). Rule 502(d) provides that "reasonable care" may be demonstrated by the following (which are not exclusive): (1) reasonable inquiry to determine whether the purchaser is acquiring the securities for the purchaser's own benefit or for others; (2) written disclosure to each purchaser before sale that the securities have not been registered under the Securities Act (*i.e.*, that they are restricted) and, therefore, cannot be resold unless they are registered or an exemption from registration is available; and (3) placement of a legend on the certificate or other document that evidences the securities stating that the securities have not been registered and describing or referring to the restrictions on transferability and resale of the securities (known as a "restrictive legend"). 17 C.F.R. § 230.502(d)(1)-(3); *see also* Regulation D Release, Securities Act Release No. 6825, Fed. Sec. L. Rep. (CCH) ¶ 84,404, at 80,048 (Mar. 14, 1989).

[194] *Id.*

[195] 17 C.F.R. § 230.144; *see also* Hazen, *supra* note 128, at § 4:106 (providing an overview of a the safe harbor exemption for secondary transactions under SEC Rule 144).126, at § 4:106 (providing an overview of a the safe harbor exemption for secondary transactions under SEC Rule 144).

[196] This is also known as a Section 4(1 1/2) exemption. For an overview of this exemption see Hazen, *supra* note 128, at §§ 4:107-112.126.

further could resell these tokens to purchasers outside of the U.S. under Regulation S, assuming that the Filecoin will not flow back into the U.S.[197]

Under such a scenario, the only parties that can hold these tokens—without subjecting Protocol Labs to potential securities laws violations—will be the initial accredited investors, large institutions, or foreign investors. The end result could hurt U.S. consumers. If Filecoin becomes an important and widely used technology—as some argue—U.S. consumers may not be able to purchase these tokens without creating significant securities risks for Protocol Labs.

3. Regulation A

Regulation A offers another potential avenue for exempting token sales from the Section 5 registration requirement if the seller is sufficiently concerned about security status and does not want to undertake a full Section 5 registration. Although it was previously limited to offerings of $5 million or less, the JOBS Act required the SEC to amend Regulation A to exempt security offerings of up to $50 million.[198] The resulting amendments to Regulation A (Regulation A+ as it has come to be known) provide a route for issuers to conduct offerings that look similar to SEC-registered public offerings but relax many of the more onerous requirements.[199] Importantly, Regulation A offerings are not subject to transfer restrictions—the securities sold pursuant to a Regulation A offering can be resold.[200] However (and perhaps as a result of the fact securities in a Regulation A offering are not subject to transfer restrictions), issuers are required to file an offering statement and disclose much of the information that they would have to include in a going-public registration statement (*e.g.*, financial statements that are compliant with GAAP).[201]

Regulation A authorizes two tiers of offerings, and these differ in amount and with regard to certain investor limitations and post-sale

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[197] 17 CFR § 230.904 (safe harbor for offer or sales of securities by non-issuers that are deemed to be conducted offshore).

[198] 15 U.S.C. § 77c(b)(2).

[199] Anzhela Knyazeva, "Regulation A+: What Do We Know So Far?," https://www.sec.gov/files/Knyazeva_RegulationA%20.pdf. ("Overall, early signs indicate that Regulation A+ may offer a potentially viable public offering on-ramp for smaller issuers—an alternative to a traditional registered IPO").

[200] Hazen, *supra* note 128, at § 117 ("There are no required restrictions on resales of securities offered under Regulation A."). 129, at § 117 ("There are no required restrictions on resales of securities offered under Regulation A.").

[201] *See generally* 17 C.F.R., Ch. II, Pt. 230 (Regulation A).

requirements.[202] Tier 1 applies to issuances up to $20 million.[203] They are not restricted to any particular type of investor, nor is there a limit on the amount that investors can invest. Tier 1 offerings are still subject to state blue sky laws, however. Tier 2 applies to issuances up to $50 million.[204] They are also open to both accredited and non-accredited investors, but non-accredited investors can only invest a limited amount based on their income or net worth. Unlike Tier 1, Tier 2 offerings are exempt from state blue sky laws.

Because of the amounts that are possible to raise with a Regulation A offering, registration under Section 12(g) of the Exchange Act is another consideration. The Securities Exchange Act requires that issuers with assets in excess of $10 million and a class of equity securities held of record by either more than 500 non-accredited investors or 2,000 persons register that class of securities with the SEC.[205] This, in turn, activates the 1934 Act's requirements of periodic reporting, proxy regulation, and the reporting of certain transactions involving insiders. Regulation A does carve-out an exception from registration under Section 12(g),[206] but it is limited to Tier 2 offerings that meet certain criteria including, a requirement that these issuers engage a transfer agent and have under $75 million in public float.[207]

With regard to token sales, Regulation A appears to have more potential than the exemptions offered under Regulation D. The limitations on amounts raised are significantly higher (although still less than the amounts that have been raised in some of the largest recent token sales), and the lack of transfer restrictions would allow issuers to sell tokens without restricting their resale on token exchanges. The prospect of registration under Section 12(g) is, however, problematic.[208]

In this regard, the exception for Tier 2 offerings could prove useful for token sales, but the requirement that a transfer agent be utilized is completely inconsistent with the technology that underlies these digital assets. Blockchains are, at their core, a technology that renders third-party intermediaries like transfer agents unnecessary. Transfer agents perform

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[202] 17 C.F.R. § 230.251(a).
[203] *Id.* § 230.251(a)(1).
[204] *Id.* § 230.251(a)(2).
[205] 15 U.S.C. § 78l(g).
[206] SEC Rule 12g5-1(a)(7).
[207] *Id.*
[208] The Section 12(g) registration requirement applies to equity securities. It is not completely clear that utility tokens would qualify as such—they do not entitle holders to a share of any profit and do not appear to represent a residual claim, even the event of liquidation of the enterprise. They do, however, entitle the holder to use a service—in other words, they are owed something by the enterprise when they redeem their token. To the extent the need to classify tokens as either equity or debt arises, there do appear to be strong arguments that utility tokens are more like traditional debt securities than equity securities.

primarily administrative functions, such as issuing and canceling certificates to reflect changes in ownership; paying out interest, dividends, or other distributions to stock- and bond-holders, and mailing out reports and proxy material; and handling lost, stolen, or destroyed certificates.

These functions could be handled by a smart contract or are simply unnecessary for *utility tokens*. For example, many *utility tokens* currently do not pay interest or dividend payments. And—because blockchains are tamper resistant data structures—tokens cannot be lost or destroyed unless an entire blockchain is compromised. The distribution of reports and other materials could be conceivably triggered by a smart contract themselves or become less necessary if the holder of the token has no control over the development of the underlying software service or no other form of control. Requiring the use of transfer agents to facilitate the exchange of tokens obviates the technological innovations that are at their core and prevents parties from availing themselves of the benefits of blockchain technology.

Likewise, there may be difficulty for Tier 2 offerings due to the $75 million limitation on the total public float of utility or investment tokens. Several tokens already have a public floats that exceeds this amount after their value usually denominated in a bitcoin is converted into dollars.[209] This sort of limitation would have the effect of artificially suppressing the supply of technological services by limiting the number of tokens available. For those apps that depend on users to host data or complete certain tasks (in addition to those which look to network effects to increase value over time), an artificial ceiling on the number of tokens (and therefore the number of users) would have serious negative effects on the viability and functionality of the underlying digital service to which a token correlates.

4. Regulation Crowdfunding

Given the surface-level similarities between crowdfunding and token sales, this Article would not be complete without a discussion of Regulation Crowdfunding,[210] a recently adopted exemption that allows issuers to sell up to $1,070,000 worth of securities during a 12-month period. Because of this limitation, Regulation Crowdfunding is almost certainly a non-starter for organizers of token sales.

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[209] Coinmarketcap, "All Tokens," https://coinmarketcap.com/tokens/view/all (listing 34 out of a total 268 tokens with a market cap higher than $75 million). https://coinmarketcap.com/tokens/view/all (listing 34 out of a total 268 tokens with a market cap higher than $75 million).

[210] 17 C.F.R. § 227.100 *et seq.* This exemption was adopted pursuant to Section 4(a)(6) of the Securities Act of 1933. 15 U.S.C. § 77d(a)(6).

Additionally, Regulation Crowdfunding requires that the offering take place through a platform provided by a broker-dealer or funding portal, a requirement which is obviously tailored specifically to crowdfunding and not to token sales.[211] Again, reliance on blockchain technology obviates the need for intermediaries. Ownership of each token as well as transfers of ownership from one holder to another are executed and recorded on the blockchain. Securities sold pursuant to Regulation Crowdfunding are also subject to transfer restrictions,[212] which are problematic for the reasons discussed above. Together, the low limitation on the amount that can be raised, the intermediary requirement, and transfer restrictions make Regulation Crowdfunding a poor fit with token sales.

III. REGULATION OF TOKEN SALES UNDER U.S. SECURITIES LAWS

The uncertainty created by *utility tokens* and lingering questions related to how these tokens can be squared with existing exemptions to various disclosure requirements leaves the U.S. and its capital market participants in difficult situation. The U.S.'s current piecemeal approach under the *Howey* test—although flexible—will have negative consequences for token sellers, token purchasers, and others involved in the sale or exchange of these tokens. If token sales do indeed represent an important new avenue for entrepreneurial financing, this approach threatens the U.S.'s competitive position in the quickly-developing world of financial technology. At the same time, however, the ad hoc approach provides the SEC with an opportunity to play an outsized role in the development of an entirely new class of assets. Balance is key.

For this reason, as we argue below, both Congress and the SEC should take action to provide token sellers and exchanges with additional predictability and a sensible path to compliance by: (1) having the SEC issue guidance as to how it will apply the *Howey* test to tokens, in particular *utility tokens*; (2) creating a compliance-based safe harbor for token exchanges that list tokens under a reasonable belief that the public sale of those tokens will not violate Section 5 of the Securities Act; and (3) creating an exemption that is specifically tailored for *investment tokens* (but which would also be available for *utility tokens* that qualify as securities).

A. The Costs of the Current Piecemeal Approach

As demonstrated in Section II above, regulation of token sales under the status quo will necessarily be piecemeal and incremental. Purchasers will

[211] 17 C.F.R. § 227.100(a)(3).
[212] *Id.* § 227.501.

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receive inconsistent protections from one transaction to another, and designers of tokens will be forced to labor under considerable uncertainty, at least until a sufficient number of cases and administrative materials have addressed the major issues presented by app tokens. This applies equally to the token exchanges who face the risk of liability for trading unregistered securities. Unless they are operating at the extremes of spectrum in which status is clear, the designers of tokens and the exchanges will have a difficult time determining whether they are preparing to sell a security or not. Assuming a desire to comply with the applicable regulatory regime, this puts token sellers as well as the exchanges on which they trade in a difficult position—their compliance obligations depend on a determination of whether or not they are selling a security, but this is a question for which there is currently no readily apparent answer. And, if the SEC depends on its typical methods for answering this question (enforcement and no-action letters), there will be limited certainty surrounding these determinations for some time.

This uncertainty will create strong incentives to engage in regulatory arbitrage, and in the case of tokens, large scale migration to non-U.S. jurisdictions is a real possibility. Ultimately, this would have negative consequences for the U.S. financial system and put a new generation of technological advancement off-limits to most U.S. citizens. Put simply, in our increasingly global economy, parties who are currently in the U.S. and are interested in selling app tokens can look elsewhere to build an launch their projects.

Provided they are willing to organize the sales in ways that should not present issues for typical token-funded projects, token sellers seeking increased regulatory certainty can choose to conduct the sale outside of the U.S. Regulation S provides safe harbors pursuant to which issuers can structure their offerings so that they are deemed to be conducted outside the U.S.[213] The SEC has issued guidance, and token sales could be conducted on the Internet and still qualify as taking place outside of the U.S. if the relevant website takes precautions designed to prevent making sales to residents of the U.S.[214]

Sellers of tokens could also structure themselves to qualify foreign private issuers under Rule 405 of Regulation C, provided they are organized in a foreign jurisdiction, 50% or less of its outstanding voting shares are held by U.S. citizens or residents, and it does not maintain certain degree of

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[213] *See generally* 17 C.F.R. § 230.901 *et seq.*

[214] *Statement of the Commission Regarding Use of Internet Websites to Offer Securities, Solicit Securities, Transactions or Advertise Investment Services Offshore*, International Series Release No. 1125, 1998 WL 135626 (Mar. 27, 1998).

business contacts with the U.S.[215] Although this status does not automatically exempt a foreign private issuer from the Section 5 registration requirement, it does make it easier for the issuer to avail itself of Regulation S. For organizers of token sales, securing foreign private issuer status is within reach. These are typically enterprises that require no central physical location and few physical assets. The work required to complete the project can be completed anywhere with a reliable internet connection. Required physical assets are minimal, and many of them will be owned by the software developers and other technologists who work on the projects (who themselves can be dispersed globally) and not by any legal entity whose securities are being sold. As noted above, the potential for regulatory arbitrage is not hypothetical—it is becoming more and more commonplace for organizers to form business entities in Switzerland to take advantage of the country's regulatory approach, which, so far, leaves token sellers with considerable room to experiment with token design.[216]

An ad hoc, case-by-case approach to security status may have worked previously, when sellers of securities (or contracts that would potentially be deemed securities) could not engage in regulatory arbitrage as easily. The sales of orange grove interests that were at issue in *Howey*, for example, could not easily be taken outside the jurisdiction of the SEC and U.S. securities laws. Sales of app tokens and the online projects that they support, on the other hand, can be taken outside the purview of U.S. law and regulators more cheaply and much more easily. A haphazard or over-inclusive regulatory approach will drive token sales outside of the U.S. and out of the reach of U.S. purchasers. The relevant question for regulators, then, is whether maintaining a particular regulatory approach is worth driving these projects outside of the U.S., depriving would-be U.S. end users of the ability to use new digital technology, and ultimately forcing U.S. companies to forego the new generation of financial techniques. Significantly, because *utility tokens* are the key to using the services that they fund, a regulatory approach that drives token sales away from the U.S. is ultimately keeping those services out of the reach of all U.S. citizens, even those who have only an expectation of consumption.

At the same time, there is no denying that app token sales create risks of fraud and abuse. A completely hands-off approach to the regulation of digital tokens would ignore this reality. No doubt, the SEC has a role to play in the prevention of fraud in connection with the sale of tokens that are clearly securities and present the risks traditionally associated with securities.

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[215] 17 C.F.R. § 230.405. Disqualifying business contacts include: (1) having a majority of officers or directors be U.S. citizens or residents; (2) more than 50% of the company's assets are in the U.S.; and (3) the business is principally administered in the U.S.

[216] *See* note 84 *supra*.

However, fraud prevention and investor protection are not the SEC's only missions. The agency also has a mandate to encourage and facilitate capital formation,[217] and it is our position that this objective counsels in favor of providing token sellers and exchanges with a more predictable regulatory framework.

When evaluating the costs and benefits of potential regulation, it is essential to recognize that the SEC is not the only regulatory agency with authority to police for bad behavior when it comes to app token sales. If *utility tokens* are not categorically deemed securities, they are best analogized to digital goods or commodities, and would likely fall under the purview of the Federal Trade Commission ("FTC") and the Consumer Financial Protection Bureau ("CFPB").[218] Both of these agencies police for acts or practices that are manipulative, fraudulent, deceptive, or unfair to consumers and could address fraudulent or ill-conceived app tokens or token sales that do not involve securities.[219]

The SEC does not shy away from a regulatory turf wars,[220] and its recent entry into the world of tokens demonstrates its intention to claim jurisdiction over at least a portion of the field. The SEC has preferred to regulate through methods that foster some degree of unpredictability (no-action letters and enforcement, rather than rule making), which "maximizes the effective scope of the Commission's jurisdiction . . . ."[221] The potential involvement of other regulatory agencies magnifies the consequences of this approach—there is a real risk that token sellers will face regulatory

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[217] Securities and Exchange Commission, *The Investor's Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation,* http://www.sec.gov/about/whatwedo.html. http://www.sec.gov/about/whatwedo.html.

[218] The Federal Trade Commission is the federal agency charged with protecting consumers. It has already entered the world of cryptocurriences, bringing charges which were eventually settled against a fraudulent bitcoin mining operation. *See* News Release, Operators of Bitcoin Mining Operation Butterly Labs Agree to Settle FTC Charges They Deceived Consumers, 2016 WL 642064 (Feb. 18, 2016). The Consumer Financial Protection Bureau also has a consumer protection mission, but it is specific to the financial sector. The agency has issued a consumer advisory on bitcoin and is accepting bitcoin-related complaints from consumers. *See* Consumer Financial Protection Bureau Consumer Advisory, *Risks to Consumers Posed by Virtual Currencies*, http://files.consumerfinance.gov/f/201408_cfpb_consumer-advisory_virtual-currencies.pdf.

[219] The FTC is charged with the prevention of "unfair methods of competition" and "unfair or deceptive acts or practices" in commerce. 15 U.S.C. § 45. The CFPB is empowered to prevent "unfair, deceptive, or abusive act[s] or practice[s] . . . in connection with any transaction with a consumer for a consumer financial product or service, or the offering of a consumer financial product or service." 12 U.S.C. § 5531(a).

[220] Jonathan R. Macey, *Administrative Agency Obsolescence and Interest Group Formation: A Case Study of the SEC at Sixty*, 15 CARDOZO L. REV. 909, 939-40 (1994).

[221] Donald C. Langevoort, *The SEC as a Bureaucracy: Public Choice, Institutional Rhetoric, and the Process of Policy Formulation*, 47 WASH. & LEE L. REV. 527, 531 (1990).

uncertainty as to the status of tokens under multiple regulatory regimes, giving sellers additional reasons to flee to other jurisdictions.

From a political economy perspective, the SEC has less room to maneuver than it has had previously. The ease with which relevant parties can engage in regulatory arbitrage means that the SEC has a real reason to take into account the needs of token sellers for a rational and predictable regulatory regime. At a minimum, token sellers and exchanges need a reliable way of answering the threshold, definitional question—whether they are selling a security–-to determine whether or not the transaction falls within the SEC's jurisdiction.

B. Guidance

To provide further clarity, our first suggestion is for the SEC to provide guidance as to how it will apply the *Howey* test to app tokens in the future and, in particular, how it will apply the "expectation of profits" prong to *utility tokens*. As we discuss above, these tokens in particular raise novel issues in light of their intermingling of both consumptive and speculative interests. Ideally, this guidance would identify features that, in the SEC's view, will weigh in favor of finding that a token qualifies as a security.

Doctrinally, *utility tokens* rest on shaky ground. They offer both consumptive and speculative benefits, and the interest that token holders have in both consumption and speculation are inextricably intertwined—purchasers can very reasonably have both an expectation of consumption and one of profit. To be sure, there are purchasers who, at the time of purchase, intend to sell the tokens at a profit in the future. But, there are also those who intend to utilize the token in the future. It also seems likely that there are many purchasers who buy tokens because they think they project will be successful and are therefore confident that they will have the option of either using it or selling it at some point in the future.

Forman and other authorities do not tell us how to apply the expectation of profits prong under these circumstances. *Forman* concerned parties' motivations for purchasing long-term housing—even in the absence of transfer restrictions, the individuals who bought into the housing cooperative had a clear interest in utilizing the housing. This puts sellers of tokens in a conundrum: even if they design and sell a utility token that provides no entitlement to profits, entities the holder to use a service (has strong consumptive characteristics), and provides token holders with the right to participate in the development of a technological system, an application of *Howey* that focuses only on those purchasers who plan to resale on a token exchange could lead to a finding that that token is a security.

Ideally, by providing additional guidance, the SEC would clarify factors that would lead it to find that particular utility token meets the expectation of profits prong. Given the presence of purchasers with a variety of motivations (and purchasers whose motivations at the time of sale are unsettled), we suggest that the SEC focus on objective indicators that the seller is emphasizing or otherwise advertising a profit potential rather than a token that can be used in conjunction with the service or project the token sale is financing. The SEC may also consider (1) affirmative efforts to list a token in regulated U.S. marketplaces prior to the sale; (2) the existence or non-existence of transfer restrictions on tokens issued to the developers or organizations developing the tokens (thus expanding the supply of tradable tokens and creating the potential for market manipulation by those with unique knowledge of the project); (3) formal waivers or other agreements whereby token purchasers affirmatively acknowledged that they were not purchasing the token for speculative purposes; and (4) whether the sale was capped, thereby reducing the potential for speculative interest and malfeasance on the part of the selling party.

Other considerations could focus on the consumptive aspects of the token sale. Here, the inquiry should be grounded on the role of the token for purposes of the application. The SEC should focus on whether the token is a necessary component of the underlying application. For example, is the token needed to coordinate activity on the application or solve a technical problem? What does the token entitle the user to receive in the context of the application? Could the token be removed and the application still operate or function? Is the token being used as a means to compensate effort on underlying technological platform? The more dependent operation of the application is on tokens and the participation of token holders, the clearer the interest in consumption is. Tokens sold for applications that can be operated without the token, for example, would appear to offer a less significant interest in consumption than tokens sold for an application that is simply not available unless the user has a token. This type of approach should keep the mere fact that resale is possible from causing all *utility tokens* to be treated as securities, while also providing a flexible approach to address app token sales that attempt to avoid current securities laws framework.

Finally, SEC guidance should address at what point any profits generated from the token become sufficiently independent from the efforts of the selling party to preclude a finding of security status is needed. Factors here should focus on the degree to which token holders or recipients control the development of the underlying application, whether the sellers of the tokens will directly profit from the sale, marketing efforts on the part of the selling party, whether sophisticated investors (including venture capital

funds) are purchasing the token and at what value and on what terms, and whether the sale occurred before or after the delivery of a functional product.

In particular, the timing distinction that was recognized in *Life Partners* seems both relevant and helpful: tokens that are purchased either after the project has been completed (or as the project nears completion) do not raise the same concerns over investor protection and potential fraud that arise in connection with tokens sold prior to development of the project. As the *Life Partners* Court noted in connection with viatical settlements, "if the value of the promoter's efforts has already been impounded into the . . . purchase price of the investment, and if neither the promoter nor anyone else is expected to make further efforts that will affect the outcome of the investment, then the need for federal securities regulation is greatly diminished."[222] Similarly, if the project has been substantially completed such that the token's price reflects the value of the efforts of the developers and promoters, then there appears to be less reason to require registration and disclosure.

As part of this inquiry, the SEC should also focus on ongoing control of the selling party on the value of the app token. If the selling party has a predominant hand in the ongoing development of the token or could take steps to disproportionately or materially impact the value of the token going forward, this should weigh in favor of finding that the token is a security.

Of course, the factors identified here are only some of the potentially relevant data points that the SEC could consider. Our primary point is not that any of these factors are or should be the lodestar for determining security status. Instead, by simply offering guidance that identifies the considerations that will be relevant to the SEC and explains how the agency will apply those considerations, the SEC can reduce the cloud of uncertainty that token sellers currently face.

C. *Safe Harbor for Token Exchanges*

Our next suggestion is that Congress promulgate a safe harbor for token exchanges. Under the 1933 Act—and as the SEC recognized in its recent report—it is not only issuers that face liability for selling an unregistered security.[223] Instead, "underwriters," as defined in the Securities Act,[224] also face liability for facilitating or otherwise participating in the sale

[222] *SEC v. Life Partners, Inc.*, 87 F.3d 536, 547 (D.C. Cir. 1996).

[223] The DAO Report, *supra* note 4.

[224] 15 U.S.C. § 77b(11) (The term ''underwriter'' means any person who has purchased from an issuer with a view to, or offers or sells for an issuer in connection with, the distribution of any security, or participates or has a direct or indirect participation in any such undertaking, or participates or has a participation in the direct or indirect underwriting of any

of unregistered securities.[225] The term underwriter is defined broadly to include not only traditional underwriters (which act as an intermediary between the issuer and investors by buying the securities from the issuer and selling to public investors) but also anyone who "offers or sells for an issuer in connection with the distribution of a security" or "participates or has a direct or indirect participation in such an undertaking."[226] As to tokens that are securities, token exchanges almost certainly fall within this definition insofar as their websites list tokens, make offering materials available to prospective purchasers, and facilitate the actual sales.[227] Given the significant risk that selling tokens presents for the token exchanges, we also suggest a compliance-based safe harbor that protects token exchanges from liability if the SEC—at some point in the future—reclassifies or determines that a utility is token a security.

A safe harbor would help mitigate risks created by doctrinal uncertainty currently swirling around the sale of *utility tokens*. It would also, however, provide an opportunity for the SEC and Congress to encourage best practices across the sector. Due to the 1933 Act, exchanges are already dissuaded from listing investment tokens. However, due to the uncertainty outlined above, many exchanges do not list *utility tokens* for fear that—at some point in the future—they will be reclassified as a security. Thus, there is a risk that the exchange of *utility tokens* will over time gravitate to foreign exchanges or exchanges that are comfortable with this degree of risk, which often do not have appropriate compliance and security measures in place. This places U.S. consumers at risk and serves as a limiting factor for generating best practices across the industry. Perhaps of greatest concern, it could also over the long run could diminish the U.S.'s role in controlling and regulating access to app tokens and markets for online technology.

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such undertaking; but such term shall not include a person whose interest is limited to a commission from an underwriter or dealer not in excess of the usual and customary distributors' or sellers' commission. As used in this paragraph the term ''issuer'' shall include, in addition to an issuer, any person directly or indirectly controlling or controlled by the issuer, or any person under direct or indirect common control with the issuer.").

[225] *SEC v. Offill*, Civ No. 3:07-CV-1643-D, 2012 WL 246061, at *5 (Jan. 26 2012).

[226] 15 U.S.C. § 77b(11).

[227] *See, e.g.*, *SEC v. Chinese Consol. Benev. Assoc.*, 120 F.2d 738, 740-41 (2d Cir. 1941). In this case, the Second Circuit held that a "New York corporation organized for benevolent purposes" was liable as an underwriter for participating in the sale of unregistered bonds issued by the Republic of China. The organization had no official relationship with the government of China, but had the mission of assisting the Chinese people and government. One way it sought to do so was by encouraging the purchase of bonds issued by the government of China by individuals in the United States. They took out ads in papers urging individuals to do so, collected funds from purchasers, and delivered those funds to the relevant bank in New York.

Providing these intermediaries with a safe harbor would give regulators an opportunity to offer a "carrot" in exchange for voluntary adoption of measures that are aimed at protecting purchasers of *utility tokens* from malfeasance and fraud. Exchanges will have a clear path to compliance with existing law that does not require them to forego participation in a growing sector.[228]

The safe harbor should be designed in a fairly straightforward manner, insulating compliant exchanges from liability for facilitating the sale of unregistered securities, provided they took certain steps prior to listing the token and take immediate steps to delist the token if it is subsequently found to be a security.[229] Possibilities for pre-listing actions include requiring that exchanges perform technical due diligence prior to listing to ensure it satisfies reasonable security practices and requiring that the exchange ensure that certain disclosures are made by the organizers of the project. We also suggest that the safe harbor require that the exchange have reached some reasonable conclusion that the token is not, in fact a security. This could be achieved, for example, by condition application of the safe harbor on the receipt of an opinion from qualified counsel that the token does not qualify as a security under the *Howey* test. Alternatively, it could be framed in terms of particular characteristics that would counsel against security status but which would not necessarily be dispositive in the event a private plaintiff or the SEC subsequently brings an action or enforcement proceeding. For example, the safe harbor could apply only to tokens that relate to projects that are already

[228] Such an approach also aligns with prevailing theories of cyberlaw, which guided the development of the internet. *See, e.g.*, Jonathan Zittrain, *A History of Online Gatekeeping*, 19 HARV. J.L. & TECH. 253, 257 (2006) (noting that "looking to control individual behavior by altering the incentives of intermediaries and by changing the operation of technology -- can be found in almost every doctrinal area implicated by cyberlaw."); Jacqueline D. Lipton, *Law of the Intermediated Information Exchange*, 64 FLA. L. REV. 1337, 1341–42 (2012) (noting that a unified theory of cyberlaw centers on the fact that "all Internet interaction must be facilitated by third party intermediaries."); Frank Pasquale, *Beyond Innovation and Competition: The Need for Qualified Transparency in Internet Intermediaries*, 104 NW. U. L. REV. 105, 105 (2010) ("Internet intermediaries govern online life.").

[229] We note that there are other types of safe harbors that have been in connection with internet regulation, including complete immunity under the Communications Decency Act, a notice and takedown regime under the DMCA, and a no-interference regime applied in the context of the trademark statute. *See* Mark A. Lemley, *Rationalizing Internet Safe Harbors*, 6 J. TELECOMM. & HIGH TECH. L. 101, 110 (2007). Our proposed safe harbor is animated by the trademark regime. It gives securities regulators the information needed to quickly and cheaply identify token sales impacting U.S. consumers, at the same time it discourages intermediaries from taking an overly expansive view as to whether a *utility token* would qualify as a security. Through our approach, we aim to encourage best practices on the part of exchanges. Such an approach encourages a conservative, but not overly aggressive approach to the determination of whether a token is a security and accommodates future guidance provided by regulators.

operational or will be operational within a certain time period after listing. As discussed above, such tokens are more clearly consumptive in nature.

The safe harbor could also address other ancillary issues related to the buying and selling of tokens. Token sales tend to concentrate in the hands of a few, including founders and large purchasers, creating risk of abusive trading practices that could disproportionately hurt consumers by manipulating the price of a utility token or dumping tokens based on inside information. To prevent such abuses, the safe harbor could also include a condition requiring that listed tokens include reasonable transfer restrictions on the founders and that the exchange take reasonable steps to limit the amount that any one individual token holder can purchase.

D. Exemption

Our final suggestion is that the SEC implement a registration exemption that has been designed for tokens that are, in fact, securities. We anticipate that such an exemption will be primarily useful for sellers of investment tokens, but it would also be available for any *utility tokens* that run the risk of being deemed securities. As discussed above in Section II, current exemptions are not well-suited for token sales (although compliance is not impossible): Amounts raised routinely exceed the limitations that currently apply to multiple exceptions, and transfer restrictions are in obvious tension with token sales and the active secondary market in which they are purchased and sold. With an exemption, the SEC can offer token sellers a path to compliance that has been tailored to the unique characteristics of tokens and, in doing so, allow issuers of these securities to leverage the efficiencies of blockchain.

Of currently-existing exceptions, Regulation A provides the most logical starting point for designing a token-specific exemption. Many of Regulation A's current features would not require adjustment: Its two caps ($50 million for a Tier 2 offering; $20 million for a Tier 1)[230] will capture most token sales. Securities sold under Regulation A are not restricted securities[231] and, therefore, a Regulation A offering would not require token sellers to forego listing their tokens on an exchange.

Regulation A also includes disclosure requirements,[232] and while we do not recommend dispensing completely with disclosure, the types and

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[230] 17 C.F.R. § 230.251.

[231] Hazen, *supra* note 128, at § 117 ("There are no required restrictions on resales of securities offered under Regulation A."). 129, at § 117 ("There are no required restrictions on resales of securities offered under Regulation A.").

[232] 17 C.F.R. § 230.252 (requiring offering statement); *id.* § 230.253 (requiring offering circular).

amount of disclosure should be adjusted to better fit with tokens and token-funded projects. Voluntary disclosure is already the norm—organizers of token offerings generally produce a white paper, disclose technical information, and make the code available to potential purchasers and third-party experts who vet it. Rather than force token sales to comply with disclosure requirements designed for more traditional business entities and securities offerings, the SEC should look to the disclosure practices that are already becoming standard as a basis for designing the disclosure requirements in the exemption. In particular, the SEC may consider requiring disclosure of the relevant code, any evaluation of the code that has been performed by technical experts, the identities of the organizers/promoters and developers working on the project, material risks related to the project, as well as information about how the proceeds from the sale will be used going forward.

Another aspect of Regulation A that would potentially raise issues for token sales is the limited exemption from the requirement that securities be registered under Section 12(g) of the Exchange Act. Currently, to be exempt from this requirement, the offering must be a Tier 2 offering and employ the services of a transfer agent.[233] Of course, one of blockchain's major innovations is its elimination of the need for third party intermediaries like transfer agents. In effect, the smart contracts managing token sales working in conjunction with a blockchain function as a transfer agent by maintaining ownership and processing transactions. Delaware, the premier state for forming business organizations, acknowledged this when it amended its corporate statute to allow corporations organized there to track stock ownership using blockchain technology.[234] Requiring that token sellers engage the services of a transfer agent would introduce an inefficient redundancy and force parties to these transactions to forego what is widely considered to be the major advantage of blockchain. Accordingly, if a token-specific exemption offers conditional exemption from registration under Section 12(g), we suggest that the SEC consider removing the transfer agent requirement.

Another aspect of this exemption from Section 12(g) that would require consideration is the limitation of a $75 million float. As discussed above, a limitation on the public float would artificially limit the number of tokens available. Because these tokens function primarily as the price paid to use a service, a limitation on public float is, in reality, an artificial limitation on the supply of these services. It may also have technological ramifications insofar as the service depends on users to contribute computing power, data

[233] S.E.C. Rule 12g5-1(a)(7).
[234] 2017 Del. Laws c. (S.B. 69).

storage space, which could in turn decrease the cost of a technology for consumers.

CONCLUSION

In less than a decade, blockchain technology has made fundamental changes to the financial system. Blockchains are supporting alternative currencies and reduce the need for intermediaries to perform certain financial services. When combined with smart contract technology, blockchains hold out the potential to alter traditional methods by which companies raise capital and are already doing so.

U.S. regulators, primarily the SEC, sit at a critical moment. It is certainly possible to cast tokens as securities under the current standard for determining what is an "investment contract," thereby bringing them within the jurisdiction of the U.S. securities regulation apparatus. For some tokens—those that most closely resemble traditional securities—this makes sense. For a subset, however, their status is not clear. No doubt, it is possible to view these tokens as an investment opportunity, and some individuals do. On the other hand, these tokens are the price of admission to an ever-growing body of newly developed digital technology. They offer their holders the opportunity to use or consume something, and in this regard, the active secondary market for tokens functions not as a platform for speculation but instead as a mechanism for allocating these valuable consumptive rights to those who value them the most. Under the traditional test, there is significant uncertainty as to the status of these tokens. On account of the ease with which sellers of tokens can avoid the U.S. altogether, the risks of regulatory overreach are significant. Encouraging token sellers to flee the U.S. market will ultimately deprive U.S. consumers of the use of these newly developed technologies.

As U.S. regulators and potentially even Congress move forward with efforts to fashion an approach to token sales, we suggest that they take into account token sellers' needs for predictability and certainty in the short term. Again, other jurisdictions are already stepping in to provide a climate in which compliance obligations are more easily ascertained. This is a context in which regulatory arbitrage is cheap and the possibility of large scale migration out of the U.S. market is a real one.