
THE COLUMBIA
SCIENCE & TECHNOLOGY
LAW REVIEW

VOLUME XXIII

STLR.ORG

FALL 2021

NOTE

POLICING PROOF-OF-STAKE NETWORKS:
REGULATORY CHALLENGES PRESENTED BY
STAKING-AS-A-SERVICE PROVIDERS AND THE
NEED FOR A TAILORED REGIME

Jessica S. Hart*

Blockchain networks have increasingly turned to proof-of-stake (“PoS”) protocols as a mechanism for discouraging bad behavior and securing participants’ data. In doing so, they have not only improved their energy consumption but also increased their accessibility. Still, the technological proficiency required of participants in PoS networks presents certain barriers to inclusivity. Third-party services known as staking-as-a-service (“StaaS”) providers have emerged as a popular solution to participants personally securing the network. The nature of this sub-contractual relationship has raised questions regarding the need for their regulation. In response to regulatory concerns, some practitioners have suggested that StaaS arrangements should qualify as “investment contracts” per SEC v. Howey and thus “securities” under the Securities Act of 1933. While much litigation has surrounded the question of whether cryptocurrencies vis-à-vis initial coin offerings (“ICOs”) constitute securities, none has yet addressed the question on StaaS providers within these networks. Accordingly, this Note explores the potential arguments in favor and against regulating StaaS providers as issuers of securities under Howey. It argues that the uniqueness of and variations among StaaS contracts make these arrangements unsuitable for regulation as securities. Instead, both StaaS users and

* Columbia Law School, J.D., 2022. With gratitude to Professor Joshua Mitts for his invaluable insights and guidance, Notes Editor Karen Kim for her encouragement, and my father, Steve, for his pragmatic eye. I would also like to thank the Columbia Science and Technology Law Review staff for their thorough edits and the Executive Board for awarding this Note the Julius Silver Prize.

PoS networks at large can benefit from a regulatory framework tailored to this innovative and nuanced technology.

I.	INTRODUCTION.....	193
II.	THE ORIGINS OF STAAS PROVIDERS AND THE NEED FOR REGULATION.....	199
	<i>A. The Rise of Proof-of-Stake Consensus</i>	<i>200</i>
	<i>B. Staking-as-a-Service and the Relationship Between Network Participants and Providers</i>	<i>203</i>
	1. Subcategories of Proof-of-Stake Networks.....	203
	2. Staking Rewards and Provider Service Fees.....	205
	3. Variances in Provider Business Practices	206
	<i>C. Current Developments in Regulation.....</i>	<i>207</i>
III.	APPLICATION AND INADEQUACIES OF CURRENT REGULATION.....	209
	<i>A. The Howey Test and Potential Regulation under the SEC</i>	<i>209</i>
	1. Common Enterprise	211
	2. Investment of Money	212
	3. Expectation of Profit	217
	4. Efforts of Others.....	219
	<i>B. Policy Rationales: Achieving the Goals of the Securities Act</i>	<i>221</i>
	1. Balancing Mandatory Disclosures with Existing Transparency	222
	2. Addressing Reliability (Rather than Speculative) Risks.....	223
	3. Ensuring the United States' Leadership in Future Blockchain	224
	Regulation	224
	<i>C. Concluding Thoughts</i>	<i>225</i>
IV.	RECOMMENDED REGULATORY AND LEGISLATIVE RESPONSES.....	225
	<i>A. Recommendations for Lawmakers and Regulators.....</i>	<i>226</i>
V.	CONCLUSION	227

I. INTRODUCTION

In January 2018, several Wells Fargo customers checked their bank accounts to find that their funds had seemingly vanished.¹ The bank attributed the temporary

¹ Matt Egan, *Wells Fargo Billing Glitch Infuriates Customers*, CNN BUSINESS (Jan. 18, 2018, 11:59 AM), <https://money.cnn.com/2018/01/18/news/companies/wells-fargo-glitch-double-pay/index.html>.

losses to a processing error.² While the customers' accounts were later restored and any erroneous fees refunded, damage from processing errors can be long-lasting.³ Processing errors are just one type of risk posed to customers' assets in a bank's custody. Others include external breaches, hardware failures, and outright loss of data.⁴ These are some of the reasons why many have turned to open blockchain networks to ensure the safety of their assets.⁵ In a distributed system, the dangers of false transactions and security breaches are reduced dramatically.⁶

To understand the workings of a blockchain network, it is perhaps best to illustrate by example. A woman walks into a bank and asks the teller to transfer her sister ten dollars. After verifying the identities of both parties, the bank deducts ten dollars from the sender's account and adds the amount to that of the receiver. In an open network, the same woman notifies all network participants that she is conducting the transaction. The other participants will confirm that the woman's funds are sufficient and record the transaction in their respective ledgers.⁷ That each separate ledger reflects the same transaction makes it difficult for anyone—whether intentionally or accidentally—to meaningfully alter an entry.⁸ The result is that transaction processing times can be instantaneous, assets cannot be easily confiscated, and a dollar cannot be “double spent.”⁹ Of course, the success of an

² *Id.* Other internal errors have resulted in online bank accounts incorrectly reflecting deposits and withdrawals that have not yet been officially transacted by the bank. See Lauren Debter, *Why You Can't Trust Your Online Bank Account Balance in the Smartphone Era*, FORBES (July 13, 2016, 9:00 AM), <https://www.forbes.com/sites/laurengensler/2016/07/13/online-bank-account-balance-overdraft-fees/?sh=4bf84eb91ec6>.

³ For example, some customers affected by bank errors have experienced damage to their credit score and ability to qualify for certain mortgage rates. Amanda Dixon, *The Latest Wells Fargo Mishap Shows Small Bank Errors Can Give You a Big Headache*, BANKRATE (Oct. 26, 2018), <https://www.bankrate.com/banking/what-to-do-when-bank-errors-happen/>.

⁴ Ryan Brooks, *[Infographics] IT Risks in Finance: Danger of Human Errors*, NETWRIX BLOG (Sept. 1, 2020), <https://blog.netwrix.com/2019/01/02/infographics-it-risks-in-finance-danger-of-human-errors/>.

⁵ Blockchain advocates cite a lack of transparency as one of the primary failures of a centralized system. The result is that a customer must trust that a third party—oftentimes a bank—is acting in their best interest. *Peercoin University*, PEERCOIN, <https://university.peercoin.net/#/9-peercoin-proof-of-stake-consensus> (last visited Dec. 1, 2020) (“The need to trust without the ability to verify can invite errors, unaccountability and even outright fraud and corruption within an organization.”).

⁶ The potential benefits of blockchain networks have been widely reported. See e.g., Divya Joshi, *How Secure is Cryptocurrency and Blockchain Technology? Security Benefits and Issues of DLT*, BUSINESS INSIDER (Jan. 14, 2020, 11: 18 AM), <https://www.businessinsider.com/cryptocurrency-blockchain-security>.

⁷ This example was adapted from that used by Bruno Skvorc to broadly explain the function and purpose of blockchain networks. See Bruno Skvorc, *Blockchain: What it is, How it Works, Why it's so Popular*, SITEPOINT (May 14, 2018), <https://www.sitepoint.com/blockchain-what-it-is-how-it-works-why-its-so-popular/>.

⁸ *Id.*

⁹ In a digital cash market, double-spending is an issue where the same dollar is paid to two or more recipients contemporaneously. It can occur when a participant fraudulently makes a digital “copy” of a token. This risk requires that there be some system in place to verify the authenticity of

open blockchain network depends largely on the reliability of its participants. This is ensured by the process, or consensus mechanism, that the network uses for governing and validating transactions.¹⁰ Among these is the increasingly adopted proof-of-stake (“PoS”) protocol,¹¹ a method by which networks incentivize members to oversee their ledgers.¹²

A traditional PoS network typically operates as follows: first, participants—otherwise known as “nodes”—temporarily deposit their digital tokens in a designated wallet belonging to the network.¹³ This is a process known as “staking,” with deposited tokens referred to as a “stake.”¹⁴ Next, the network selects from these participants one to validate a “block” of transactions (transfers of digital tokens from one account to another within the network).¹⁵ These blocks can be thought of as a completed page of a record book or ledger.¹⁶ Crucially, the network chooses validators based in part on the number of tokens that the participant has staked in the collective wallet.¹⁷ Those chosen then have the chance to earn rewards

the asset itself (much like the security features on the physical U.S. Dollar) and the uniqueness of the transaction. *Double Spending Explained*, BINANCE ACADEMY (Dec. 2020), <https://academy.binance.com/en/articles/double-spending-explained>.

¹⁰ See generally IDDO BENTOV ET AL., PROOF OF ACTIVITY: EXTENDING BITCOIN’S PROOF OF WORK VIA PROOF OF STAKE (2014), <https://allquantor.at/blockchainbib/pdf/bentov2014proof.pdf>.

¹¹ Liam Frost, *Investors Love Proof-of-Stake Cryptocurrencies*, *Says eToro*, DECRYPT (July 8, 2020), <https://decrypt.co/34934/investors-love-proof-of-stake-cryptocurrencies-says-etoro>.

¹² Bentov, *supra* note 10.

¹³ These wallets are distinct from the participants’ personal wallets on the network wherein participants can freely use their funds as payment in transactions. By contrast, the designated network wallet is “locked” in that the tokens within them are temporarily held by the network and oftentimes taken out of circulation. *What is Staking?*, BINANCE ACADEMY (Nov. 2020), <https://academy.binance.com/en/articles/what-is-staking>.

¹⁴ *Proof of Stake Explained*, BINANCE ACADEMY (Aug. 24, 2021), <https://academy.binance.com/en/articles/proof-of-stake-explained>.

¹⁵ *Id.* Note that the complete process for validating blocks, albeit critical to the functioning of PoS networks, is highly technical and not entirely germane to the legal discussion here. For the purposes of this Note, moreover, it has been conceptually simplified.

¹⁶ Aiya Li et al., *Robust Proof of Stake: A New Consensus Protocol for Sustainable Blockchain Systems*, 12 SUSTAINABILITY 2824, 2828 (2020), <https://www.mdpi.com/2071-1050/12/7/2824/pdf>. Additionally, “[e]ach time a block is ‘completed’, it gives way to the next block in the blockchain. A block is thus a permanent store of records which, once written, cannot be altered or removed.” Jake Frankenfield, *Block (Bitcoin Block)* (June 30, 2020), <https://www.investopedia.com/terms/b/block-bitcoin-block.asp#:~:text=A%20block%20records%20some%20or,next%20block%20in%20the%20blockchain>.

¹⁷ To analogize, a node’s deposited tokens function as raffle tickets, with more tokens in the designated wallet resulting in a higher chance that the network will select that node to be a validator. Observers have noted that a network using an algorithm that purely accounts for the size of the stake would result in an uneven distribution of validators who are the wealthiest nodes in the network. To combat this, network selection algorithms may also take into account additional factors, including how long the node has engaged in staking, the portion of the stake relative to the total number of tokens in the network, and the network inflation rate, among others. See *Proof of Stake Explained*, *supra* note 14.

in the form of newly minted tokens.¹⁸ This, of course, is the incentive for the participant to validate blocks fairly and accurately.¹⁹ On the other hand, failing to validate blocks or doing so incorrectly may result in the network seizing the participant's individual stake in a process known as "slashing."²⁰

Given the risk of not validating blocks correctly, participants in PoS networks may opt for a specialized company, known as a staking-as-a-service ("StaaS") provider, to perform this technical function on their behalf.²¹ Delegating is meant to increase member participation by allowing a third party to validate blocks and assume slashing risks where the member is unable or unwilling. Depending on the PoS network, the participant delegates their validation duty to the StaaS provider and may either (1) stake their own principal; (2) delegate the duty to stake the principal to the StaaS provider; or (3) temporarily transfer custody of their assets to the StaaS provider, who will then commit the stake.²² In exchange for their services, the provider keeps a percentage of the rewards.²³ This payoff has proven lucrative for StaaS providers, as evidenced by the estimated one hundred and thirty-three market entrants since the formal inception of PoS in 2012.²⁴

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ Angela Angelovska-Wilson & Evan Weiss, *The Potential Legal Implications of Securing Proof of Stake-Based Networks*, in BLOCKCHAIN & CRYPTOCURRENCY REGULATION 2020 133, 134 (Josias N. Dewey et al. eds., 2d ed. 2019). There are three primary causes for slashing, whether malicious or unintentional: (1) liveness fault, wherein the validator neglects their duty and misses several blocks; (2) security fault, wherein the validator verifies the same block twice (also referred to as "double-endorsing"); and (3) governance fault, wherein the validator casts contradicting "votes" on the same consensus process, or does not vote at all. Stakin, *Risks in Crypto Staking*, MEDIUM (Apr. 22, 2019), <https://medium.com/stakin/risks-in-crypto-staking-66f8bb9067ec#:~:text=Staking%20and%20cryptocurrencies%20investment%20involves,liveness%20faults%20on%20PoS%20protocols> [hereinafter "Risks in Crypto Staking"].

²¹ *Id.* Other terms for StaaS providers may include staking pool operators, staking infrastructure providers, and staking services, among others. For consistency, this Note refers to them as StaaS providers.

²² *Id.*

²³ See Rasheed Saleuddin & Chase Devens, *What's at Stake in Staking-as-a-Service?*, MESSARI (Dec. 15, 2021), <https://messari.io/article/what-s-at-stake-in-staking-as-a-service> ("In return for maintaining the necessary validator services for its customers, a STaaS provider will charge its customers a fee. This can be a fixed fee per month but is more commonly a percentage of the rewards generated on its customers' stake).

²⁴ The estimated number of total StaaS providers is based on the database maintained by Staking Rewards. While the database has so far logged 1,667 providers, only 133 of these have been verified and scored based on the quantity and quality of their managed assets. Without a formal registration process, however, it is difficult to determine how many unverified providers are also legitimate entrants. See *Providers*, STAKING REWARDS, <https://www.stakingrewards.com/providers?page=1> (last visited Dec. 8, 2020). Though the first discussions of a proof-of-stake concept occurred among blockchain circles as early as 2011, the idea was not formalized until Sunny King and Scott Nadal published their essay on peer-to-peer cryptocurrency networks in August 2012. See SUNNY KING & SCOTT NADAL, PPCOIN: PEER-TO-PEER CRYPTO-CURRENCY WITH PROOF-OF-STAKE 1-2 (2012), <https://decred.org/research/king2012.pdf>.

Though PoS is a novel technology, the potential conflicts arising between StaaS providers and network participants are far from new. The prevalence of StaaS contracts prompts the questions: who polices these interactions between StaaS provider and consumer, and what happens when something goes wrong? As it stands, state contract laws provide the current parameters within which StaaS agreements function. These contracts between providers and their clients specify the rights and obligations of both parties, oftentimes addressing potential remedies in the event of breach.²⁵ As with any contract, both parties run the risk of non-performance by the other side. This, however, is where similarities to conventional arrangements arguably end.²⁶ Though StaaS providers generate rewards and, in some instances, custody a participant's assets, their service is otherwise limited and inextricably tied to PoS software that is not itself a "legal entity."²⁷ Thus, while there is need for protections against misinformation and malicious practices, it is unlikely that these protections may be afforded by contract laws alone.

Several solutions have been posed to supplement contractual protections. These predominantly include proposals for oversight by the Financial Crimes Enforcement Network ("FinCEN") or the Securities and Exchange Commission ("SEC").²⁸ Regulators must ask what additional protections, if any, may be beneficial considering the uniqueness of PoS networks. To do so, it is helpful to consider the rationales behind Congress's creation of the Bank Secrecy Act ("BSA")²⁹ under FinCEN as well as the Securities Act of 1933 (the "Securities Act") under the SEC.³⁰ Applying these rationales to StaaS arrangements can assist with determining which agency might offer the greatest regulatory benefits.

At the core of the BSA and related legislation is the desire to prevent individuals from using financial institutions to hide or launder money in the furtherance of crime.³¹ It accomplishes this goal in part by establishing recordkeeping and recording requirements for money-services businesses ("MSBs")³²: broadly, any legal person involved in the transmission of currency.³³ Given the scope of that definition—as well as general concerns that blockchain networks are overrun with

²⁵ See *Nomination Agreement*, PURESTAKE (Oct 22, 2019), <https://www.purestake.com/staking-agreement/>.

²⁶ Omar Faridi, *Blockchain Based Staking of Digital Assets is Not like Traditional Bank Deposits*, CROWDFUND INSIDER (June 25, 2020), <https://www.crowdfundinsider.com/2020/06/163163-blockchain-based-staking-of-digital-assets-is-not-like-traditional-bank-deposits-because-process-involves-computer-code-not-legal-entities-software-developer-explains/>.

²⁷ *Id.*

²⁸ See e.g., Angelovska-Wilson & Weiss, *supra* note 20.

²⁹ Pub. L. No. 91-507, 84 Stat. 1114 (1970) (codified as amended in various sections of U.S.C. 12, 15, and 31).

³⁰ Securities Act of 1933, 15 U.S.C. § 77a–77mm (1933).

³¹ FINCEN, *History of Anti-Money Laundering Laws*, <https://www.fincen.gov/history-anti-money-laundering-laws> (last visited Nov. 2, 2021).

³² *Id.*

³³ FINCEN, *Money Services Business Definition*, <https://www.fincen.gov/money-services-business-definition> (last visited Nov. 2, 2021).

money-laundering schemes—certain StaaS providers would seem good candidates for regulation under the BSA.³⁴ Their registration as MSBs could alleviate fears that PoS participants are using their services in order to facilitate crime.³⁵ What it would not accomplish, unfortunately, is the protection of unsuspecting consumers from malicious or simply negligent providers. Likely for that reason, observers have considered whether StaaS arrangements would benefit from the consumer protections that are uniquely afforded by the SEC.

SEC, unlike FinCEN, protections were designed to increase information access and transparency, as well as provide shareholders with certain voting powers accompanied by stock ownership.³⁶ PoS participants could arguably profit from these measures in more ways than one. Primarily, it would allow them to make more informed decisions in choosing their StaaS provider based on additional public information not already stored on the blockchain.³⁷ It could also provide them with special shareholder recourse if their provider engages in wrongful behavior such as fraud or failure to take appropriate security measures.³⁸

In light of the potential regulatory benefits, analysts have analogized StaaS entities to offerors of securities as regulated by the SEC.³⁹ Some practitioners have questioned whether the delegation of block validation to StaaS providers is a “security” under the Securities Act.⁴⁰ If StaaS arrangements were to fall under the statute, they would most likely qualify as “investment contracts” under the enumerated list of instruments in Section 2(a)(1).⁴¹ Classifying said agreements requires that courts and the SEC apply the test for investment contracts presented

³⁴ Hannah Murphy, *The Rise of Crypto Laundries: How Criminals Cash Out of Bitcoin*, FINANCIAL TIMES (May 28, 2021), <https://www.ft.com/content/4169ea4b-d6d7-4a2e-bc91-480550c2f539>.

³⁵ Whether all StaaS providers would neatly qualify as MSBs is also debated. Angelovska-Wilson & Weiss, *supra* note 20, at 140-45.

³⁶ Legal Information Institute, *Securities*, CORNELL LAW SCHOOL, <https://www.law.cornell.edu/wex/securities> (last visited Nov. 2, 2021).

³⁷ The Ethereum blockchain, for example, currently maintains records of all transactions, including balances, receivers, and senders, that have occurred in the network. *Getting Deep into Ethereum: How is Data Stored in Ethereum?*, MEDIUM (Aug. 3, 2018), <https://medium.com/hackernoon/getting-deep-into-ethereum-how-data-is-stored-in-ethereum-e3f669d96033>. SEC requirements would theoretically augment this public information through mandatory disclosures by StaaS providers, including material risks, uncertainties, and results of operations. *SEC Disclosures Laws and Regulations*, INC. (Jan. 5, 2021), <https://www.inc.com/encyclopedia/sec-disclosure-laws-and-regulations.html>.

³⁸ Legal Information Institute, *supra* note 37; *see also* 15 U.S.C. §78j(b) (2012) (codifying Section 10(b)—the primary anti-fraud provision—of the Securities Act).

³⁹ Angelovska-Wilson & Weiss, *supra* note 20, at 135.

⁴⁰ *Id.*

⁴¹ Securities Act of 1933, 15 U.S.C. § 77a–77mm (1933). *See* Angelovska-Wilson, *supra* note 20, at 135 (“When an instrument or arrangement is not obviously one of the other items on the list of enumerated instruments, an investment contract analysis is conducted to determine if the instrument or arrangement is subject to the securities laws.”).

in *SEC v. W.J. Howey Co.* (the “*Howey test*”).⁴² Under the *Howey* framework, an investment contract is a “transaction or scheme whereby a person invests his money in a common enterprise and is led to expect profits solely from the efforts of the promoter or a third party.”⁴³ A SaaS agreement meeting this definition would give the SEC jurisdiction over the provider and its services or offerings.⁴⁴

As this Note argues, there are drawbacks to this regime; mainly, that the variance in PoS networks and SaaS providers would make it difficult to uniformly regulate their services. Certain arrangements between PoS participants and providers would *not* satisfy the *Howey* test in light of their particular characteristics. As such, a court’s analysis of these entities would be highly fact-dependent. The ambiguity around classification will likely lead to an onslaught of litigation, and ultimately, inconsistent consumer protection. It would also result in certain SaaS providers having to comply with (oftentimes, costly) registration and follow-on procedures required of companies offering non-exempt securities.⁴⁵ For many of these small technology companies, that could mean the inability to continue providing their services given their increased liabilities.

While there is certainly a need for greater regulation over SaaS services, the existing regulatory framework provided by the SEC is inadequate. Instead, both SaaS providers and network participants would benefit from a regime tailored to their unique circumstances. To aid in that effort, Part II of this Note outlines the relevant history of PoS consensus, SaaS providers, and current industry approaches to oversight. Part III then analyzes the various forms of SaaS provider contracts under the *Howey* framework, highlighting the legal and policy arguments that providers could use to avoid classification as securities offerors. Part IV provides recommendations for both regulators and lawmakers hoping to resolve this regulatory ambiguity. The Note then concludes in Part V with some final thoughts on the future of PoS networks and the increasing need for uniform regulation.

II. THE ORIGINS OF SaaS PROVIDERS AND THE NEED FOR REGULATION

Analyzing SaaS arrangements under *Howey* first requires a basic understanding of PoS as well as the specific practices of providers. Accordingly, the following section proceeds as follows: first, it outlines the history of PoS networks and provides a basic overview of their benefits relative to other forms of consensus. Next, it examines SaaS arrangements, including a discussion of how

⁴² *SEC v. W.J. Howey Co.*, 328 U.S. 293, 298 (1946) (“The term ‘investment contract’ is undefined by the Securities Act or by relevant legislative reports. But the term was common in many state ‘blue sky’ laws in existence prior to the adoption of the federal statute and, although the term was also undefined by the state laws, it had been broadly construed by state courts so as to afford the investing public a full measure of protection.”). *See also* Angelovska-Wilson & Weiss, *supra* note 20.

⁴³ *W.J. Howey Co.*, 328 U.S. at 298–99.

⁴⁴ *What is the Howey Test?*, FINDLAW (May 17, 2018), <https://www.findlaw.com/consumer/securities-law/what-is-the-howey-test.html>.

⁴⁵ *Id.* *See also* Caleb Christensen, *The Costs of Going Public*, BYU IPOHUB (Mar. 27, 2018), <https://www.ipohub.org/costs-going-public/>.

different types of PoS networks necessarily influence the structure of the StaaS services operating within them. This section also highlights how staking rewards and provider fees are typically calculated, and perhaps most importantly, summarizes the variety of business practices that a provider may adopt. Finally, it captures the current regulatory landscape as well as legislative sentiment toward regulation.

A. *The Rise of Proof-of-Stake Consensus*

PoS was officially introduced in 2012 with the publication of Sunny King and Scott Nadal's "PPCoin: Peer-to-Peer Crypto-Currency with Proof-of-Stake" essay.⁴⁶ There, the authors describe a network which utilizes an algorithm for choosing validators based on the amount and age of coins in the participant's stake.⁴⁷ The stakeholders in the network would effectively be co-owners of the blockchain, much like the shareholders of a publicly traded corporation.⁴⁸ In that regard, validator participants have the chance to "vote" on both the validity of a new block in the network⁴⁹ as well as any proposed changes to the network's governance procedures.⁵⁰ This concept was then implemented with the first hybrid PoS network, known as Peercoin, in 2012.⁵¹ Since the emergence of Peercoin, PoS networks have only increased in popularity, with total staked funds reaching \$3.4 billion USD by December 2019.⁵² This will likely continue to surge given PoS's apparent advantages over alternative methods of consensus. These advantages include energy savings, increased safeguards, and greater network accessibility for novice participants.⁵³

⁴⁶ King & Nadal, *supra* note 24.

⁴⁷ The authors define "coin age" as "currency amount times holding period." For example, "if Bob received 10 coins from Alice and held it for 90 days, we say that Bob has accumulated 900 coin-days of coin age." *Id.* at 2–3.

⁴⁸ *Peercoin University*, *supra* note 5.

⁴⁹ As noted, a staking participant may become a validator as a result of the network's selection mechanism. The process of voting merely makes up the validating procedure, where selected validators "cast approval or disapproval" on pending blocks in the network. Assuming a majority of votes is achieved, the proposed block is then added to the blockchain. *See* LEONARDOS ET AL., *WEIGHTED VOTING ON THE BLOCKCHAIN: IMPROVING CONSENSUS OF PROOF OF STAKE PROTOCOLS 1* (2020), <https://arxiv.org/pdf/1903.04213.pdf>.

⁵⁰ Governance here refers to the set of rules and amendments that guide the function of a particular network, including protocols for dealing with hacks and setting thresholds for staking requirements. The ability to approve such rules, as with transaction blocks, is often constrained to those who stake on the network. *See* Gregory Landua, *Community Stake Governance Model*, MEDIUM (June 6, 2019), <https://medium.com/regen-network/community-stake-governance-model-b949bcb1eca3>.

⁵¹ *Peercoin University*, *supra* note 5.

⁵² The total market capitalization of the 20 largest coins was over \$6.5 billion USD by 2020. Encuum, *Staking Market Overview: Main Providers and PoS Tokens 2019*, MEDIUM (Dec. 30, 2019), <https://medium.com/enqblockchain/staking-market-overview-main-providers-and-pos-tokens-2019-b369658a6e>.

⁵³ Saleuddin & Devens, *supra* note 23.

Prior to PoS, the prevailing method for ensuring the legitimacy of transactions within a blockchain network was proof-of-work (“PoW”) consensus.⁵⁴ The method—which underlies the popular Bitcoin currency—allows network participants to validate a block if they are the first to solve a complex mathematical equation.⁵⁵ Mining nodes are then rewarded for their computational efforts with newly minted tokens.⁵⁶ The goal is to ensure that a valid block requires a substantial amount of effort and energy.⁵⁷ These requisites act as a deterrent against malicious nodes who may wish to falsify tokens or transactions.⁵⁸

The problem with PoW lies in its reliance on limited resources. As networks like Bitcoin have continued to expand, studies estimate that they will consume anywhere from 2.55 to 7.67 gigawatts of electricity per year.⁵⁹ In other words, the process of validating transactions will require the same amount of energy that is used to power countries such as Ireland or Austria.⁶⁰ The issues with said consumption are twofold. First, the growth of PoW networks contribute significantly to global energy concerns such as climate change.⁶¹ Second, the time and effort required of miners will eventually overtake their desire to secure the network.⁶² In response to these concerns, PoS has emerged as an attractive and energy-efficient alternative. Whereas computing power drives the competition between PoW validators, PoS emulates this competition via wealth and other factors, such as the age of tokens that have been staked.⁶³ Thus, under a PoS

⁵⁴ King & Nadal, *supra* note 24, at 5.

⁵⁵ As with PoS, a block is simply a completed ledger page or series of transactions within the network. As such, validator nodes are the participants who, in winning a mathematical race, have the privilege of processing them. Max Thake, *What is Proof-of-Work (PoW)?*, MEDIUM (June 2, 2018), <https://maxthake.medium.com/what-is-proof-of-work-pow-2574ddeb916>.

⁵⁶ *Id.*

⁵⁷ PoW networks like Bitcoin’s are designed so that the computational challenge of validating a block changes in difficulty based on the amount of computing power used by miners in the network. Doing so ensures that the rate of block processing, and thus token minting, remains at a steady constant. As of June 2019, mining nodes have been performing mathematical calculations at an average rate of 56.77 quintillion hashes per second. The difficulty of earning a single Bitcoin has increased accordingly. Wolfie Zhao, *It’s Now Harder to Mine Bitcoin Than Ever*, COINDESK (June 27, 2019, 8:28 AM), <https://www.coindesk.com/bitcoin-hash-rate-new-record>.

⁵⁸ *Id.*

⁵⁹ Alex De Vries, *BITCOIN’S GROWING ENERGY PROBLEM*, 2 JOULE 801, 804 (2018), [https://www.cell.com/joule/fulltext/S2542-4351\(18\)30177-6](https://www.cell.com/joule/fulltext/S2542-4351(18)30177-6).

⁶⁰ *Id.*

⁶¹ Climatologists calculate that, given Bitcoin’s potential rate of adoption, the energy used for mining could produce enough CO₂ emissions to increase the global temperature by two degrees Celsius within thirty years. Camilo Mora et al., *BITCOIN EMISSIONS ALONE COULD PUSH GLOBAL WARMING ABOVE 2°C*, 8 NATURE CLIMATE CHANGE 1 (2018), <https://www.nature.com/articles/s41558-018-0321-8>

⁶² “When the proof-of-work mint rate approaches zero, there is less and less incentive to mint proof-of-work blocks. Under this long-term scenario energy consumption in the network may drop to very low levels as disinterested miners stop mining proof-of-work blocks.” The result is that the network is no longer protected by validators, and new coins cease to be minted. King & Nadal, *supra* note 25, at 5.

⁶³ *Id.*

conception, “even if energy consumption approaches zero,” the network is still protected.⁶⁴

In addition to energy efficiency, PoS improves upon a network’s resilience to fraud and theft. To start, network participants selected as validators are incentivized to validate in good faith “because they not only risk forfeiting the opportunity to earn Rewards (and suffer the effects of inflation while others earn Rewards),” but also risk having their stake slashed should they act maliciously.⁶⁵ Launching an attack would also require that an attacker hold a majority of tokens in the network in order to alter consensus.⁶⁶ For example, in a basic network of one hundred tokens, a malicious node would need to acquire and stake fifty-one tokens to ensure that they can consistently approve—and potentially alter—blocks of transactions.⁶⁷ The implication of this is readily apparent: because attackers are financially invested in the network, harming its economy would harm themselves in the process.⁶⁸ Should that not be deterrent enough, the cost and process of acquiring the requisite number of tokens would almost certainly be prohibitive. The barriers to acquisition would include self-inflicted price inflation that could potentially result in the bankruptcy of the attacker.⁶⁹

Underlying these advantages in energy and security is the PoS network’s accessibility to novice participants. The lack of energy requirements and relative safety can make these networks both open and attractive to those who are unable to acquire the equipment necessary for PoW mining.⁷⁰ This is perhaps one of PoS’s most important and self-serving features. Whereas Bitcoin’s network is now controlled by just three mining entities, PoS networks remain relatively decentralized.⁷¹ As these networks increase in inclusivity, they also increase in their resilience to attack due to the reduced likelihood of coordination among nodes—

⁶⁴ *Id.*

⁶⁵ Angelovska-Wilson & Weiss, *supra* note 20, at 134.

⁶⁶ *Id.* at 3.

⁶⁷ Compare this with the requirements for taking over a PoW network. There, an attacker would need to acquire 50%+ of the computing power within a network in order to meaningfully influence block validation. While seemingly cumbersome, observers have noted that collusion among a group of validating nodes can achieve this “centralized majority.” ITTAY EYAL & EMIN GÜN SIRER, MAJORITY IS NOT ENOUGH: BITCOIN MINING IS VULNERABLE 3 (2014), <https://www.cs.cornell.edu/~ie53/publications/btcProcFC.pdf>.

⁶⁸ *Peercoin University*, *supra* note 5. This is much unlike PoW networks like Bitcoin’s, wherein an attacker does not need an ownership interest in the network and consequently, has little incentive to maintain its integrity.

⁶⁹ See *Peercoin University*, *supra* note 5 “(Attempting this vast purchase would cause demand to spike and the price per [coin] to skyrocket. Any attempt to acquire the amount of coins necessary to perform a successful attack would likely bankrupt the attacker in the process.”).

⁷⁰ Claire Belmont, *Which is More Inclusive: Proof-of-Work or Proof-of-Stake?*, MEDIUM (Jan. 29, 2019), <https://medium.com/celoorg/which-is-more-inclusive-proof-of-work-or-proof-of-stake-aa4fb22812ad>.

⁷¹ *Frequently Asked Questions*, ALGORAND, <https://www.algorand.com/what-we-do/faq> (last visited Feb. 23, 2021).

and thus monopoly force—that accompanies an increase in the members in a network.⁷²

B. Staking-as-a-Service and the Relationship Between Network Participants and Providers

StaaS providers emerged circa 2018, with Chorus One being one of the first to offer its validating services.⁷³ The purpose of these entities was to overcome the final barriers to entry in PoS networks: the time, technical proficiency, and minimum token holdings required for verifying transactions.⁷⁴ Indeed, rather than personally perform the task of validating blocks, the majority of network participants have begun delegating this work to third party entities.⁷⁵ The demand for such services is perhaps obvious: individuals or firms may hold digital tokens, supporting their network against attacks while also passively receiving rewards earned by their StaaS provider.⁷⁶ These rewards are then either sent directly to the StaaS provider, who periodically distributes funds to the participant’s wallet or held in a network distribution wallet, requiring the participant to submit a transaction to withdraw their funds.⁷⁷ Assuming they choose their StaaS provider wisely, participants can greatly reduce their risk of missing rewards or having the network slash their staked assets.⁷⁸ Beyond the initial choice of provider, moreover, the ongoing contract between the two is dictated by multiple factors. These include the structure of the underlying network, service fees and provider business practices.

1. Subcategories of Proof-of-Stake Networks

The arrangement between the StaaS provider and network participant depends largely on the type of PoS network within which they interact. In general, PoS networks may be classified into one of three major categories: (1) traditional or “pure;” (2) “delegated;” or (3) “bonded.”⁷⁹ Pure networks require that StaaS

⁷² Aiya Li et al., *supra* note 16, at 2824.

⁷³ Felix Lutsch, *A Brief History of Proof-of-Stake*, CHORUS ONE (Aug. 9, 2019), <https://blog.chorus.one/brief-history-pos/>.

⁷⁴ See the definition of “Staking Provider” provided by *Ethereum 2.0 Glossary*, CONSENSYS, <https://consensys.net/knowledge-base/ethereum-2/glossary/#saas> (last visited Dec. 2, 2020) (“[s]taking providers help offload the technical burden of maintaining an online validator and/or reduce financial barriers to participation for participants.”).

⁷⁵ See Evan Weiss, *Need Validator Information? Your Proof of Stake Blockchain Has it*, MEDIUM (June 28, 2019), <https://medium.com/proof-of-stake-alliance-posa/need-validator-information-your-proof-of-stake-blockchain-has-it-f3cec8586d3f/>.

⁷⁶ Viktor Bunin, *Staking as a Service: Return of Fractional Banking*, MEDIUM (Nov. 8, 2018), <https://medium.com/@viktorbunin/staking-as-a-service-return-of-fractional-banking-885b5b715fe8>.

⁷⁷ Angelovska-Wilson & Weiss, *supra* note 20, at 134.

⁷⁸ *Id.*

⁷⁹ *Id.* at 134, 136. While these categories are commonly cited as those most typical of PoS networks, there are, in fact, numerous PoS variants that can determine the rights and obligations of both participants and StaaS providers. Stakin, *The Proof-of-Stake Guidebook*, MEDIUM (Feb. 25,

providers “take custody of all the network participant’s assets to validate transactions and earn Rewards.”⁸⁰ This, in effect, requires the StaaS provider to stake the principal using the network participant’s own tokens.⁸¹ Other networks, however, permit the participant to custody their own assets while transferring their rights of validation to a StaaS provider. In such bonded or delegated networks, either the participant or StaaS provider (on the participant’s behalf) stakes the principal, respectively.⁸² These differences in network structures greatly affect the risk that the network participant assumes in the transaction.⁸³ For instance, a typical risk for all networks might include the failure of StaaS providers to distribute the rewards owed to the participant. Pure network participants face additional risks as the StaaS provider could fail to take appropriate security measures or refuse to return custody of the participant’s assets entirely.⁸⁴

The custodial and non-custodial divide among networks and services may also bring about a variance in power afforded to the StaaS provider. In pure networks (where tokens are StaaS-custodied), the participant has essentially ceded her position in the blockchain network to the provider.⁸⁵ To understand why this is the case, it is important to recognize that these pure networks do not technically allow delegation.⁸⁶ Thus, while arrangements in “bonded” or “delegated” systems are facilitated by the network itself, “pure” network StaaS contracts are conducted externally as third-party arrangements.⁸⁷ This may allow providers in “pure” networks to have additional control with regard to governance protocols of the network.⁸⁸ In other words, the validator may not only vote on transaction blocks, but also amendments to the rules which govern the network.⁸⁹ Certain networks

2019), <https://medium.com/stakin/proof-of-stake-guide-dpos-vs-lpos-vs-bpos-vs-hybrid-1393a33e849c> [hereinafter “Guidebook”]. This perhaps underscores the difficulty of broadly classifying all StaaS arrangements as investment contracts given the potentially wide variations in their terms.

⁸⁰ Angelovska-Wilson & Weiss, *supra* note 20.

⁸¹ *Id.* at 134–35.

⁸² *Id.*

⁸³ Anna Grigoryeva-Trier, *Understanding Staking as a Service. Part 1*, MEDIUM (May 10, 2019), <https://medium.com/validators/understanding-staking-as-a-service-part-1-317fa16c707e>. Unfortunately, quantifying said risks has proven difficult in the absence of formal reporting and control mechanisms. This is an area that requires further empirical analysis to determine the extent of the risk that a PoS participant ultimately takes on.

⁸⁴ *Mitigating Risks in Institutional Staking*, BLOCKDATA (Oct. 15, 2021), <https://www.blockdata.tech/blog/spotlight/mitigating-risks-in-institutional-staking-with-blockdaemon>.

⁸⁵ Crypto AM, *Ethereum 2.0 Staking, a Worthwhile Investment?*, CITY A.M. (Jan. 19, 2020, 11:08 AM), <https://www.cityam.com/ethereum-2-0-staking-a-worthwhile-investment/>.

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ See e.g., *Proof-of-Stake (PoS) Voting*, DECRED, <https://docs.decred.org/proof-of-stake/overview/> (last visited Jan. 23, 2021) (explaining that participants in the PoS Decred network delegate to a StaaS provider, or “voting service,” the right to vote on “any open rule change proposals” in addition to pending blocks on the chain).

⁸⁹ *Id.*

then specify that third party services should vote only in accordance with participant's instructions.⁹⁰ Others require that participants merely choose their StaaS provider, surrendering their right to independently alter their votes in networks that only honor the input of the StaaS provider as the token holder.⁹¹

2. Staking Rewards and Provider Service Fees

Staking rewards may be calculated in a variety of ways depending on the blockchain network.⁹² They can take into account the amount staked by the participant and the length of time the participant has staked, among other factors.⁹³ On the other hand, there are networks wherein rewards are determined solely as a fixed amount pegged to that network's rate of inflation.⁹⁴ As in traditional economies, this rate is contributed to in part by the growth in money—or here, token—supply.⁹⁵ An increasing supply by way of newly minted tokens may diminish the value of each token, but also creates incentives for consumption and investment that lead to greater network productivity.⁹⁶

As payment for their services, StaaS providers can expect to earn a fee that is oftentimes a percentage of the staking reward.⁹⁷ This model is particularly lucrative considering the total annual rewards owed to network participants was greater than \$230 million USD as of December 2019.⁹⁸ Furthermore, the average rate of return for staking for network participants have ranged from 5% to 25% percent annually,⁹⁹ with the annualized rate of return reaching approximately 11%.¹⁰⁰ These

⁹⁰ *Id.*

⁹¹ For a comparison of governance rights afforded to StaaS providers among certain PoS networks, see Lleland Lee, *Centralized Governance is Inevitable*, MEDIUM (Jan. 20, 2020), <https://medium.com/@lsquaredleland/centralized-governance-is-inevitable-3017edeed65e>.

⁹² *What is Staking?*, *supra* note 13.

⁹³ *Id.*

⁹⁴ *Id.* These inflation rates are established automatically by the network's program. In certain networks, this program ensures that the inflation rate decreases as staking participant increases. See Lewis Cohen et al., *Decentralized Finance: Have Digital Assets and Open Blockchain Networks Found Their "Killer App"?*, in BLOCKCHAIN & CRYPTOCURRENCY REGULATION 2021 26 (3rd ed. 2020).

⁹⁵ For a more in-depth discussion of inflation and its role in PoS networks, see *Understanding Inflation in Crypto Networks*, MEDIUM (Mar. 21, 2019), <https://medium.com/blockchannel/inflation-in-crypto-networks-b957df30987e>.

⁹⁶ *Id.*

⁹⁷ The Proof-of-Stake Guidebook, *supra* note 79.

⁹⁸ Note that the figure accounts for just the top twenty of the largest PoS networks in existence by the end of 2019. Enecuum, *supra* note 52.

⁹⁹ Ian Allison, *Coinbase Leads Wall Street to Brave New World of Crypto Staking*, COINDESK (Mar. 29, 2019, 4:04 AM), <https://www.coindesk.com/coinbase-leads-wall-street-to-brave-new-world-of-crypto-staking> (last updated Mar. 30, 2019, 7:23 AM).

¹⁰⁰ *The Most Comprehensive Interpretation of the "Staking Economy" of the Fire, How Do Ordinary People Lay Down? (With Guide)*, BLOCKING, <https://blocking.net/6476/the-most-comprehensive-interpretation-of-the-staking-economy-of-the-fire-how-do-ordinary-people-lay-down-with-guide/> (last visited Jan. 8, 2021). Thirty-year U.S. Treasury bonds often yield less than

figures do not necessarily account, however, for the actual return to the participants once a StaaS provider has taken its cut of rewards. These actual returns are neither uniformly nor universally reported; though estimates place the typical service fee in the range of five to twenty-five percent per provider.¹⁰¹ Notably, Coinbase Custody, a leading StaaS provider, has previously advertised an annual return of 6.6% to network participants after the company retains its service fee.¹⁰² That number is sure to be important to participants looking for third-party services. As a survey of Ethereum participants has shown, 55.2% of those interested in using a StaaS provider view reward compounding as their favorite feature.¹⁰³

3. Variances in Provider Business Practices

In addition to considering service fees, network participants may also choose a StaaS provider based on its business practices. This section will highlight major variances in these practices, including: (1) how the StaaS provider stores the participant's assets over which they have custody; and (2) whether the StaaS provider itself is invested in the PoS network. Regarding the former, providers primarily have two options for storage, either "hot" or "cold" wallets. While a hot wallet is online and connected to the network, cold wallets exist offline and in physical form (oftentimes, as a USB drive).¹⁰⁴ The advantages and drawbacks of each method have been widely discussed; mainly, cold storage provides greater protection of assets from loss or theft on the network.¹⁰⁵ As such, participants may be more inclined to use a StaaS provider that maintains funds in a cold wallet. This is why some providers, such as Coinbase, store and indemnify all client funds intended for staking offline.¹⁰⁶ To post a stake, the company provides its own funds to the network's hot wallet, essentially eliminating the client's personal risk of

two percent, by comparison. *Daily Treasury Yield Curve Rates*, DEPT. OF THE U.S. TREASURY, <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/pages/textview.aspx?data=yield> (last visited Dec. 11, 2020) (select '2021' under 'Select Time Period').

¹⁰¹ *The Most Comprehensive Interpretation of the "Staking Economy" of the Fire*, *supra* note 100.

¹⁰² The annual rate of return for staking without delegation to StaaS providers has been calculated at around eight percent for Tezos, one of the top twenty PoS networks in terms of market cap as of December 2020. This places Coinbase Custody's fee for validating between twenty to twenty-five percent for this particular network. Allison, *supra* note 99. *See also* Tezos, COINMARKETCAP, <https://coinmarketcap.com/currencies/tezos/> (last visited Dec. 2, 2020).

¹⁰³ MARA SCHMIEDT ET AL., ETHEREUM 2.0 STAKING ECOSYSTEM REPORT 19 (2020).

¹⁰⁴ Will Kenton, *Hot Wallet*, INVESTOPEDIA (June 30, 2020), <https://www.investopedia.com/terms/h/hot-wallet.asp>.

¹⁰⁵ *See e.g., Hot Wallet vs Cold Wallet in Cryptocurrency Storage*, COIN INSIDER (Dec. 11, 2020), <https://www.coininsider.com/hot-vs-cold-wallets-cryptocurrency/>.

¹⁰⁶ *A Behind the Scenes Look at the Biggest (and Quietest) Crypto Transfer on Record*, COINBASE (Dec. 14, 2018), <https://blog.coinbase.com/a-behind-the-scenes-look-at-the-biggest-and-quietest-crypto-transfer-on-record-682ff4a6d9e4>.

funds being slashed or stolen.¹⁰⁷ This slashing protection may increase the trust that participants are willing to place in their provider.¹⁰⁸

Equally critical to establishing trust is whether StaaS providers themselves have chosen to participate and stake their own funds in the PoS networks that they serve.¹⁰⁹ In doing so, the provider aligns its own interests with those of its clients and the network at large.¹¹⁰ Should a provider fail to validate blocks or do so incorrectly, they will in turn suffer the consequences of a weakened network and slashed assets. This so-called “skin in the game” approach may increase confidence between network participants and their providers.¹¹¹

C. Current Developments in Regulation

Regulation of PoS and StaaS providers has thus far been limited. As of May 2020, the Proof of Stake Alliance (“POSA”) has presented a set of industry-driven standards to the SEC.¹¹² POSA has recommended that StaaS providers (1) focus advertising on enhancing network participation and security; (2) refrain from using financial terminology such as “interest,” “dividend,” or “yield”; (3) avoid claims that the provider has control over the staking inflation rate; and (4) not provide guarantees as to the amount of staking rewards to be earned.¹¹³ Their goal, according to members, is to achieve regulatory clarity for PoS networks and the unique challenges that they present.¹¹⁴ This clarity would involve not only defining

¹⁰⁷ Brian Curran, *What is a Staking as a Service? Complete Guide*, BLOCKONOMI (Aug. 6, 2020), <https://blockonomi.com/staking-as-a-service/> (discussing the importance of Coinbase using cold storage, providing the required stake, and insuring participant funds in the cold wallet).

¹⁰⁸ As evidence of this, a poll of Ethereum participants interested in staking showed that 46% listed slashing protection as the feature they cared most about when running their own validator node. SCHMIEDT ET AL., *supra* note 103 at 17.

¹⁰⁹ Enecuum, *supra* note 52.

¹¹⁰ See e.g., *Why Us?*, STAKIN, <https://www.stakin.com/home> (last visited Dec. 11, 2021) (“[a]s a dedicated staking provider, we are completely aligned with the interest of our token holders. With our own digital assets also locked up, we are fully engaged towards the success of each of the protocols where we operate.”). While this alignment may generate goodwill between clients and providers, there are also concerns that institutional participants such as StaaS providers are better able to acquire a majority of the network’s tokens and/or coordinate amongst themselves to achieve said influence. The potential for monopolies, though certainly a threat to the decentralization of PoS networks, are beyond the scope of the article. See Enecuum, *supra* note 52.

¹¹¹ Jake Stott, *Staking-as-a-Service: The New Social Signal*, MEDIUM (April 26, 2019), <https://medium.com/beyondhype/staking-as-a-service-the-new-social-signal-hype-partners-de3051886abc>.

¹¹² *Paul Hastings Advises Proof of Stake Alliance as it Advances “Staking as a Service” Industry Driven Solution*, PAUL HASTINGS, LLP (May 14, 2020), <https://www.paulhastings.com/news/details/?id=6864506f-2334-6428-811c-ff00004cbded>.

¹¹³ POSA, *POSA Advances Staking as a Service Industry Driven Solutions*, MEDIUM (May 14, 2020), <https://medium.com/proof-of-stake-alliance-posita/posita-advances-staking-as-a-service-industry-driven-solutions-60180943773b>.

¹¹⁴ Guillermo Jimenez, *Why a Proof of Stake Blockchain Alliance is Lobbying Congress*, YAHOO! (Aug. 15, 2019), <https://www.yahoo.com/now/why-proof-stake-blockchain-alliance-214210671.html>.

StaaS arrangements for the purposes of SEC regulation, but also specifying which, if any, transactions constitute taxable events.¹¹⁵ Additionally, POSA seeks to have FinCEN rule that StaaS providers are not MSBs under the BSA.¹¹⁶

Although it remains unclear how regulators will respond to requests by POSA, actions by certain lawmakers suggest that they may be sensitive to regulatory burdens. In July 2020, members of the Congressional Blockchain Caucus drafted a letter to Internal Revenue Service (“IRS”) officials requesting that PoS network participants not face tax liabilities for receiving rewards prior to selling their new tokens.¹¹⁷ The legislators emphasized that regulations should be geared towards creating safeguards, while also ensuring that PoS networks are not drained of their innovation.¹¹⁸

On the other hand, more recent developments in Congress may bring about increased costs for StaaS providers in the form of required reporting. The Infrastructure Investment and Jobs Act (“IIJA”)—introduced in June and enacted in November 2021—characterizes StaaS providers as “brokers” under section 6045(c)(1) of the Internal Revenue Code.¹¹⁹ As such, they will be required to report to the IRS the proceeds and personal information of all parties involved in digital asset transfers.¹²⁰ The changes are expected to take effect in January 2024.¹²¹

Given the encrypted nature of these transactions, reporting may prove logistically impossible for StaaS providers, who often do not have access to the types of personal information required under the new rule.¹²² While proponents of the measure believe it will curb tax evasion in crypto markets, critics fear the increased compliance costs and offshoring that will likely occur.¹²³ The Treasury Department has pledged to not target blockchain miners and StaaS entities, likely due to the aforementioned concerns.¹²⁴ Still, skeptics would appropriately argue

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ Letter from Hon. David Schweikert et al., Members of U.S. Congress, to Hon. Charles P. Rettig., Comm. of IRS (July 29, 2020), <https://schweikert.house.gov/sites/schweikert.house.gov/files/Final%20Proof%20of%20Stake%20IRS%20Letter%207.29.20.pdf>.

¹¹⁸ *Id.*

¹¹⁹ Infrastructure Investment and Jobs Appropriations Act § 80603, H.R. 3684, 117th Congress § 1 (2021).

¹²⁰ Nicholas Anthony, *Infrastructure Bill Hangs in the Balance, and so Does Crypto*, CATO INSTITUTE (Oct. 8, 2021, 10:41 AM), <https://www.cato.org/blog/infrastructure-bill-hangs-balance-so-does-crypto>. This requirement is not wholly dissimilar from the reporting requirements for MSBs in that it does not increase consumer protections

¹²¹ Megan Henney, *Bipartisan Infrastructure Bill Target Crypto Industry with Stricter Oversight: What to Know*, FOX BUSINESS (Nov. 10, 2021), <https://www.foxbusiness.com/economy/bipartisan-infrastructure-bill-targets-crypto-industry.amp>.

¹²² *Id.*

¹²³ *Id.*

¹²⁴ *Id.*

that this pledge is far from a guarantee that administrators will forever refrain from strictly enforcing the new rule.¹²⁵

The IJA will no doubt have widespread implications for StaaS providers in terms of their financial liabilities. Clarifying the regulatory classification of these arrangements has therefore become even more critical.

III. APPLICATION AND INADEQUACIES OF CURRENT REGULATION

A. *The Howey Test and Potential Regulation under the SEC*

2021 marks the seventy-fifth anniversary since the Supreme Court provided a definition of investment contract per Section 2(a)(1) of the Securities Act of 1933.¹²⁶ That definition, provided in the seminal case *SEC v. W.J. Howey Co.*, has persisted as the foundational framework for analyzing whether certain arrangements qualify as securities. The *Howey* test, moreover, “applies to any contract, scheme, or transaction, regardless of whether it has any of the characteristics of typical securities.”¹²⁷ It defines an investment contract, with no one factor being dispositive, as a contract that involves (i) an investment of money, (ii) in a common enterprise, (iii) in which the investor is led to expect profits, (iv) derived from the entrepreneurial or managerial efforts of one or more third parties.¹²⁸ Should an arrangement generally meet those criteria, the issuing company must, among other obligations, disclose material financial information through the registration of its securities.¹²⁹

A threshold point is that the *Howey* test will almost certainly be the framework applied to StaaS arrangements should they be scrutinized by the SEC. The agency and courts have primarily applied the test to digital assets that do not neatly fit into the other enumerated categories of Section 2(a)(1) securities.¹³⁰ This application first occurred in July 2017, when the SEC concluded in an investigative report that the sale of Decentralized Autonomous Organization tokens (“DAOs”) was an investment contract and thus unregistered security.¹³¹ There, the agency also emphasized the applicability of securities laws to the emerging blockchain sector

¹²⁵ *Id.*

¹²⁶ See *SEC v. W.J. Howey Co.*, 328 U.S. 293, 301 (1946). See also Securities Act of 1933, 15 U.S.C. § 77a–77mm (1933).

¹²⁷ Douglas Landy et al., *Distributed Ledger Technology as a Tool for Streamlining Transactions*, in *BLOCKCHAIN & CRYPTOCURRENCY REGULATION 2020* 232, 233 (2nd ed. 2019). Crucially, the Court noted that “form should be disregarded for substance” when analyzing whether an arrangement qualifies as a security. *SEC v. W.J. Howey Co.*, 328 U.S. at 298.

¹²⁸ See *SEC v. W.J. Howey Co.*, 328 U.S. at 301.

¹²⁹ SEC, *Registration Under the Securities Act of 1933*, INVESTOR, <https://www.investor.gov/introduction-investing/investing-basics/glossary/registration-under-securities-act-1933> (last visited Feb. 1, 2021).

¹³⁰ Landy et al., *supra* note 127, at 234. See also Angelovska-Wilson, *supra* note 20, at 135.

¹³¹ David L. Concannon et al., *The Yellow Brick Road for Consumer Tokens: The Path to SEC and CFTC Compliance An Update*, in *BLOCKCHAIN & CRYPTOCURRENCY REGULATION 2020* 64, 64 (2nd ed. 2019).

and those—including perhaps StaaS providers—that operate within its bounds.¹³² It later conducted its first enforcement action against the unauthorized sale of digital assets in December 2017, citing again to *Howey*.¹³³ This has been followed by dozens of cases involving blockchain technology that the SEC has brought between 2017 and 2020.¹³⁴ Though, none has yet involved the specific question regarding contracts between StaaS providers and PoS network participants.

To supplement the application of *Howey* to distributed ledger networks, the SEC also issued its “Framework for ‘Investment Contract’ Analysis of Digital Assets” (the “SEC Framework”) in April 2019.¹³⁵ As described in the framework, any person “engaging in the offer, sale, or distribution of a digital asset” must “consider whether the U.S. federal securities laws apply,” and a threshold issue is “whether the digital asset is a ‘security’ under those laws.”¹³⁶ While that framework is new, its essential underpinning is not: “[c]entral to the SEC’s analysis has been, and continues to be, the [four-prong test] articulated by the Supreme Court” in *SEC v. W.J. Howey Co.*¹³⁷

This Note applies the *Howey* test, as elaborated upon by case law and the SEC Framework, to StaaS arrangements. It concludes that all StaaS arrangements should and will meet the definition of common enterprise. Still, the analysis grows more fact-intensive on the first and third prongs regarding investment and investor expectations, respectively. Here, a close investigation shows that certain providers should be able to avoid satisfying these prongs based on their practices. Lastly, while most, if not all, providers do not currently satisfy the requisite entrepreneurial or managerial efforts, this Note considers whether providers can eventually gain

¹³² See SEC, RELEASE NO. 81207, REPORT OF INVESTIGATION PURSUANT TO SECTION 21(A) OF THE SECURITIES EXCHANGE ACT OF 1934: THE DAO 2 (2017), <https://www.sec.gov/litigation/investreport/34-81207.pdf>.

¹³³ This action came in the form of cease-and-desist proceedings to halt Munchee Inc.’s digital token sale, which the agency concluded to be an unregistered securities offering. See SEC, RELEASE NO. 10445, ORDER INSTITUTING CEASE-AND-DESIST PROCEEDINGS PURSUANT TO SECTION 8A OF THE SECURITIES ACT OF 1933, MAKING FINDINGS, AND IMPOSING A CEASE-AND-DESIST ORDER 2 (2017), <https://www.sec.gov/litigation/admin/2017/33-10445.pdf>. See also Concannon et al., *supra* note 131, at 65 (“A key lesson of the Munchee Order was that despite the utility design features of the MUN Tokens, the manner in which the digital assets were offered to prospective investors, and the presence of investment intent on the part of participating investors constituted material factors for the SEC in determining that the offering was a securities offering subject to the US federal securities laws.”).

¹³⁴ Specifically, the agency has boasted of bringing fifty-seven cases involving “ICOs, blockchain or distributed ledger technology, and/or digital assets” between May 2017 and December 2020. SEC, *Selected SEC Accomplishments: May 2017 – December 2020*, <https://www.sec.gov/selected-sec-accomplishments-may-2017-2020> (last modified Dec. 23, 2020).

¹³⁵ SEC, *Framework for “Investment Contract” Analysis of Digital Assets* (last modified Apr. 3, 2019), <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets> [hereinafter SEC Framework].

¹³⁶ *Id.*

¹³⁷ Landy et al., *supra* note 127.

sufficient managerial control over the network, thereby potentially satisfying this prong in the future.

1. Common Enterprise

Under the *Howey* framework, a “common enterprise” is often defined as an operation in which all participants’ profits are intertwined and dependent on the efforts of a promoter or third party.¹³⁸ The SEC Framework notes that “[i]n evaluating digital assets, [the agency] ha[s] found that a ‘common enterprise’ typically exists.”¹³⁹ This is because the agency presumes that “the fortunes of digital asset purchasers have been linked to each other or to the success of the promoter’s efforts.”¹⁴⁰ This likely will and should hold true for StaaS arrangements existing within PoS networks.

“Common enterprise” may take the form of horizontal—or in some jurisdictions, vertical—commonality.¹⁴¹ Many courts have accepted that “horizontal commonality” satisfies the common enterprise requirement.¹⁴² This may be defined as “a type of commonality that involves the pooling of assets from multiple investors so that all share in the profits and risks” of the investment.¹⁴³ On the other hand, certain courts have found that a common enterprise exists where a participant’s investment and potential profit are tied solely to “the promoter’s success rather than to the fortunes of his or her fellow investors.”¹⁴⁴ Here, this so-called “vertical commonality” may take one of two forms: a broad form, where the profits of investors depend upon the promoter’s execution, or a narrow form, where the profits of the investor and promoter are mutually dependent.¹⁴⁵

With regard to horizontal commonality, courts should find that the requirement is satisfied by the pooling of participant validation rights by StaaS providers.¹⁴⁶ It is the aggregation of these participants and their reward-generating potential that justifies StaaS providers’ offering their services.¹⁴⁷ Additionally, many StaaS

¹³⁸ See *Revak v. SEC Realty Corp.*, 18 F.3d 81, 87 (2d Cir. 1994) (defining common enterprise as “the tying of each individual investor’s fortunes to the fortunes of the other investors by the pooling of assets, usually combined with the pro-rata distribution of profits”).

¹³⁹ SEC Framework, *supra* note 135. Note that the SEC typically “does [not] view a ‘common enterprise’ as a distinct element of the term ‘investment contract.’” This position differs from that of the courts, which have required that all investment contracts exhibit some commonality. *Id.*

¹⁴⁰ *Id.*

¹⁴¹ See *SEC v. SG Ltd.*, 265 F.3d 42, 49 (1st Cir. 2001) (noting the split among courts who view horizontal versus vertical commonality as an acceptable definition of common enterprise).

¹⁴² See *id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ Ryan Borneman, *Why the Common Enterprise Test Lacks a Common Definition: A Look Into the Supreme Court’s Decision of SEC v. Edwards*, 5 U.C. DAVIS. BUS. L. J. 16, 16 (2005).

¹⁴⁶ *Angelovska-Wilson & Weiss*, *supra* note 20, at 136.

¹⁴⁷ Compare with the facts presented in *Howey*: there, the Court noted that the “individual development of the plots of land . . . would seldom be economically feasible due to their small

providers will “pool” the stakes of participants in order to meet a given network’s staking threshold (i.e., the number of tokens required to be eligible to validate transactions).¹⁴⁸ Network participants using a common StaaS provider thus proportionally experience any gains and losses based on their portion of the pooled stake and the provider’s efforts to validate transactions.¹⁴⁹

Where the jurisdiction calls for it, StaaS arrangements should also satisfy the question of broad vertical commonality. This would be similar to the case of *SEC v. Koscot Interplanetary, Inc.*, wherein the Fifth Circuit found that the investors’ potential profits were “inextricably tied” to the success of the promoter.¹⁵⁰ A similar argument could be made here for network participants’ reliance on providers’ performance once the contract has been entered into. Assuming that poor or non-performance leads to slashing or loss of rewards, a participant arguably relies on the provider’s success. Because providers also typically receive a portion of earned rewards, an additional case can be made for narrow vertical commonality as their earnings increase proportionally with those of their participants.¹⁵¹

Courts should find that StaaS arrangement exhibit common enterprise, regardless of the definition they’ve adopted. In that respect, common enterprise is one area where all StaaS providers are potentially created equal.

2. Investment of Money

In general, the first prong of *Howey* is satisfied so long as the offeree in an arrangement provides an investment of money with the hope of some future return.¹⁵² This has been expanded by the Supreme Court in *International Brotherhood of Teamsters v. Daniel* to include an investment of any “tangible and definable consideration,” as opposed to pure cash exchanges.¹⁵³ As a result of the broad standard, this initial hurdle is often overlooked and rarely litigated.¹⁵⁴ Its breadth has caused courts and scholars alike to conclude that “any nuanced reading of the first element is subsumed” by the remaining test factors.¹⁵⁵

size. Such tracts gain utility only when cultivated and developed as component parts of a larger area.” *SEC v. W.J. Howey Co.*, 328 U.S. 293, 300 (1946). Similarly, a StaaS arrangement is only profitable to all parties so long as they can pool rights and rewards from multiple participants.

¹⁴⁸ Kirill Kutakov, *Understanding Staking Pools and Their Tokenomics*, CRYPTOTESTERS, (Jan. 7, 2021), <https://cryptotesters.com/blog/staking-pools>.

¹⁴⁹ Angelovska-Wilson & Weiss, *supra* note 20, at 136.

¹⁵⁰ *SEC v. Koscot Interplanetary, Inc.*, 497 F.2d 473, 479 (5th Cir. 1974).

¹⁵¹ See Marc G. Alcer, *The Howey Test: A Common Ground for the Common Enterprise Theory*, 29 U.C. DAVIS L. REV. 1217, 1228 (1996) (“The narrow vertical approach finds a common enterprise if there is a correlation between the fortunes of an investor and a promoter.”).

¹⁵² *Int’l Bhd. of Teamsters v. Daniel*, 439 U.S. 551, 560 (1979).

¹⁵³ *Id.*

¹⁵⁴ See THOMAS LEE HAZEN, *SECURITIES REGULATION: CASES AND MATERIALS* 140–41 (7th ed. 2006) (“The ‘of money’ element is easily disposed of, since it is clear that ‘money’ in this context is simply shorthand for ‘something of value.’”).

¹⁵⁵ See J. Scott Colesanti, *Trotting Out the White Horse: How the S.E.C. Can Handle Bitcoin’s Threat to American Investors*, 65 SYRACUSE L. REV. 1, 32 (2015).

This would imply that the stake and compensation of StaaS providers via network tokens facially meets the threshold for investment. There is no question that a given network's tokens constitute items of value per the first prong of *Howey*.¹⁵⁶ Yet the issue of "investment" is confounded given that the network participant does not actually relinquish the title of their tokens to either the network or the provider.¹⁵⁷ Absent said transfer, network participants can be said to provide only the following in StaaS arrangements: (1) their network validation rights; (2) a portion of their owed rewards in the form of provider fees; and (3) in certain networks, the required stake. Though these are critical to the StaaS's function, it is not clear that the participant has invested anything of tangible value to the provider. As providers would likely argue with respect to validation rights and service fees, these should almost certainly not be deemed investments. A further network-by-network analysis also shows that, even where a participant provides the stake, the nature of this arrangement is more analogous to consignment—a type of agreement typically regulated via contract law as opposed to SEC oversight. The following sections expound these arguments against investment classification with respect to the PoS participant's delegation of validation rights, payment of provider service fees, and contribution of the stake.

i) Delegation of Validation (Voting) Rights

In all StaaS contracts, the transfer of validation rights from participant to provider should not qualify as the participant's investment. This is clear from the temporary nature of this transfer and the purpose it is meant to serve. It enables the StaaS provider to not only verify transactions, but also, in some cases, participate in the governance of the overall network.¹⁵⁸ These actions may both be thought of as voting mechanisms, where validating the network or altering its bylaws requires voting on proposed blocks or rules, respectively.¹⁵⁹ The question then becomes whether these rights to vote are themselves things of tangible value. To answer this, it is possible to compare the delegation of network rights to corporate shareholder voting by proxy.

Corporate shareholders—unwilling or unable to participate in governance—may delegate their rights to vote on such matters to another entity (i.e., a proxy).¹⁶⁰

¹⁵⁶ To the extent that this question has been examined, scholars have agreed that virtual currencies, regardless of their convertibility to "real world cash" are nonetheless items of value given that network participants can exchange them for virtual goods and services, indicating their tangible consideration. See Shannon L. Thompson, *Securities Regulation in a Virtual World*, 16 UCLA ENT. L. REV. 89, 103 (2009), <https://heinonline.org/HOL/P?h=hein.journals/uclaetr16&i=111>.

¹⁵⁷ Cohen et al., *supra* note 94. Assuming these have not been lost due to theft or slashing.

¹⁵⁸ Again, governance here refers to the rules by which the network operates, such as the baseline amount required to participate in staking. See, e.g., *Proof-of-Stake (PoS) Voting*, *supra* note 88.

¹⁵⁹ See Leonardos et al., *supra* note 49. See also Landua, *supra* note 50.

¹⁶⁰ *Proxy Vote*, CORP. FIN. INST., <https://corporatefinanceinstitute.com/resources/knowledge/finance/what-is-proxy-vote/> (last visited Feb. 28, 2021).

Though not giving up their valuable stake in the corporation, they allow the proxy to control this stake for a set period. This is in many ways analogous to the delegation of voting rights to StaaS providers.¹⁶¹ It is an opportunity for shareholders to aggregate their voting power¹⁶²—equivalent to the pooling of PoS validation rights via StaaS arrangements.¹⁶³ Like the separation of corporate ownership and governance, the right to tokens and staking rewards may also be severed from the right to manage network rules and transactions.¹⁶⁴ An argument may then be made that, as with shareholder proxy voting, delegating the right to vote does not itself amount to an investment by the delegator.¹⁶⁵ The temporary authorization is merely a requisite for StaaS providers to perform their intended function.

ii) Payment of Provider Service Fees

As with validation rights, investment should not be satisfied solely by provider service fees. Rather, payment of these fees merely presents an exchange of compensation for the StaaS provider's labor. As many StaaS providers note in their terms and conditions, the participant agrees to pay a fee—either as a set one-time payment or a continuous cut of rewards.¹⁶⁶ The agreement between participant and provider that the provider should receive fees for their efforts is definitionally a service contract.¹⁶⁷

¹⁶¹ See generally Lee, *supra* note 91.

¹⁶² *Proxy Vote*, *supra* note 160.

¹⁶³ Weiss, *supra* note 75.

¹⁶⁴ See EUR. BLOCKCHAIN ASS'N, STAKING INFRASTRUCTURE PROVIDER POSITION PAPER 6 (2020), [https://uploads-ssl.webflow.com/5ec5253f99142f2517b620b2/5ef1b634bd315b86f200465e_EBA_WG_EUPOS_Position_Paper%20\(2\).pdf](https://uploads-ssl.webflow.com/5ec5253f99142f2517b620b2/5ef1b634bd315b86f200465e_EBA_WG_EUPOS_Position_Paper%20(2).pdf) (“Delegators only transfer the right to stake their tokens without transferring ownership of the token itself. The original holder remains the legal owner of tokens at all times and receives all the benefits of the staking validation.”).

¹⁶⁵ As some providers maintain goals and stances on certain governance aspects, participants may find that their voting right is used to support proposals that they disagree with. Lee, *supra* note 91. This is mitigated by some networks that require a limited delegation, wherein the StaaS provider may only vote as directed by the participant. See e.g., *Proof-of-Stake (PoS) Voting*, *supra* note 88. Moreover, it is possible for the SEC and state laws to further address this concern by allowing StaaS providers to register as investment advisers. See Div. of Inv. Mgmt., *General Information on the Regulation of Investment Advisers*, SEC (March 11, 2011), <https://www.sec.gov/divisions/investment/iaregulation/memoia.htm>. This would in turn impose rules requiring StaaS providers to vote in the best interests of their clients. 17 C.F.R. § 275.206(4)-(6) (2003).

¹⁶⁶ See e.g., *Terms of Service*, STAKEFISH, <https://stake.fish/en/ethereum/terms-of-service/> (last updated Dec. 10, 2020); *Terms and Conditions*, STAKING FACILITIES, https://stakingfacilities.com/documents/SF_Terms-and-Conditions_11_2020.pdf (last updated Jan. 11, 2020).

¹⁶⁷ *Contract*, BLACK'S LAW DICTIONARY (11th ed. 2019) (“A contract to perform a service; esp., a written agreement to provide maintenance . . . on a consumer product for a specified term.”).

That a service contract exists, however, does not necessarily make these arrangements akin to those that the Court examined in *Howey*. There, the facts indicated a service contract for the maintenance of citrus groves in conjunction with the sale of land to purchasers.¹⁶⁸ The combination of this contract along with the land sales contract and warranty deed rendered the entire arrangement a security.¹⁶⁹ Subsequent courts have since confirmed the problematic coupling of purchase and service agreements that “could not be pulled apart into separate transactions.”¹⁷⁰ Such bundle arrangements can be considered investment contracts and therefore unregistered securities.¹⁷¹ Here, a StaaS provider could argue, there is no such packaging of transactions. Because the purchase of tokens occurs with the network itself, there is no purchase or sales contract with the provider.¹⁷² The only arrangement that exists between participant and provider then is the service contract for managing the validation node.¹⁷³ It follows that, just as the purchase of an asset “is not, in itself, a securities transaction,” it also does not “become one when the purchaser independently procures management services from others.”¹⁷⁴

iii) Contribution of the Stake

The foregoing discussion begs the final question: does the stake equate to an investment comparable to that in *Howey*? Some proponents argue that the combination of deposited tokens and paid rewards from the provider would surely fit *Howey*'s criteria.¹⁷⁵ This is complicated, however, given the variability in who supplies the staked tokens. Given this variation, PoS networks may be categorized as pure, bonded, or delegated.¹⁷⁶ Whereas pure networks require that StaaS providers to take custody of the network participant's assets while validating,

¹⁶⁸ SEC v. W.J. Howey Co., 328 U.S. 293, 295 (1946)

¹⁶⁹ *Id.* at 300.

¹⁷⁰ See e.g., SEC v. Rubera, 350 F.3d 1084, 1091 (9th Cir. 2003)

¹⁷¹ *Id.* (Holding that a pay phone sale and service contract package was an investment contract per *Howey*). See also Cameron v. Outdoor Resorts of Am., Inc. 608 F.2d 187, 192-93 (1979) (Finding that both the sale and rental arrangement of a campsite property constituted an offering of a security).

¹⁷² As StaaS providers like Staked will note, it is not possible for users to purchase tokens directly from their organization. See *Frequently Asked Question*, STAKED, <https://staked.us> (last visit Mar. 11, 2021). Others such as Kraken also offer exchange services allowing participants to purchase and stake tokens through the same account. While these, in a sense, group transactions, the exchange merely functions as a facilitation service between a token's seller and buyer. See *How Cryptocurrency Exchanges Work?*, GATEHUB (July 14, 2020), <https://gatehub.net/blog/how-cryptocurrency-exchanges-work/>.

¹⁷³ An example is if a participant purchased and staked XTZ coins on the PoS network Tezos. Instead of using Tezos to validate nodes, a participant may enter into a service contract with a StaaS provider like Staked that services the Tezos network, among dozens of others. See *Yields: Key Staking and Financial Metrics*, STAKED, <https://staked.us/yields/> (last visited Feb. 29, 2021).

¹⁷⁴ Hocking v. Dubois, 885 F.2d 1449, 1464 (9th Cir. 1989).

¹⁷⁵ Dean Steinbeck, *Breaking: Some Crypto Staking Investments are Securities Offerings*, CRYPTO LAW INSIDER (June 9, 2020), <https://cryptolawinsider.com/crypto-staking-returns-securities-offering/>.

¹⁷⁶ Angelovska-Wilson & Weiss, *supra* note 20, at 134, 136

delegated and bonded networks have no such mandate.¹⁷⁷ The type of network and service affect who posts the stake, resulting in one of the following scenarios: (1) the provider uses the participant's assets to post the stake in pure networks or where there are custodial services; (2) the participant personally posts the stake in bonded networks; or (3) the provider posts the stake on behalf of the participant in delegated networks.¹⁷⁸ As noted, “[r]egardless of whether a StaaS provider is simply delegated the holder's validation rights or actually takes custody of the holder's digital assets . . . the holder remains the legal and beneficial owner of [their] staked digital assets at all times.”¹⁷⁹ It is this retention of ownership that could allow StaaS providers to argue that a participant-provided stake (whether directly or indirectly through a custodial provider) is equivalent to an asset on consignment.¹⁸⁰

Consignment is the process of giving assets to another to sell “with the understanding that the seller will pay the owner . . . from the proceeds.”¹⁸¹ In other words, the seller uses the owner's asset to perform a service (e.g., marketing the item) to generate revenue (i.e., the proceeds from its sale). Similarly, StaaS providers require staked assets to perform validation and generate rewards. The situations are analogous in that, even where the assets have changed custody, the owner retains title to the goods and the revenue that they create.¹⁸² As with traditional consignment, a participant-supplied stake is not intended for the StaaS's discretionary use.¹⁸³ Rather, the StaaS provider as the consignee is merely entitled to fair commission of revenue pending the success of their efforts.¹⁸⁴

To place this relationship in context, it is helpful to examine similar commercial arrangements that do not rise to the level of securities. One notable example is that of art consignment, wherein artists consign their works to a dealer, recovering the basis only when the dealer sells the work.¹⁸⁵ The benefit of this arrangement to artists is their ability to rely on the dealer's marketing expertise and sales network.¹⁸⁶ Like StaaS arrangements, the tradeoff of benefitting from the dealer's efforts is that the artist risks the dealer's failure or non-performance. Unsuccessful

¹⁷⁷ *Id.* at 134-35.

¹⁷⁸ *Id.*

¹⁷⁹ Cohen et al., *supra* note 94.

¹⁸⁰ Additionally, for the network, stakes merely function as collateral—allowing the blockchain to discourage bad behavior. *What are Proof of Stake and Delegated Proof of Stake?*, GEMINI (Jan. 5, 2021), <https://www.gemini.com/cryptopedia/proof-of-stake-delegated-pos-dpos>.

¹⁸¹ *Consign*, BLACK'S LAW DICTIONARY (11th ed. 2019).

¹⁸² See Edwin E. Smith, *Understanding Consignments in Retail Bankruptcies*, MORGAN LEWIS (July 13, 2018), <https://www.morganlewis.com/pubs/2018/07/understanding-consignments-in-retail-bankruptcies>.

¹⁸³ *Id.*; Cohen et al., *supra* note 94.

¹⁸⁴ Successful effort being the proper validation of blocks in the network. In the case of typical consignment, a successful effort is the sale of the asset. Smith, *supra* note 182.

¹⁸⁵ Richard Stim, *Is it Risky to Sell Art or Craft Work on Consignment?*, <https://www.nolo.com/legal-encyclopedia/consigning-arts-crafts-30281.html> (last visited Mar. 12, 2021).

¹⁸⁶ Reginald Bullock, Jr., *Imposing the Underwriters' Duty of Care on Art Auctioneers*, 7 CARDOZO ARTS & ENT. L.J. 359, 364 n.34 (1989).

attempts at selling a piece of art can result in a decrease in the work's value (due largely to unfavorable public perception).¹⁸⁷ The same may be said of a StaaS provider's failure to adequately perform: in that event, the participant-supplied stake decreases in value if it is slashed by the network.¹⁸⁸ Despite these risks in the art context, courts and the SEC have not concluded that artist-consignors require the protections afforded by securities laws.¹⁸⁹ To the extent they are governed, art consignment arrangements find some regulation in state legal codes.¹⁹⁰

Should regulators or courts be unconvinced by a consignment theory, it will potentially result in inconsistent oversight of StaaS arrangements. This is because, in those networks in which a StaaS provider's assets—rather than the participant's—are staked, the participant has certainly not given over anything of value.¹⁹¹ It will thus be difficult to find that the participant has satisfied the investment prong with merely the delegation of voting rights and fair payment of provider compensation. Perhaps most importantly, the strength of securities laws and consistency with which they are applied will suffer as a result.

3. Expectation of Profit

Perhaps more than any other prong of *Howey*, the expectation of profit prong of the analysis presents a significant challenge to distinguishing between StaaS providers that do and do not justify SEC regulation. Differences between participant motivations and StaaS provider advertising will have major implications here. As the Supreme Court noted in *Howey*, the test for investment contracts is meant to encompass cases where the consumer is “attracted solely by the prospects of return.”¹⁹² The Second Circuit has likewise established that courts should “consider whether under all the circumstances, the scheme was being promoted primarily as an investment.”¹⁹³ Taken as a whole, contracts are securities where the “economic reality” shows a reasonable expectation of profit by speculative investors.¹⁹⁴

The primary argument that StaaS arrangements do not meet the expectation of profit requirement of the analysis is that participants enter into these contracts to

¹⁸⁷ *Id.* at 365.

¹⁸⁸ Angelovska-Wilson & Weiss, *supra* note 20, at 136.

¹⁸⁹ Though, scholars have argued that securities laws should govern artist-dealer interactions. *See generally* Bullock, *supra* note 186. *See also* Brian D. Tobin, *The Virtues of Common Law Theories and Disclosure Requirements in the Market for Fine Art*, 21 SETON HALL J. OF SPORTS AND ENT. L. 333, 350 (2011).

¹⁹⁰ *See e.g.*, Consignment of Fine Art, CAL. CIV. CODE ANN. § 1738 (1995).

¹⁹¹ This is evidenced by the conclusion that participants in these arrangements do not risk any loss of value to their tokens. Angelovska-Wilson & Weiss, *supra* note 20, at 135.

¹⁹² *W.J. Howey Co.*, 328 U.S. at 299-300.

¹⁹³ *United States v. Leonard*, 529 F.3d 83, 88 (2d Cir. 2008).

¹⁹⁴ SEC Framework, *supra* note 135.

secure the network and insure against inflation, rather than solely to earn a profit.¹⁹⁵ By not staking, the network participant risks their tokens losing value as other participants stake and receive newly minted tokens as rewards.¹⁹⁶ Additionally, PoS network participants—both those using and not using StaaS providers—are strongly motivated to maintain the network’s security.¹⁹⁷ A participant wanting to engage in a PoS network without the technological savvy needed for staking must therefore outsource to a third-party.¹⁹⁸ A StaaS provider may argue then that its service is merely incidental to the full enjoyment of the network.¹⁹⁹ Any appreciation in tokens results “solely from external market forces,” such as the network’s governance and inflation rate, and is generally not considered “profit” under *Howey*.²⁰⁰

There are, however, StaaS providers that utilize financial terms to suggest that network participants are entitled to profits from staking.²⁰¹ While other providers may refrain from using such language, financial terminology pervades discussions of PoS staking in the media. News articles suggest that PoS participants can profit from staking.²⁰² Human nature then suggests—and studies corroborate—that some participants will in fact engage StaaS services with the hope of achieving some gain.²⁰³ At present, it is unclear whether a non-advertising provider’s failure to correct this assumption should result in its classification as a securities offeror. Regardless, should the SEC challenge StaaS arrangements as unregistered

¹⁹⁵ Angelovska-Wilson & Weiss, *supra* note 20, at 136. Indeed, a report by ConsenSys found that some participants would be willing to validate altruistically, without incentives of expected returns. SCHMIEDT ET AL., *supra* note 103 at 33.

¹⁹⁶ Angelovska-Wilson & Weiss, *supra* note 20, at 136.

¹⁹⁷ *Id.*

¹⁹⁸ Stott, *supra* note 111 (“[P]roviding a non-technical option for token holders to participate in staking is a vital service for the health, security and reliability of these projects.”).

¹⁹⁹ See Jeffrey Allen Tew & David Freedman, *In Support of SEC v. W.J. Howey Co.: A Critical Analysis of the parameters of the Economic Relationship Between an Issuer of Securities and the Securities Purchaser*, 27 U. OF MIAMI L. R. 407, 423-24 (1974) (Arguing that the purchaser of a cemetery plot will necessarily purchase maintenance services to ensure that the plot stays in proper condition. In that respect, the purchaser “has entrusted [their] funds in order to procure the services, and not the profit that happens to accrue.”).

²⁰⁰ SEC Framework, *supra* note 135; *What is Staking?*, *supra* note 13.

²⁰¹ For example, Stake Capital, a StaaS provider, states on its website that the company “automatically returns the yield minus a small service-specific convenience fee.” *Staking with Stake Capital, How Does it Work Behind the Scenes*, STAKE CAPITAL, <https://www.stake.capital/> (last visited Dec. 2, 2020). Likewise, ViteX claims one of its features to be “daily dividends” paid to participants “from a shared dividend pool.” *ViteX Decentralized Exchange*, VITE, <https://vite.wiki/dex/#highlights> (last visited Dec. 8, 2020).

²⁰² See, e.g., Allison, *supra* note 99 (“Coinbase’s custody arm is trying to entice its institutional customers into the brave new world of staking crypto assets for profit.”); see also Liam Frost, *How Much You Might Earn Staking on Ethereum 2.0*, DECRYPT (May 8, 2020), <https://decrypt.co/28217/how-much-you-might-earn-staking-on-ethereum-2-0> (“[t]he Ethereum 2.0 network must reach a few important milestones before ETH holders could see profits from staking.”).

²⁰³ Schmiedt et al., *supra* note 103.

securities, expectations of profits will surely be a cumbersome and fact-intensive analysis.

4. Efforts of Others

Since the outcome of *Howey*, the SEC and subsequent case law have refined what constitutes “another’s efforts.” As recognized in the SEC Framework, those efforts must be “undeniably significant ones, those essential managerial efforts . . . as opposed to efforts that are more ministerial in nature.”²⁰⁴ Additionally, the Framework also defines an Active Participant (“AP”) as “a promoter, sponsor, or other third party . . . that affect the success of the enterprise.”²⁰⁵ Crucially, the presence of an AP makes it more likely that profit is being derived from that entity’s labor.²⁰⁶ Whether StaaS providers should qualify as APs depends on their role in maintaining the network and influencing rewards. On these questions, it would be inappropriate to find that all providers are APs in their given networks. Due to their ministerial functions and only marginal influence token value, most, if not all, arrangements do not satisfy the fourth prong of *Howey*.

It is necessary to first contrast ministerial with entrepreneurial efforts. The former refers to those that conform to a prescribed procedure and that may be performed without the use of judgment by the entity completing performance.²⁰⁷ Given this conceptualization, operation of a validating node may be considered ministerial—rather than entrepreneurial—in nature. This is because validating a node requires only a few activities that are limited in scope. These include (1) staking the requisite amount of that network’s tokens; (2) downloading validator software (or purchasing validator hardware) from public sources;²⁰⁸ (3) deploying patches to the network’s software, which are provided by the network’s developers; and (4) providing security against unauthorized access to the server that hosts the validator.²⁰⁹ The first three functions are non-discretionary in nature; any person or entity who meets the network’s token requirements can download the open-source

²⁰⁴ SEC Framework, *supra* note 135.

²⁰⁵ *Id.*

²⁰⁶ Concannon et al., *supra* note 131, at 65.

²⁰⁷ This may be implied by the SEC Framework, which describes entrepreneurial and managerial roles as those involving decision making or exercising judgement. SEC Framework, *supra* note 135.

²⁰⁸ For example, a person seeking to become a validator on Ethereum’s PoS network must download a local copy of the blockchain, known as a mainnet client. *Spin Up Your Own Ethereum Node*, ETHEREUM, <https://ethereum.org/en/developers/docs/nodes-and-clients/run-a-node/> (last updated Jan. 19, 2021). These may be found for download at one of Ethereum’s clients. *Backend API Libraries*, ETHEREUM, <https://ethereum.org/en/developers/docs/apis/backend/#available-libraries> (last updated Jan. 28, 2021).

²⁰⁹ As evidence of the network’s accessibility, many articles have also been published to explain the process of becoming a validator node to the general public. *See, e.g., Justin Leroux, Running Ethereum Full Nodes: A Guide for the Barely Motivated*, MEDIUM (Nov. 7, 2019), <https://medium.com/@JustinMLeroux/running-ethereum-full-nodes-a-guide-for-the-barely-motivated-a8a13e7a0d31>.

code to become a validator.²¹⁰ While the fourth provision relating to secure infrastructure does require judgment to ensure that assets are not hacked, it does not relate to the core functionality on which rewards are derived.²¹¹ As such, it is “unimportant to the source of investor expectations” of profits—that is, the value of tokens and rewards.²¹²

Although StaaS providers may be said to “play[] a leading role in the validation or confirmation of transactions,” this is discounted by several factors.²¹³ The first of these is that participants and networks are not forced to rely exclusively on any one provider. While in many *Howey* cases the option to use other services is hollow,²¹⁴ the availability of alternatives is meaningful here.²¹⁵ The same may potentially be said of participants’ abilities to ultimately perform their own validation duties. As a survey of PoS participants has shown, approximately only 20% of those interested in staking are “likely” or “very likely” to use a third-party provider.²¹⁶ Among these participants, it is unclear who is unable or simply unwilling to perform validation. Yet, the fact that nearly 43% of staking participants are “unlikely” or “very unlikely” to engage a StaaS service indicates that many token holders are at least capable of verifying transactions.²¹⁷ This greatly distinguishes the nature of StaaS arrangements from *Howey*. Whereas PoS participants may—and in many cases, do—perform their own validation, there was no indication in *Howey* and similar cases “that any of the purchasers were capable of realizing a profit . . . through their own skills.”²¹⁸

StaaS providers—albeit offering a convenience to participants—do not themselves determine token value and rewards.²¹⁹ These are ultimately controlled by network governance decisions, and often, the inflation rate.²²⁰ Though some profit-seeking participants likely rely on the efforts of their providers, this is solely to realize profits that can arise from the network’s changing inflation. The reliance

²¹⁰ See *Running an Ethereum Node*, ETHHUB, <https://docs.ethhub.io/using-ethereum/running-an-ethereum-node/> (last visited Jan. 28, 2021) (“Anyone is able to run an Ethereum node on their computer.”).

²¹¹ Angelovska-Wilson & Weiss, *supra* note 20, at 137.

²¹² SEC v. Life Partners, Inc., 87 F.3d 536, 546 (D.D.C. 1996) (finding that viatical settlements did not constitute securities because the primary factor determining profits was the length of the insured’s life rather than the efforts of the viatical settlement).

²¹³ SEC Framework, *supra* note 135.

²¹⁴ See *Cameron v. Outdoor Resorts of Am., Inc.* 608 F.2d 187, 193 (1979) (listing cases in which the ability of purchasers to engage another service company or perform self-service was immaterial).

²¹⁵ As noted, 1,667 total providers and 133 verified providers exist for participants to choose from. See *Providers*, *supra* note 24.

²¹⁶ SCHMIEDT ET AL., *supra* note 103, at 18.

²¹⁷ *Id.*

²¹⁸ Tew & Freedman, *supra* note 199, at 410.

²¹⁹ *What is Staking?*, *supra* note 13.

²²⁰ See 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 [fourth] element is the amount of control that the investors retain under their written agreement.”).

is not dissimilar from the case in *SEC v. Belmont Reid*, which concerned a promoter offering contracts for the purchase of gold coins to be minted from future mining.²²¹ The contract purchasers depended on the promoter's refinement of gold ore during a period when the value of gold was appreciating.²²² As the Ninth Circuit reiterated in *SEC v. R.G. Reynolds Enterprises*, this dependence was merely intermediary given that the purchaser's ability to realize a profit stemmed primarily from gold prices.²²³

Despite the likelihood that StaaS arrangements can avoid *Howey's* fourth prong, some may eventually qualify as APs in the future. That is, the accumulation of validating power among a select few providers could give them far more influence over networks.²²⁴ This could have negative effects depending on the provider's agenda. As the SEC Framework notes, "if the AP retains a stake or interest in the digital assets . . . purchasers would reasonably expect the AP to undertake efforts to promote its own interests."²²⁵ Of course, certain providers already have stakes in and participate in governance of the network.²²⁶ Should these features proliferate for an oligopoly of providers, the presence of an AP is certainly possible.

B. Policy Rationales: Achieving the Goals of the Securities Act

Irrespective of certain providers meeting the technical requirements of *Howey*, policy rationales complicate their regulation as outright investments. This is largely because StaaS arrangements are more inherently transparent and, in some ways, less risky than the purchase of traditional securities. The Court in *Tcherepnin v. Knight* was keen to note that, when a case called for defining a security, "form should be disregarded for substance and the emphasis should be on economic reality."²²⁷ This conception underscores *Howey's* "flexible" principle, a standard intended to further the Securities Act's protective goals and support the increasingly diverse U.S. economy.²²⁸ Here, this Note argues that classifying StaaS arrangements as securities would not further these objectives. Rather, current compliance requirements would be, at best, redundant and, at worst, costly to the point of impracticability. Regulators must therefore weigh the benefits of this classification with the drawbacks of forcing StaaS providers under an overly burdensome regime.

²²¹ *SEC v. Belmont Reid & Co.*, 794 F.2d 1388 (9th Cir. 1986).

²²² *Id.* at 1391.

²²³ *SEC v. R.G. Reynolds Enters.*, 952 F.2d 1125, 1134 (9th Cir. 1991).

²²⁴ Lee, *supra* note 91. Analysts have speculated whether this is already the case with networks such as Ethereum. Jordan Atkins, *Ethereum 2.0 is an Unexploded Regulatory Bomb*, COINGEEK (Dec. 14, 2020), <https://coingeek.com/ethereum-2-0-is-an-unexploded-regulatory-bomb/>.

²²⁵ SEC Framework, *supra* note 135.

²²⁶ Proof-of-Stake (PoS) Voting, *supra* note 88; Enecuum, *supra* note 52.

²²⁷ *Tcherepnin v. Knight*, 389 U.S. 332, 336 (1967).

²²⁸ *W.J. Howey Co.*, 328 U.S. at 299.

1. Balancing Mandatory Disclosures with Existing Transparency

Securities laws were enacted with the intent to decrease information asymmetry.²²⁹ There is some irony in the regulatory debate around blockchain given that its goal is to facilitate this very type of information-sharing.²³⁰ Its open source model allows participants to verify certain material data, including records surrounding transactions and other participants in the network.²³¹ For StaaS arrangements, this means that participants can view the providers' transactions, allowing them to compare validation success rates and rewards.²³² An environment of relative transparency and trustworthiness emerges as a result.²³³

Regulators should also conclude that certain SEC disclosures will contribute little to the relationship between providers and the network. Because network participants have no equity in StaaS companies, they arguably do not require the same information afforded to typical investors.²³⁴ Certain metrics, such as audited financial statements, officer salaries, and company contracts and lease agreements, would be superfluous to the PoS consumer.²³⁵ In fact, full financial disclosures may actually burden participants who would then have to distill relevant data. This is in addition to the costs that will likely be passed down to participants should providers have to comply with costly accounting procedures for public corporations.²³⁶

This is not to say that blockchain networks are free of information deficiencies. Inaccessible data might include a provider's security measures, significant events or uncertainties, and other critical business practices.²³⁷ As it stands, the existence of "staking marketplaces, network block explorers, community-run websites, and StaaS operator websites" currently supplements the body of intra-network

²²⁹ See Daniel M. Gallagher, *The Importance of the SEC Disclosure Regime*, Harvard Law School Forum on Corporate Governance and Financial Regulation (July 16, 2013), <https://corpgov.law.harvard.edu/2013/07/16/the-importance-of-the-sec-disclosure-regime/>.

²³⁰ Angelovska-Wilson & Weiss, *supra* note 20, at 140. William Hinman, Director of the SEC's Division of Corporation Finance, has similarly noted that digital transactions on "sufficiently decentralized network" do not elicit the policy concern of informational asymmetries between a typical investor and issuer. See Concannon et al., *supra* note 131, at 65.

²³¹ Weiss, *supra* note **Error! Bookmark not defined.**

²³² *Id.* Additionally, so-called "block explorers," or specialized web browsers, "curate information regarding transactions on the network so it's easy for anyone to have a view of exactly what is happening on a specific network." *Id.* they also provide participants a window into specific providers, including "missed blocks, up-time, and fee[s]." *Id.*

²³³ Angelovska-Wilson & Weiss, *supra* note 20, at 140.

²³⁴ *Id.*

²³⁵ *SEC Disclosure Laws and Regulations*, INC., <https://www.inc.com/encyclopedia/sec-disclosure-laws-and-regulations.html> (last updated Jan. 5, 2021).

²³⁶ Weiss, *supra* note **Error! Bookmark not defined.**

²³⁷ As discussed, a participant may be interested in whether their provider utilizes hot or cold wallets or contributes the stake in the arrangement. See Curran, *supra* note 107.

information.²³⁸ These marketplaces aim to aggregate data on SaaS providers' management teams as well as provider fees and other key performance metrics.²³⁹ While certainly useful for provider comparisons, these unregulated platforms are ripe for missing or incomplete information. Whether PoS networks can benefit from a mandatory disclosure regime is therefore still in question. Ideally, any mandatory disclosure regime would be tailored to the distinct needs and deficiencies of SaaS arrangements in light of their relative transparency.

2. Addressing Reliability (Rather than Speculative) Risks

As with transparency, the nature of SaaS arrangements makes their riskiness distinct from that present with typical securities. Unlike an investment contract, SaaS arrangements often do not pose a speculative risk to the network participant. The actual rate of return does not vary depending on the SaaS provider in question.²⁴⁰ Rather, any riskiness from these transactions results from the possibility of asset loss or theft—outcomes that largely depend on the SaaS provider's reliability and security measures.

As the Court briefly noted in *Marine Bank v. Weaver*, an “important fact” distinguishing investment contracts from non-securities is the guarantee of payment to the payer.²⁴¹ There, the Court addressed the question of whether the purchaser of a bank certificate of deposit—insured by the Federal Deposit Insurance Corporation (“FDIC”)—could be an investment contract.²⁴² Given that an FDIC-insured note would result in payment to the holder being “virtually guaranteed,” the Court held that securities laws would offer little byway of additional protection.²⁴³ Naturally, this conclusion was bolstered given that deposits in federally regulated banks do not pose issues of information asymmetry.²⁴⁴

Because participants will almost certainly recover their stakes and receive rewards, there is a similar absence of speculation—albeit not, as in *Marine Bank*, a result of government-backed assets.²⁴⁵ Particularly, in those networks that allow for SaaS providers to stake on behalf of their client (i.e., delegated), the participant

²³⁸ Weiss, *supra* note **Error! Bookmark not defined.** As an example, sites such as Staking Rewards aggregate and provide recommendations based on data available for various staking platforms. See *Earn Passive Income with Crypto*, STAKING REWARDS, <https://www.stakingrewards.com> (last visited Jan. 28, 2021).

²³⁹ *Id.*

²⁴⁰ That is, their rate of return is determined by the algorithm of the network, not the performance of the specific provider. Angelovska-Wilson & Weiss, *supra* note 20, at 138.

²⁴¹ *Marine Bank v. Weaver*, 455 U.S. 551, 558 (1982) (“The Court of Appeals failed to give appropriate weight to the important fact that the purchaser of a certificate of deposit is virtually guaranteed payment in full, whereas the holder of an ordinary long-term debt obligation assumes the risk of the borrower’s insolvency.”).

²⁴² *Id.* at 551.

²⁴³ *Id.*

²⁴⁴ *Id.* at 558. The transparency is due in part to federally mandated reporting requirements.

²⁴⁵ Angelovska-Wilson & Weiss, *supra* note 20, at 135.

does not face any personal threat of slashing.²⁴⁶ That some networks also allow the participant to self-custody their assets (i.e., delegated and bonded) also mitigates the risk that the StaaS provider will refuse to return—or, in cases of theft, lose—the participant’s tokens.²⁴⁷ Opponents of SEC regulation have therefore argued that the only risk to these participants would be their inability to collect rewards.²⁴⁸ The effect would be equivalent had the participant not engaged in staking at the outset, implying a net neutral outcome.²⁴⁹

For those networks where staked tokens belong to the participant (i.e., pure or bonded), there is a chance of the network slashing their assets.²⁵⁰ As noted, pure network participants could also face the possibility of StaaS providers accidentally losing or refusing to return their custodied tokens.²⁵¹ While these arrangements certainly pose some risk to the network participant, requiring full financial disclosures by StaaS providers will do little to mitigate them.²⁵² Opponents of SEC regulation would argue that these risks stem from the unreliability of the provider, rather than their internal business practices.²⁵³ So long as participants are given the opportunity to vet and compare their provider’s security measures, the risk of loss will be greatly reduced. Additional protections may be afforded by regulating recourse for participants who have suffered damage at the hands of an untrustworthy provider.

3. Ensuring the United States’ Leadership in Future Blockchain Regulation

Critically important to the U.S.’s digital economy will be its leadership in the multibillion dollar blockchain industry.²⁵⁴ This digital economy will likely suffer if regulation over StaaS providers results in prohibitively high costs of compliance for these nascent businesses.²⁵⁵ The result is a potential hindrance of innovation and competition in the U.S. as StaaS providers choose between a costly registration process or moving operations to a foreign jurisdiction.²⁵⁶ Furthermore, the negative effects of StaaS compliance for network participants could include the following: (1) increased service fees from U.S.-based providers; (2) greater delegation to

²⁴⁶ *Id.*

²⁴⁷ *Id.* at 136.

²⁴⁸ *Id.* at 135.

²⁴⁹ *Id.*

²⁵⁰ Angelovska-Wilson & Weiss, *supra* note 20, at 136.

²⁵¹ *Id.* at 135.

²⁵² Weiss, *supra* note **Error! Bookmark not defined.**

²⁵³ Angelovska-Wilson & Weiss, *supra* note 20, at 136.

²⁵⁴ Underscoring this concern, the EU is actively investigating policy tools that will incentivize StaaS provider to “choose the EU over competing jurisdictions.” Eur. Blockchain Ass’n, *supra* note 164, at 3.

²⁵⁵ Angelovska-Wilson & Weiss, *supra* note 20, at 140. (“treating all tokens as securities harms American innovation and leadership in the cryptocurrency space.”)

²⁵⁶ *Id.* Certain jurisdictions, including China, display “looser environmental and financial” regulations that are already better positioned to attract PoS network operations and StaaS providers. *See* Eur. Blockchain Ass’n, *supra* note 164, at 3.

foreign providers, who—though imposing lower fees—may not be held as accountable; and (3) decreased staking of digital assets altogether given the economic realities of the aforementioned issues.²⁵⁷ The last of these will almost certainly lead to weakened network security as fewer participants stake and, as a result, abstain from securing the network.²⁵⁸ Those who choose not to delegate and are unwilling to validate themselves will also suffer depreciation in the value of their assets due to network inflation.²⁵⁹ Given that the U.S. has allowed PoS networks and third-party staking, it follows that it should provide a regulatory infrastructure to facilitate participants' safeguarding their assets and prevent their erosion.²⁶⁰

C. Concluding Thoughts

Applying *Howey's* framework to StaaS arrangements results in regulation that is, at best, overinclusive and, at worse, ineffective. Where certain providers should perhaps qualify as securities offerors due to advertising and other practices, others surely do not. Misclassifying all StaaS arrangements as investment contracts will therefore result in unwarranted costs of SEC registration or penalties for offering unregistered securities.²⁶¹ Conversely, failing to regulate certain providers could lead to gaps in consumer protections.²⁶² Because this question will likely involve major undertakings by courts in terms of factual analysis, regulators and lawmakers should consider creating a framework to directly address this dilemma.

IV. RECOMMENDED REGULATORY AND LEGISLATIVE RESPONSES

Part II of this Note explained why current SEC legal and technical realities make it difficult to broadly regulate StaaS arrangements under this existing regime. This has widespread implications as more consumers turn to PoS networks and third-party arrangements to secure their assets and earn rewards. Because some of these contracts resemble investments and others non-securities, there is a clear need for tailored oversight that will capture both types of entities. This will ideally offer uniform information sharing and remedial protections. Here, I provide specific recommendations to lawmakers and regulators who hope to accomplish these goals with respect to this nuanced and innovative technology.

²⁵⁷ *Id.*

²⁵⁸ Aiya Li et al., *supra* note 16, at 2824.

²⁵⁹ Angelovska-Wilson & Weiss, *supra* note 20, at 140.

²⁶⁰ *Id.*

²⁶¹ Atkins, *supra* note 224.

²⁶² Weiss, *supra* note 75.

A. Recommendations for Lawmakers and Regulators

Though SaaS companies have existed in the United States for several years, no legislation has been written to specifically address their services.²⁶³ What language might later emerge to regulate these budding entities is not entirely clear. Economic—though not necessarily technical—similarities between SaaS companies and other small businesses may nonetheless prove helpful for legislators studying this regulatory vacuum. In light of these similarities, this Note proposes that Congress model SaaS-specific legislation after that aimed at small business growth. Doing so could promote the development of PoS networks while also improving relevant disclosures and thus consumer protections.

In drafting SaaS regulation, lawmakers may look to the “Jumpstart Our Business Startups” (“JOBS”) Act enacted by Congress in April 2012.²⁶⁴ Intended to support small business growth, the JOBS Act created a crowdfunding exemption to relax registration requirements previously imposed by the Securities Act.²⁶⁵ This allows for certain companies to raise money from pools of investors without having to register their offers as securities.²⁶⁶ Whereas stockholders must typically go through the SEC to purchase stakes, the new rules allow for consumers to make small—otherwise known as micro—investments in exchange for equity in companies.²⁶⁷ The result is that unsophisticated investors may contribute and profit from startup ventures.²⁶⁸

The newfound ability to raise funds is not without its limitations. Under the Jobs Act, investors cannot invest more than a specified amount in a twelve-month period.²⁶⁹ Additionally, companies must use a crowdfundering platform that acts as a third-party intermediary or “funding portal.”²⁷⁰ These platforms must comply with recordkeeping requirements in addition to affirmative obligations to reduce fraud.²⁷¹

The foregoing exemption and restrictions may offer similar benefits to SaaS providers and their clients. Congress should model a SaaS exemption after the

²⁶³ Greg Strong, *Blockchain 2021*, CHAMBERS AND PARTNERS (June 17, 2021), <https://practiceguides.chambers.com/practice-guides/comparison/640/6897/11260-11264-11274-11280-11287-11292-11295-11299-11302>.

²⁶⁴ Jumpstart Our Business Startups (JOBS) Act, Pub. L. No. 112-106, 126 Stat. 306 (2012); see also George C. Miller, *Crowdfunding Under the JOBS Act: What Investors Need to Know*, SHUSTAK REYNOLDS & PARTNERS (Nov. 2013), <https://www.shufirm.com/crowdfunding-under-the-jobs-act-what-investors-need-to-know>.

²⁶⁵ JOBS Act Pub. L. No. 112-106, 126 Stat. 306 (2012).

²⁶⁶ *Id.*

²⁶⁷ *Id.*

²⁶⁸ *Id.*

²⁶⁹ For example, “[i]nvestors with an annual income or net worth of less than \$100,000 may invest up to the greater of \$2,000 or 5% of their annual income or net worth. The limitation includes all crowdfunding activities, and is not calculated on a company-by-company basis.” *Id.*

²⁷⁰ *Id.*

²⁷¹ *Id.*

investment exemption provided in the JOBS Act. Under this proposal, StaaS providers would be exempt from classification as securities offerors pending certain limitations on the amount of assets they have staked and the number of networks that they service. Additionally, insisting that networks provide certain data and screen for malicious practices could fill the gaps in non-uniform reporting. While any legislation should not require the level of requirements imposed by the JOBS Act—due to the inherent information-sharing of the blockchain—it may nevertheless allow users easier opportunities for comparing and selecting providers.

In addition to the work by Congress, the potential role for the SEC with regard to StaaS providers is twofold: (1) issuing clarity on these arrangements in light of current regulation; and (2) eventually, promulgating rules should Congress adopt tailored legislation. With regard to the former, as suggested by POSA, the SEC could benefit consumers by providing practical guidance to StaaS providers and others in the industry.²⁷² By encouraging providers to refrain from using financial terminology, network participants would presumably be less likely to enter contracts solely on the premise of earning passive rewards. In addition, the SEC may issue guidance confirming that StaaS arrangements—absent major advertising violations—are presently consignment contracts to be regulated by laws governing contractual arrangements. It is possible here to equate StaaS providers to other consignment transactors such as art dealers and crowdfunding sites such as Kickfurther.²⁷³ Doing so may reduce the current uncertainty surrounding these contracts for both StaaS providers and participants.

V. CONCLUSION

The unique problems presented by StaaS arrangements are ill-suited for current SEC regulation. Likewise, their nuances may prove too complex to be effectively policed by other regulatory bodies. Competing for jurisdiction over StaaS entities are alternative—or perhaps, supplemental—agencies that may apply existing regulation. FinCEN and other watchdogs may have some role to play with regard to StaaS mediation; although, like the SEC, they are unlikely to provide adequate regulation with existing frameworks alone.²⁷⁴

It is clear that StaaS providers offer a crucial service that secures distributed ledgers and increases the financial inclusion of these networks. Still, StaaS arrangements are not without their unique regulatory challenges. For this reason, it is critical that regulators and policymakers take note of this increasingly popular technology. Tailoring a legislative and regulatory regime to these entities will likely afford better consumer protections and can mitigate fact-intensive litigation.

²⁷² POSA, *supra* note 113.

²⁷³ Note that, while sometimes used interchangeably, the term crowdfunding is distinct from crowd investing. The former allows for consumers to contribute to companies in exchange for something of value in return besides stocks. In that case, the payor does not receive any equity in the company. *Crowdfunding, Crowdinvesting, Kickstarter, and the JOBS Act*, HG.ORG, <https://www.hg.org/legal-articles/crowdfunding-crowdinvesting-kickstarter-and-the-jobs-act-31174> (last visited Mar. 1, 2021).

²⁷⁴ For a full discussion of StaaS issues relating to FinCEN see *id.* at 140-45.

Likewise, the United States can better position itself to emerge as a global leader in the blockchain arena.