Exhibit 231

[redacted]

[redacted] [redacted].com

December 28, 2017

Re: [redacted]
Draft Registration Statement on Form S-1
Submitted November 3, 2017
[redacted]

Mail Stop 3233

Ms. Sonia Gupta Barros
Assistant Director
Office of Real Estate and Commodities
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, DC 20549-3628

Dear Ms. Barros:

On behalf of our client, [redacted], manager of [redacted] (the "Fund"), we are responding to the November 29, 2017 comment letter of the staff of the Securities and Exchange Commission relating to the Fund's confidential draft Registration Statement on Form S-1 submitted on November 3, 2017. Prior to or contemporaneously with effectiveness of the Registration Statement, the Fund will be managed by [redacted], an affiliate of [redacted] these two affiliates are collectively referred to in this letter as the "Manager."

The Fund holds a market-weighted group of digital assets, initially BTC (or Bitcoin, the digital asset of the Bitcoin Network), ETH (or Ether, the digital asset of the Ethereum Network) and XRP (or Ripple, the digital asset of the Ripple Network). Among other portfolio construction criteria, the Fund will not invest in any digital asset that the Manager believes may be considered a "security" under Section 2(a)(1) of the Securities Act of 1933, as amended (the "Securities Act") or Section 3(a)(10) of the Securities Exchange Act of 1934, as amended (the "Exchange Act").

The comment letter presented two requests, which we have reproduced in italics below; our responses immediately follow.

* * *

I. ***Please provide a detailed analysis explaining why you believe Bitcoin, Ether, Ripple, and any other digital assets that are likely to be held by the Fund are not securities as defined in Section 2(a)(1) of the Securities Act. Your analysis should address substantive differences between each form of digital asset and how those differences affect your conclusions.***

Most digital assets currently in circulation today do not clearly fall into any of the more common types of instruments within the definition of "security" in the Securities Act or the Exchange Act, such as notes, stock or bonds.[1] However, as the Commission concluded in its July 2017 report[2] pursuant to Section 21(a) of the Exchange Act analyzing digital assets distributed by The DAO and in its December 2017 order[3] instituting cease-and-desist proceedings against Munchee, Inc., some distributions of digital assets may involve illegal securities offerings.

The Manager analyzes whether a digital asset is a security for federal securities law purposes first by determining whether the digital asset has any of the attributes of traditional equity or debt securities, such as ownership rights, rights to a share of profits or rights to periodic payments. If the digital asset does not exhibit these types of characteristics, then consistent with the DAO report and the Munchee order, the Manager analyzes the digital asset based upon the test for an "investment contract" developed in the Supreme Court's decision in *SEC v. W.J. Howey Co.*[4] and its progeny. The *Howey* test defines an "investment contract" as a contract or scheme that involves each of the following features:

- first, there must be an *investment of money*: the investor must give up some tangible and definable consideration;
- second, there must be a *common enterprise*: the investor's fortunes must be interwoven with those of other investors (horizontal commonality) and/or the efforts of the promoter of the investment (vertical commonality);
- third, the investors must have a *reasonable expectation of profits*: the investment must be purchased with the reasonable expectation that the value of the investment will increase or that the investor will receive earnings from the investment; and
- fourth, the investor's expectation of profits must be based predominantly upon *the entrepreneurial or managerial efforts of the promoter or other third parties.*[5]

As demonstrated by the Commission's *Howey* analysis in the Munchee order, "[d]etermining whether a transaction involves a security does not turn on labelling . . . but instead requires

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[1] Despite differences, the Supreme Court has indicated that the definitions of "security" under the Securities Act and the Exchange Act are treated the same. *SEC v. Edwards*, 540 U.S. 389, 393 (2004), citing *Reves v. Ernst & Young*, 494 U.S. 56, 61 n.1 (1990).

[2] Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO, Exchange Act Rel. No. 81207 (July 25, 2017) (the "DAO report").

[3] *In re Munchee, Inc.*, Securities Act Rel. No. 10445 (Dec. 11, 2017) (the "Munchee order").

[4] 328 U.S. 293, 301 (1946).

[5] *Id.* at 301 ("The test [for an investment contract] is whether the scheme involves an investment of money in a common enterprise with profits to come solely from the efforts of others."); *see also Int'l Bhd. of Teamsters, Chauffeurs, Warehousemen & Helpers of Am. v. Daniel*, 439 U.S. 551, 558-562 (1979); *Edwards*, *supra* note 1, 540 U.S. at 393.

an assessment of the economic realities underlying a transaction . . . . All of the relevant facts and circumstances are considered in making that determination."[6] Using the same analysis, the Manager has considered the features and terms of each of BTC, ETH and XRP, the facts and circumstances surrounding its original development and distribution, its current functionality and usage and the current role, if any, of its original promoters, and has concluded that none of BTC, ETH or XRP satisfies each prong of the *Howey* test and thus none should be considered an "investment contract" or "security" within the meaning of the Securities Act or the Exchange Act.

A. BTC

BTC is a synthetic currency that may be transmitted over a peer-to-peer payment system, known as the Bitcoin Network, that is open-source, permissionless and decentralized.[7] The currency itself is not backed by any corporation or government: owning BTC does not entitle the holder to any ownership, interest or right in any other commodity, good or service.

The core function of the Bitcoin Network is to permit the transfer of value represented by BTC from one participant to another. The network is peer-to-peer: no trusted third-party intermediary is required to execute transactions on the Bitcoin Network. Transactions are recorded on a cryptographically secure public ledger that is shared by all network participants. The Bitcoin Network was developed and continues to be improved by a community of unaffiliated volunteer developers. No permission is required to join the Bitcoin Network, and anyone can participate by downloading freely available software. In addition, no centralized authority controls or operates the Bitcoin Network. Its functionality is controlled by a protocol that has been programmed into different pieces of software.

A disparate group of network participants makes decisions affecting BTC through open consensus. Although developers or others can make changes to the software, these changes do not automatically become part of the Bitcoin Network. Participants on the network can ignore or reject updates. The lack of centralization is evidenced by "forks." A fork occurs when major changes are adopted by some network participants but not by others; in that case the system bifurcates into mutually incompatible networks.[8]

Because BTC does not have attributes of traditional equity or debt securities, such as ownership rights, rights to a share of profits or rights to periodic payments, the Manager analyzes whether BTC is a security in accordance with the *Howey* test.

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[6] Munchee order, *supra* note 3, at 9 (internal quotation marks and citations omitted).

[7] For further background on bitcoin, see Reuben Grinberg, *Bitcoin: An Innovative Alternative Digital Currency*, 4 HASTINGS SCI. & TECH. L.J. 160 (2011). *See also* JERRY BRITO & ANDREA CASTILLO, BITCOIN: A PRIMER FOR POLICYMAKERS (2d ed 2016).

[8] For example, debates over increasing the size of a bitcoin block (a proxy for the number of transactions that can be processed in a given amount of time) led to the fork of the Bitcoin Network into two different digital currencies – BTC and Bitcoin Cash. *See* Alyssa Hertig, *Bitcoin Cash: Why It's Forking the Blockchain and What That Means*, COINDESK (July 26, 2017), https://www.coindesk.com/coindesk-explainer-bitcoin-cash-forking-blockchain; *see also* Rodrigo Gutierrez, *Bitcoin Forks: BTC, B2X, SegWit2x BTG Gold, BTX, BitCore, BCH Cash, BCD Diamond and more*, BITCOINER TODAY (Dec. 4, 2017), https://bitcoiner.today/en/bitcoin-forks-btc-b2x-segwit2x-btg-gold-btx-bitcore-bch-cash-bcd-diamond-and-more/ (providing a list of bitcoin forks and their features).

1. Mining BTC does not involve an investment of money

To constitute an investment of money, "the person found to have been an investor [must have chosen] to give up a specific consideration in return for a separable financial interest with the characteristics of a security."[9] Bitcoin never had a sale of any kind to fund development of a venture. Instead, each BTC that exists or that will exist was or will be awarded automatically to a miner for contributing computational power to secure the network. Therefore, the initial recipient of a BTC does not "give up a specific consideration" in exchange for the BTC.

All BTC are in the first instance generated, rather than sold, by "miners" who perform computationally intense cryptographic functions to validate transactions. The validation algorithm automatically rewards miners with units of BTC for their contribution to the network. Units of BTC (currently 12.5) are awarded to a miner, on average, once every ten minutes with the number awarded halving every four years. Because of these two properties, enforced by the software shared by all BTC miners, there will never be more than 21 million BTC in existence.[10] The concept of "mining" BTC is intended to be analogous to mining a precious metal: miners of BTC, like miners of gold, expend resources to unearth a valuable commodity, which they may hold or sell to others.

To be sure, BTC miners, like miners of gold, exert effort, purchase durable goods (computers) and use electricity in order to run the software that generates BTC. However, these are primarily investments of labor and related resources, not money. As described by the Supreme Court, when "an employee is selling his labor primarily to obtain a livelihood, [he] is not making an investment."[11] In *Int'l Bhd. of Teamsters, Chauffeurs, Warehousemen & Helpers of Am. v. Daniel*,[12] the Court held employees who received pension plan participations in return for their labor did not invest money for purposes of the *Howey* test: "[o]nly in the most abstract sense may it be said that an employee 'exchanges' some portion of his labor in return for these possible benefits."[13] The Court also emphasized that in all cases where an arrangement was found to have been a security, "the purchaser gave up some *tangible* and *definable* consideration."[14]

In the case of BTC miners, it is difficult, if not impossible, to define the value of their contributions in labor and resources expended. The opportunity cost of each person's labor will be different and so will each miner's skill and efficiency in selecting equipment and programming or choosing their mining software.[15] A miner's labors could be fruitless or could succeed, based upon his or her own efforts. Overall, the facts and circumstances surrounding BTC miners' efforts to secure BTC are not the type of "tangible and definable consideration" courts have found to fulfill the "investment of money" element of the *Howey*

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[9] *Daniel*, *supra* note 5, 439 U.S. at 559.

[10] *Controlled Supply*, BITCOIN WIKI, https://en.bitcoin.it/wiki/Controlled_supply (last visited Dec. 7, 2017).

[11] *Daniel*, *supra* note 5, 439 U.S. at 560.

[12] *Id.* at 551.

[13] *Id.* at 560.

[14] *Id.* (emphasis added).

[15] We note that while mining is not definable consideration, a "mining contract" pursuant to which a person pays money for a share of potential mining profits may be. *See* Complaint at 10-11, *SEC v. Homero Joshua Garza, GAW Miners, LLC, and ZenMiner, LLC*, No. 3:15-cv-01760 (D. Conn. 2015) (complaint by SEC against individuals who sold shares in a virtual currency mining venture).

test.[16]

The miner's efforts are also not similar to the employee contributions in a voluntary and contributory stock ownership plan held to be a security in *Uselton v. Commercial Lovelace Motor Freight, Inc.*[17] There, the Tenth Circuit held there was an investment of money because the employees "contribute[] their legal right to a portion of their wages to [their employer] in return for the right to acquire [the employer's stock through the stock ownership plan] and to participate in [the employer's] profit-sharing plan."[18] The employees were thus giving up the "tangible and definable consideration" considered to fulfill this element; because, but for their contributions to the plan, the amount of the contributions was guaranteed to be paid to them at the end of every pay cycle. In contrast, BTC miners do not give up a "right" to any definable amount of income, nor can it be said that they are guaranteed the opportunity cost of their labor but for their time mining BTC.

The distinction becomes even clearer under the conceptualization used by the Ninth Circuit, which has held that "an investment of money" means "the investor must commit his assets to the enterprise in such a manner as to subject himself to financial loss."[19] In *Hector v. Wiens*, for example, the Ninth Circuit held a promissory note to a bank was an investment of money because "[w]hen the investment went sour, plaintiff was still liable on the promissory note and hence was subject to financial loss."[20] In the case of BTC, any financial risk is not based upon the success of the enterprise as a whole, but associated with the miner's independent success at generating BTC and subsequent decision to sell, hold or use the generated BTC.

Finally, even if secondary-market purchasers purchase BTC for money from sellers, the buying and selling of an item in the hope that the price of the item will increase does not alone make it a security under the *Howey* test.[21] As explained below, the purchase of BTC on the secondary markets fails the "common enterprise" and "efforts of others" elements of the *Howey* test.

2. An investment in BTC does not rely upon a common enterprise

The federal circuit courts have developed two different interpretations of the "common enterprise" factor of the *Howey* test, one requiring "horizontal commonality" and the other requiring "vertical commonality."[22] The decentralized nature of the Bitcoin Network precludes

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[16] *Daniel*, *supra* note 5, 439 U.S. at 560 (using "tangible and definable consideration" concept); *Uselton v. Commercial Lovelace Motor Freight, Inc.*, 940 F.2d 564, 575 (10th Cir. 1991) (same).

[17] *Commercial Lovelace*, *supra* note 16, 940 F.2d at 574-75 ("[T]he 'investment' may take the form of 'goods and services,' or some other 'exchange of value,'" but nonetheless must be "tangible and definable consideration." (citations omitted)).

[18] *See id.* at 575.

[19] *See Hector v. Wiens*, 533 F.2d 429, 432 (9th Cir. 1976); *see also Gary Plastic Packaging v. Merrill Lynch, Pierce*, 756 F.2d 230, 239 (2d Cir. 1985) (stating risk of loss requirement results from *Marine Bank v. Weaver*, 45 U.S. 551 (1982)).

[20] *Wiens*, *supra* note 19, 533 F.2d at 432-33.

[21] *See, e.g.*, SEC No-Action Letter, *The Ticket Reserve, Inc.*, 2003 WL 22195093, at *4 (Sept. 11, 2003) (stating that the staff would not recommend enforcement action to the Commission in connection with the operation of an electronic marketplace for resale of event tickets, requested on the basis that the tickets would not be "securities" even if the purchasers buy the tickets in the hope of the value increasing).

[22] *SEC v. SG Ltd.*, 265 F.3d 42, 49 (1st Cir. 2001) (citing cases).

either horizontal commonality among network participants or vertical commonality with promoters.

For horizontal commonality to exist, parties must have pooled their money to fund a venture in which they will share profits and losses on a *pro rata* basis.[23] Courts have held the pooling requirement to be met, for example, when a game operator pooled participants' funds into a single account[24] and when a company's "membership materials stated that [the company] would pool participant contributions to create highly-leveraged investment power."[25] For BTC, the essential element of pooling is missing: no funds have been aggregated either to create or to maintain BTC, nor are proceeds pooled together for the use of a central development company.

Although BTC owners share *pro rata* in price fluctuations, the decentralization of the Bitcoin Network means there is no "common enterprise," as that term is commonly understood, responsible for generating these profits or losses. The value of BTC is based upon supply and demand – what purchasers are willing to pay and sellers are willing to accept – which in turn may be affected by participants' expectations regarding the acceptance and use of BTC. The Bitcoin Network itself generates no revenue other than for miners, and miners' revenues are not commonly shared by all holders of BTC. Although a "community" of BTC users and developers has developed and their actions may affect the value of BTC – such as by creating new use cases and creating mainstream acceptance – these independent actions by disparate self-motivated and unaffiliated actors are not the sort of horizontal commonality that gives rise to a security under the *Howey* test.

The lack of a "common enterprise" is underscored by the *competition* among miners to procure BTC, which stands in contrast to investors *cooperating* in common enterprises. Each miner seeks the most efficient and effective way to mine BTC so that he or she will have a better chance at adding the next block to the blockchain and receiving the BTC reward. Miners may have a shared interest in seeing improvements to the system in general, but miners act independently and not in common – miners often disagree about whether to adopt proposals for network improvements. Because any fundamental change to the Bitcoin protocol takes effect only if network participants independently adopt it, participants who oppose a change can simply not do so – potentially "forking" the blockchain, i.e., leaving the network and forming a new network with the features that they prefer. As a result, the success of the network, and therefore BTC itself, is the result of a divergent group of independent actors, not a common enterprise.

Unlike "horizontal commonality," "vertical commonality" considers the link between the fortunes of investors and promoters.[26] As BTC is initially generated by miners, rather than issued and sold by promoters, and the decentralized nature of the Bitcoin Network means that there is no identifiable promoter or centralized manager, BTC does not exhibit any vertical commonality between investors and promoters. Miners who generate BTC have not purchased BTC from any

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[23] *See, e.g., U.S. SEC v. Infinity Grp. Co.*, 212 F.3d 180, 188 (3d Cir. 2000).

[24] *SG Ltd.*, *supra* note 22, 265 F.3d at 50.

[25] *Infinity Grp. Co.*, *supra* note 23, 212 F.3d at 188.

[26] Vertical commonality is defined by different circuits as either "strict vertical commonality" or "broad vertical commonality.' Strict vertical commonality "requires that the investors' fortunes be interwoven with and dependent upon the efforts and success of those seeking the investment or of third parties," while broad vertical commonality requires only that "the well-being of all investors be dependent upon the promoter's expertise." *SG Ltd.*, *supra* note 22, 265 F.3d at 49-50 (internal citations and quotation marks omitted).

promoter and therefore have no one with whom to have vertical commonality. Those that purchase BTC directly or indirectly from a miner in the secondary market may rely upon the existence of miners, as a group, to ensure that the Bitcoin Network continues to function. But, given its decentralized nature, the value of BTC does not depend upon the existence or actions of any particular miner, nor are a BTC holder's fortunes in any sense linked to the particular miner who mined the BTC. Purchasers also do not have vertical commonality with BTC's initial or continuing developers. As further discussed regarding the "efforts of others" below, BTC purchasers may continue to use the network as it existed at the time they purchased BTC and are neither promised nor can reasonably rely upon any future development efforts.[27]

3. BTC is designed to have consumptive uses, not to generate profits

To constitute the "expectation of profits" under *Howey*, profits must come in the form of "capital appreciation resulting from the development of the initial investment . . . or a participation in earnings resulting from the use of investors' funds."[28] Further, the fact that a purchaser hopes to profit does not mean that the instrument itself involves an enterprise for which purchasers are led to expect profits: "[c]entral to this test is the promotional emphasis of the developer" and whether the developer emphasized the investment or consumptive aspects of the purchase.[29] BTC is designed to have consumptive uses, even if many purchasers have profit-based motives.

BTC's core functionality is its use as a virtual currency to enable internet commerce, or as an intermediary currency to facilitate less expensive and faster cross-border remittances.[30] Federal courts have held BTC qualifies as "money" for some purposes, on the basis that BTC "acts as a denominator of value, and is used to conduct financial transactions."[31] As such, BTC stands in sharp contrast with *Howey*'s description of the orange-grove purchasers, who the Court held were motivated solely by profit. While no orange-grove purchasers had a "desire to occupy the land or to develop it themselves [and were] attracted solely by the prospects of a return on their investment,"[32] purchasers of BTC can, and many in fact do, employ it as a currency.[33]

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[27] The lack of vertical commonality is evidenced by recent events involving litecoin, another digital asset based upon and with similar in functionality to BTC. The founding developer of litecoin is reported to have recently sold all of the litecoin he owned. Rather than causing litecoin to decrease in value – which one would expect if holders of litecoin were in vertical commonality with the founder as a promoter – there does not appear to have been a material effect on litecoin's value. Oscar Williams-Grut, *The creator of $17 billion cryptocurrency litecoin has sold his entire stake*, BUSINESS INSIDER (Dec. 20, 2017), http://www.businessinsider.com/litecoin-creator-charlie-lee-sells-entire-ltc-holding-2017-12.

[28] *United Hous. Found., Inc. v. Forman*, 421 U.S. 837, 852 (1975) (citations omitted).

[29] *Aldrich v. McCulloch Properties, Inc.*, 627 F.2d 1036, 1040 (10th Cir. 1980); *see also The Ticket Reserve, Inc.*, *supra* note 21 (Division of Corporation Finance would not recommend enforcement action despite the existence of some profit motive where there was also a consumptive use).

[30] *See SEC v. Shavers*, No. 4:13-CV-416, 2013 WL 4028182, at *1 (E.D. Tex. Aug. 6, 2013) ("Bitcoin was designed to reduce transaction costs, and allows users to work together to validate transactions by creating a public record of the chain of custody of each Bitcoin").

[31] *United States v. Faiella*, 39 F. Supp. 3d 544, 545 (S.D.N.Y. 2014); *see also Shavers*, *supra* note 30, 2013 WL 4028182, at *2.

[32] *W.J. Howey Co.*, *supra* note 4, at 300.

[33] *See, e.g.*, *Venezuelans Seeing Bitcoin Boom as Survival, Not Speculation*, N.Y. TIMES, Dec. 13, 2017, available at https://www.nytimes.com/aponline/2017/12/13/world/americas/ap-lt-venezuela-bitcoin-boom.html

Although some have suggested high fees hinder BTC's use as money, and many purchase it as a form of digital gold, BTC was nevertheless designed as money, and still can and does function as such. A profit motive among some purchasers is not sufficient for there to be a reasonable expectation of profit for purposes of the *Howey* test.[34] The *New York Times* recently reported that a large swath of Venezuelans have adopted use of BTC as a currency for purchases ranging from medical needs to groceries: "Venezuelans with few or no other means of converting their bolivars into another currency believe [BTC] is a safer bet than the Venezuelan bills that steadily depreciate from one day to the next."[35] Though others may speculate on its increase in value, BTC's prospect as an investment is "merely incidental" to BTC's design as a virtual currency.[36]

From its beginning, BTC was intended to be a synthetic currency that is unbacked: owning BTC does not entitle the holder to any ownership, interest or right in any enterprise, other commodity, good or service. No corporation involved in developing BTC promised to accept it for payment, to continue its development or to stand behind it. The core function of the Bitcoin Network is to permit the transfer of value represented by BTC from one participant to another. The network is peer-to-peer: no trusted third-party intermediary is required to execute transactions on the Bitcoin Network. Transactions are recorded on a cryptographically secure public ledger that is shared by all network participants.[37] Early participants were hobbyists and supporters of alternatives to government-issued currencies. These participants treated BTC as a new type of currency, rather than as an investment.[38]

Although BTC is not designed to be an investment, like owners of government-issued

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(describing Venezuelans' increased reliance upon BTC as a currency in place of the bolivar for many ordinary real-life transactions).

[34] *See Forman*, *supra* note 28, 421 U.S. at 857-58 (holding purchaser's incentive to obtain a good price is not sufficient for this element as "that type of economic interest characterizes every form of commercial dealing. What distinguishes a security transaction – and what is absent here – is an investment where one parts with his money in the hope of receiving profits from the efforts of others, and not where he purchases a commodity for personal consumption or living quarters for personal use.")

[35] *Venezuelans Seeing Bitcoin Boom as Survival, Not Speculation*, N.Y. TIMES, *supra* note 33.

[36] *SG Ltd.*, *supra* note 22, 265 F.3d at 54 (stating the determinative question is whether the consumptive use is merely incidental to the investment transaction or whether the investing aspect is merely incidental to the consumptive use); *see also Forman*, *supra* note 28, 421 U.S. at 853 & n.18 (explaining there is a critical distinction between (i) leaseholds sold with the promise of exploratory oil drillings held to be a security in *SEC v. C. M. Joiner Leasing Corp.*, 320 U.S. 344, 348 (1943), and (ii) simple leaseholds, "because the exploratory drillings gave the investments 'most of their value and all of their lure.'").

[37] *See* Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, BITCOIN.ORG (Oct. 31, 2008), at 8, https://bitcoin.org/bitcoin.pdf ("We have proposed a system for electronic transactions without relying on trust. We started with the usual framework of coins made from digital signatures, which provides strong control of ownership, but is incomplete without a way to prevent double-spending. To solve this, we proposed a peer-to-peer network using proof-of-work to record a public history of transactions that quickly becomes computationally impractical for an attacker to change if honest nodes control a majority of CPU power.")

[38] For example, in one famous transaction in 2010, a developer purchased two pizzas in exchange for 10 thousand BTC – a quantity that would be worth over $100 million. *See* Laszlo, *Pizza for Bitcoins?*, BITCOINTALK.ORG (May 18, 2010), https://bitcointalk.org/index.php?topic=137.0 (original forum post proposing the transaction); Bitcoin Block #57043, BLOCKCHAIN.INFO, https://blockchain.info/block/00000000152340ca42227603908689183edc47355204e7aca59383b0aaac1fd8 (last accessed Dec. 19, 2017) (block reflecting the validated transaction); Rob Price, *Someone in 2010 bought 2 pizzas with 10,000 bitcoins-which today would be worth $100 million*, BUS. INSIDER (Nov. 28, 2017), http://www.businessinsider.com/bitcoin-pizza-10000-100-million-2017-11 (describing the transaction).

currencies, precious metals and energy commodities, owners of BTC may decide to hold it as an investment separate from BTC's native and inherent uses. The existence of speculators in BTC, much as the existence of speculators in these other valuable assets, does not convert it into a security.

4. BTC owners do not rely upon the entrepreneurial and managerial efforts of others

For an instrument to be an investment contract under *Howey*, "the efforts made by those other than the investor [must be] the undeniably significant ones, those essential managerial efforts which affect the failure or success of the enterprise."[39] Any profit received by miners of BTC depends first and foremost on their own entrepreneurial effort and skill. For owners of BTC who buy it on secondary markets with the hope of profit, their abstract and attenuated reliance upon a large, amorphous group of individuals, companies and events that indirectly affect BTC's value is not the type of reliance on others' "essential managerial efforts" that fulfill this factor.[40]

Where purchasers of a commodity have been found to rely upon the "essential managerial efforts of others" for *Howey* purposes, courts have required that there be *particular* others upon whom the purchasers relied. Any other approach would be counterintuitive because without an identifiable person or group, there is no one upon whom an investor can rely, and no one upon whom to impose responsibility to the investor. For example, where a group of investors purchased cattle in order to obtain a tax deduction, the Fifth Circuit held the arrangement to be an investment contract because the investors "entered into the agreements with the expectation of profits to come solely from the efforts" of the consulting company promoting the arrangement.[41] Similarly, when the Seventh Circuit found that investors in whiskey interests had purchased securities, it noted that the investors had "entrusted the promoters with both the work and the expertise to make the investment pay off."[42] The court emphasized the investors were not simply buying commodities, but were buying additional "services *absolutely necessary* to the turning of the promised profit."[43] In contrast, the federal courts have held this *Howey* element was not fulfilled where investors relied instead upon market movements to realize their investment. For example, in *SEC v. Belmont Reid & Co.*, a gold mining company sold gold coins to investors on a pre-payment basis. The Ninth Circuit held the buyers were not relying upon the efforts of the seller but instead "speculating in the world gold market."[44] The court acknowledged the buyers relied upon the seller's ability to mine gold successfully in order to deliver the gold coins, but such reliance was no different from "any sale-of-goods contract in

[39] *SEC v. Glenn W. Turner Enterprises, Inc.*, 474 F.2d 476, 482 (9th Cir. 1973).

[40] *Compare id.* at 482 (holding purchaser's efforts to recruit other people into the investment scheme did not mean "the essential managerial efforts which affect the failure or success of the enterprise" were not done by the seller because the efforts of the seller were nonetheless the "*sine qua non* of the scheme") *with SEC v. Belmont Reid & Co., Inc.*, 794 F.2d 1388, 1391 (9th Cir. 1986) (holding contract to sell gold for future delivery was not a security because the buyers' profits depended upon the world gold market and not any particular skill of the seller) *and Noa v. Key Futures, Inc.*, 638 F.2d 77, 79 (9th Cir. 1980) (holding sale of silver bars was not an investment contract because "[o]nce the purchase of silver bars was made, the profits to the investor depended upon the fluctuations of the silver market, not the managerial efforts of [the sellers].").

[41] *Long v. Shultz Cattle Co.*, 881 F.2d 129, 134 (5th Cir. 1989).

[42] *Glen-Arden Commodities, Inc. v. Costantino*, 403 F.2d 1027, 1035 (2d Cir. 1974) (sale of whiskey warehouse receipts was a security because buyers relied upon the seller's skill in selecting the whiskey in order to realize any profit and upon the seller's promise to buy back any unsold whiskey).

[43] *Id.* at 1035 (emphasis added).

[44] *Belmont Reid & Co., Inc.*, *supra* note 40, 794 F.2d at 1391.

which the buyer pays for advance delivery and the ability of the seller to perform is dependent, in part, on both his managerial skill and some good fortune."[45]

Bitcoin owners cannot be said to be purchasing managerial services "absolutely necessary" to their investment when they purchase BTC. Instead, BTC owners, much like the gold coin buyers in *Belmont Reid*, are buying an instrument whose price depends upon the world BTC market. BTC owners may rely in an abstract sense upon the existence of miners, in order to validate transactions on the Bitcoin Network, or the developers of the protocol, but "[t]he difficulty with this analysis is its ready applicability to any sale-of-goods contract";[46] the purchasers of any good, especially technologically advanced goods, depend in the abstract upon the continued existence of certain companies, infrastructure and systems. Further, the miners and developers of BTC are not identifiable third parties, but rather categories of participants acting in their own self-interest and independently from one another and each BTC holder. BTC users do not rely upon any particular miner; the efforts of miners are undertaken for their own self-interest in earning rewards, not to increase the value of BTC. Because the Bitcoin protocol adjusts the difficulty of the mining problem automatically based on the number of participating miners and their collective computing power, the greater efforts of miners beyond a minimum threshold do not directly affect the success of the network or BTC's value. In other words, there must be miners, but their entrepreneurial and managerial decisions regarding whether to mine or to increase the extent of their mining are undertaken for their own benefit, and should not affect the value of BTC.

Additionally, owners of BTC do not rely upon any organized group of developers to act as centralized managers whose efforts are expected to affect BTC's value. The Bitcoin Network was developed and continues to be improved by a community of unaffiliated developers who coordinate using the open-source collaboration tool GitHub.[47] The code is released under a license that permits anyone to copy, modify, merge, publish, distribute, sublicense and/or sell copies of the software.[48] No permission is required to join the Bitcoin Network, and anyone can participate by downloading freely available software.[49] In addition, no centralized authority controls or operates the Bitcoin Network. Its functionality is controlled by a protocol, which has been programmed into different pieces of software. A disparate group of network participants makes decisions affecting BTC through open consensus. The most commonly used implementation of BTC software, and the disparate group of developers that maintains it, is known as Bitcoin Core.[50] There are other implementations as well, all of which follow the Bitcoin

[45] *Id.*

[46] *Id.*

[47] In November 2008, a white paper describing the Bitcoin Network was released under the pseudonym "Satoshi Nakamoto," simultaneously with the initial source code that implemented the ideas in the white paper. *See* Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System, supra* note 37.

[48] The most commonly used Bitcoin-Network client is published under the MIT license, see *bitcoin/COPYING*, GITHUB.COM, https://github.com/bitcoin/bitcoin/blob/master/COPYING (last accessed Dec. 20, 2017).

[49] There is a variety of free Bitcoin Network clients available, see *Choose your Bitcoin Wallet*, BITCOIN.ORG, https://bitcoin.org/en/choose-your-wallet (last accessed Dec. 20, 2017).

[50] Bitcoin Core is an open source project to which anyone can contribute, see *How to contribute code to Bitcoin Core*, BITCOIN CORE, https://bitcoincore.org/en/faq/contributing-code/ (last accessed Dec. 20, 2017) (describing Bitcoin Core as using an "open contributor model where anyone is welcome to contribute towards development," and the governance structure as a "meritocracy where longer term contributors gain more trust from the developer community").

protocol. Although developers or others can make changes to the software these changes do not automatically become part of the Bitcoin Network. Participants on the network can ignore or reject updates. The lack of centralization is evidenced by "forks." A fork occurs when major changes are adopted by some network participants but not by others; in that case the system bifurcates into mutually incompatible networks.

Thus, the developers are a loosely organized community of otherwise-unaffiliated persons who continue to maintain and improve the software. The identity of these developers is constantly in flux as individual developers drop in and out of the project. Any entrepreneurial or managerial discretion possessed by developers is significantly constrained and therefore could not be relied upon by BTC owners, as the developers' changes must be generally adopted by network participants to take effect and the developers' suggestions can and have been rejected in the past. Developers can do no more than suggest a change to the software, while network participants independently choose whether to adopt any suggested improvements. Further, holders of BTC cannot reasonably rely upon the continued efforts of developers, as they are under no commitment to engage in any development efforts.

B. ETH

ETH is in many ways similar to BTC. The backbone of the Ethereum Network is a digital-asset transfer system that is peer-to-peer, open source, permissionless and decentralized.[51] The transfer system uses a secure public ledger to record the transfer of a native coin called Ether or ETH, which can be mined using a process similar to BTC mining.[52] Because ETH was initially sold through a pre-sale in 2014 but currently can only be mined, this section first analyzes ETH under the *Howey* test as it was at the time of the pre-sale and then as it is in its current state. We conclude that ETH is not a security under either scenario.

ETH was originally proposed in a "white paper" published by Vitalik Buterin in December 2013, describing the feasibility of Ethereum technology.[53] In response to the white paper, a group of interested developers gathered and made a plan for creating the Ethereum Network. In April 2014, Gavin Wood published detailed technical specifications for the "Ethereum Virtual Machine."[54] Anyone who followed the specifications was able to develop a compatible Ethereum client, leading eventually to seven different client implementations by different groups of developers.[55] In June 2014 the Ethereum Foundation was formed as a Swiss non-profit foundation to manage the ETH pre-sale.[56] The terms of the pre-sale agreement provided that

[51] *What is Ethereum?*, ETHEREUM HOMESTEAD (2016), http://ethdocs.org/en/latest/introduction/what-is-ethereum.html.

[52] *Mining*, ETHEREUM HOMESTEAD (2016), http://ethdocs.org/en/latest/mining.html.

[53] Vitalik Buterin, *A Next Generation Smart Contract and Decentralized Application Platform* (2013), https://github.com/snordenstorm/wiki/wiki/Old-Ethereum-Whitepaper.

[54] Smart contracts, one of the key functionalities of ETH, are compiled into code that is understandable by the Ethereum Virtual Machine, as described below. *See* Gavin Wood, *Ethereum: A Secure Decentralised Generalised Transaction Ledger* (Jan. 2014), http://gavwood.com/Paper.pdf.

[55] *See Choosing a Client: Why Are There Multiple Ethereum Clients?*, ETHEREUM HOMESTEAD (2016), http://www.ethdocs.org/en/latest/ethereum-clients/choosing-a-client.html#why-are-there-multiple-ethereum-clients.

[56] It appears that the presale may have been conducted through a separate legal entity that contributed funds to the Ethereum Foundation and then dissolved upon the conclusion of the pre-sale; for simplicity "Ethereum Foundation" is used to refer to both entities, *see History of Ethereum*, ETHEREUM HOMESTEAD (2016),

anyone who delivered BTC during a particular window between July and September 2014 would receive a given quantity of ETH when the network officially launched.[57] Approximately 60 million ETH were exchanged for approximately 30,000 BTC.[58] An additional 12 million ETH were retained by the Foundation.[59] The Ethereum Network launched on June 30, 2015 and ETH was released to pre-sale purchasers.[60] After this initial sale of ETH, no market participant, including the Ethereum Foundation, has the ability to create new ETH other than through mining.[61]

The ETH distributed in the pre-sale is not a security. Most importantly, this ETH fails to meet the third factor of the *Howey* test: expectation of profits. Early purchasers of ETH likely planned to use ETH in the network once it was developed – Buterin's white paper, Wood's technical specifications and the terms of the pre-sale focused on the Ethereum technology and use of ETH within the proposed network.[62] To the Manager's knowledge, none suggested that ETH presented an investment opportunity.[63] As described in further detail below, ETH has real, current uses to support "smart contracts" on the Ethereum Network, which contracts are already in use by companies worldwide. The Supreme Court has emphasized: "when a purchaser is motivated by a desire to use or consume the item purchased – to occupy the land or to develop it

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http://ethdocs.org/en/latest/introduction/history-of-ethereum.html; *Terms and Conditions of the Ethereum Genesis Sale*, ETHEREUM.ORG (July 21, 2014) at 3, https://github.com/ethereum/www/blob/master-postsale/src/extras/pdfs/TermsAndConditionsOfTheEthereumGenesisSale.pdf ("EthSuisse will be liquidated shortly after creation of genesis block, and EthSuisse anticipates (but does not guarantee) that after it is dissolved the Ethereum Platform will continue to be developed by persons and entities who support Ethereum, including both volunteers and developers who are paid by nonprofit entities interest in supporting the Ethereum Platform").

[57] *See Terms and Conditions of the Ethereum Genesis Sale*, *supra* note 56.

[58] *See History of Ethereum, supra* note 56.

[59] *See* Vitalik Buterin, *Launching the Ether Sale*, ETHEREUM BLOG (July 22, 2014), https://blog.ethereum.org/2014/07/22/launching-the-ether-sale ("There are **two endowment pools, each 0.099x** the initial quantity of ETH sold, that will be allocated in the first case to early contributors to the project and in the second case to a long-term endowment to our non-profit foundation"); *see also Terms and Conditions of the Ethereum Genesis Sale*, *supra* note 56, at 8 (describing the intended use of the retained ETH).

[60] *See History of Ethereum, supra* note 56.

[61] At the time of the pre-sale, it was expected that within three years approximately 40% of all ETH in circulation would have been generated through mining, and within ten years approximately 70% of all ETH in circulation would have been generated through mining. *See Terms and Conditions of the Ethereum Genesis Sale*, *supra* note 56, at 9.

[62] *See Terms and Conditions of the Ethereum Genesis Sale, supra* note 56, at 4 ("Parties may be interested in purchasing ETH (the cryptofuel) in the Genesis sale to build and power business applications, to pay for coming distributed application services on the Ethereum Platform, to pay for other tokens that may be created on the Ethereum Platform for various applications, or to support the development of the Ethereum Platform. Individuals, businesses, and other organizations should carefully weigh the risks, costs, and benefits of acquiring the cryptofuel early in the Genesis Sale versus waiting to purchase ETH on open, third-party exchanges once the system is operational and when they or their businesses actually require the cryptofuel to operate"). Similarly, the presale was not targeted at speculative purchasers but cryptography experts and developers. *See id.* (warning that "[p]urchases of ETH, the Ethereum Platform's cryptofuel, should be undertaken only by individuals, entities, or companies that have significant experience with, and understanding of, the usage and intricacies of cryptographic tokens, like bitcoin (BTC), and blockchain-based software systems").

[63] Indeed, rather than touted, the investment opportunity of purchasing ETH was expressly disclaimed. *See Launching the Ether Sale*, *supra* note 59 ("[ETH] is a product, NOT a security or investment offering. Ether is simply a token useful for paying transaction fees or building or purchasing decentralized application services on the Ethereum platform; it does not give you voting rights over anything, and we make no guarantees of its future value").

themselves, as the *Howey* Court put it – the securities laws do not apply."[64]

The consumptive nature of ETH is underscored by the characteristics of the pre-sale agreement.[65] All that pre-sale purchasers received in return for their purchase price was the promise to deliver ETH in the future – ETH itself did not represent that promise. This contrasts with the tokens at issue in the Munchee order. The Munchee tokens were issued upon their sale and were sold to support the development of Munchee's business projects with their value; the Munchee tokens had no immediate actual use for the tokens' owners other than as a means to speculate on the success of the Munchee enterprise.[66] ETH, in contrast, was only issued once the Ethereum Network was functional and immediately usable at the time it was issued, with its value not tied to any *future* efforts to develop the Ethereum Network.[67]

We note that the pre-sale transaction itself was arguably a "scheme" involving an investment contract within the *Howey* formulation. If so, however, the scheme consisted of the undertaking to deliver ETH, not the ETH itself. Analogized to the *Howey* fact pattern, if a contract was sold to investors promising to deliver the oranges grown on a particular tract of land, that contract may be a security, but it does not follow that the oranges themselves are securities. Thus, the pre-sale transaction could involve an investment contract under the *Howey* test without implying that ETH itself is a security.

In addition to the Manager's conclusion that the original ETH issued in connection with the pre-sale did not represent a security, the facts and circumstances surrounding ETH today reinforce the Manager's conclusion that ETH is not currently a security either. Because ETH does not have attributes of traditional equity or debt securities, such as ownership rights, rights to a share of profits or rights to periodic payments, the Manager analyzes whether ETH is a security in accordance with the *Howey* test.

1. Mining ETH does not involve an investment of money

With the exception of the ETH sold through the pre-sale agreement, all ETH must be generated by mining. Therefore, as with BTC, the effort by a miner to obtain ETH is not a "tangible and definable consideration" and does not subject the miner to the risk of financial loss.

2. An investment in ETH does not rely upon a common enterprise

The features of ETH do not fulfill horizontal commonality, strict vertical commonality or broad vertical commonality. The Ethereum Network is sufficiently decentralized to prevent holders of ETH from participating in a common enterprise as that term is commonly understood.

As noted above, "horizontal commonality is characterized by a pooling of investors' contributions

[64] *Forman*, *supra* note 28, 421 U.S. at 852-53 (internal quotations marks and citations omitted).

[65] *See Terms and Conditions of the Ethereum Genesis Sale*, *supra* note 56, at 9 (stating that the premined ether will be created "at the instant the system becomes operational").

[66] Munchee order, *supra* note 3, at 3.

[67] *See Launching the Ether Sale*, *supra* note 59 ("[ETH] will NOT be usable or transferable until the launch of the genesis block. That is to say, when you buy [ETH] and download your wallet, you will not be able to do anything with it until the genesis block launches").

and distribution of profits and losses on a pro-rata basis among investors."[68] Similar to BTC, at present ETH is issued only to miners in the system and substantial quantities of new ETH are mined every year.[69] Except for the pre-sale analyzed above, there is no pooling of assets – a required factor of horizontal commonality. Because a "pooling of investors' interests is . . . essential to a finding of common enterprise," ETH in its current form does not involve horizontal commonality.[70]

The initial pooling of resources in the 2014 pre-sale of ETH does not affect the current analysis. First, current miners and secondary-market purchasers are not pooling resources or computational power and therefore these investors cannot be said to exhibit horizontal commonality. In addition, the initial pooling is far removed from the factors that today would lead to profits or losses from holding ETH. Instead, today the value of ETH depends upon the continued adoption of smart contract technology. In contrast, in the enterprise formed by the sale of DAO tokens, "holders of DAO Tokens stood to share in the anticipated earnings from the . . . projects as a return on their investment in DAO Tokens."[71]

Purchasing ETH also does not involve vertical commonality. As with BTC, there is no current promoter with whom owners of ETH are in vertical commonality. Instead, ETH is now generated by an unaffiliated group of miners. Given its decentralization, neither the Ethereum Foundation nor anyone else has effective control over the continued development of the protocol. Further, there is no developer or group of developers whose absence would prevent the continued functionality of the Ethereum Network.

3. ETH is designed to have consumptive uses, not to generate profits

As noted with respect to BTC above, essential to the analysis of whether purchasers of an instrument have an "expectation of profits" for *Howey* purposes is whether "the investing public is attracted by representations of investment income."[72] The subjective hopes of profits by a speculator are not relevant where an instrument is not sold on the basis that purchasers can expect a profit. Fundamentally, ETH enables holders to utilize the smart contract functionality of the Ethereum Network. This capability, which is exclusive to ETH, is precisely the type of consumption that renders the securities laws inapplicable.[73] Even taking into account "the economic realities underlying a transaction,"[74] as the SEC recently emphasized in its Munchee order, ETH nonetheless stands out for its practical uses.

[68] *Infinity Grp. Co.*, *supra* note 23, 212 F.3d at 187-88 (internal quotations marks and citations omitted).

[69] Joseph Lubin, *The Issuance Model in Ethereum*, ETHEREUM BLOG (April 10, 2014), https://blog.ethereum.org/2014/04/10/the-issuance-model-in-ethereum/ ("Every year, in perpetuity, 18,000,000 ETH will be issued though the mining process").

[70] *See Curran v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, 622 F.2d 216, 221-22 (6th Cir. 1980) (holding horizontal commonality was not present where purchasers bought discretionary commodity trading accounts from Merrill Lynch because the accounts were "essentially a one-on-one arrangement between the customer and the broker"); *see also Hirk v. Agri-Research Council, Inc.*, 561 F.2d 96, 101 (7th Cir. 1977).

[71] DAO report at 1.

[72] *See Edwards*, *supra* note 1, 540 U.S. at 394.

[73] *Forman*, *supra* note 28, 421 U.S. at 852-53 ("[W]hen a purchaser is motivated by a desire to use or consume the item purchased . . . the securities laws do not apply" (citations omitted)).

[74] *Id.* at 849.

The purpose of ETH on the Ethereum Network is to enable the use of the Ethereum Blockchain, which can track other data or assets that are described in smart contracts. These smart contracts also define the behaviors of these assets, i.e., how and when they are created, how and to whom they can be sent and how they can be used or consumed.[75] Smart contracts automatically execute on the occurrence of a verifiable event, such as the receipt of payment, or a video file reaching a certain number of views. Through smart contracts, the Ethereum Network allows the automation of a wide variety of economic relationships that previously have relied upon the intermediation of trusted third parties. Smart contracts are compiled into code that is understandable by a virtual computer made up of all the computers running the Ethereum Network, together known as the Ethereum Virtual Machine, or EVM.[76] In return for using the EVM's computational power, users must pay small quantities of ETH, often analogized to "gas" powering an engine. The gas cost varies according to the computational complexity of the code to be executed and demand for computational power.[77]

Widespread interest in the Ethereum Network's capability continues to grow as developers and businesses research and test new implementations of smart contracts on the Ethereum Network, activities that require the purchase and use of ETH. There are several examples of current, real-world usage of ETH for smart contracts on the network. The French insurance company AXA is reportedly using Ethereum smart contracts to offer travel delay insurance smart contracts, taking advantage of the public information regarding flight delays to trigger the insurance policy automatically.[78] Toyota is reportedly working on a proof-of-concept for an Ethereum smart contract-based alternative to ride-sharing services such as Uber and Lyft.79 UBS is reportedly leading a project in collaboration with Barclays, Credit Suisse, KBC, SIX and Thomson Reuters that will allow banks to securely coordinate and share reference data using the Ethereum Blockchain.[80] The nation of Aruba is reportedly developing a tourism marketplace on the Ethereum Blockchain that its central bank hopes will allow local tourism-based businesses to compete with large travel firms such as Expedia and Priceline.[81] There is a growing interest in using Ethereum as a gaming platform, triggered by a game that went "viral" which allowed users to buy and sell collectible cartoon cats using Ethereum smart contracts.[82] These demonstrate the actual consumptive uses that ETH is intended to have.

These current and valuable uses of ETH distinguish it from tokens such as the Munchee

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[75] *What is Ethereum?, supra* note 51.

[76] *Id.*

[77] *Id.*

[78] Stan Higgins, *AXA Is Using Ethereum's Blockchain for a New Flight Insurance Product*, COINDESK (Sept. 13, 2017), https://www.coindesk.com/axa-using-ethereums-blockchain-new-flight-insurance-product/.

[79] Matthew Leising, *Toyota, Merck Join Ethereum Group to Build Blockchain Network*, BLOOMBERG (May 22, 2017), https://www.bloomberg.com/news/articles/2017-05-22/toyota-merck-join-ethereum-group-to-build-blockchain-network. ("Toyota, for example, is experimenting with ethereum to help it develop self-driving cars and other uses").

[80] Michael del Castillo, *UBS to Launch Live Ethereum Compliance Platform*, COINDESK (Dec. 11, 2017), https://www.coindesk.com/ubs-launch-live-ethereum-platform-barclays-credit-suisse/.

[81] Jonathan Keane, *Aruba Looks to Ethereum to Boost Tourism*, COINDESK (Dec. 3, 2017), https://www.coindesk.com/blockchain-beach-aruba-looks-ethereum-sustain-tourism/.

[82] Olga Kharif, *CryptoKitties Mania Overwhelms Ethereum Network's Processing*, BLOOMBERG TECHNOLOGY (Dec. 4, 2017), https://www.bloomberg.com/news/articles/2017-12-04/cryptokitties-quickly-becomes-most-widely-used-ethereum-app.

token that, in economic reality, at best had speculative, future uses that were incidental to its primary function as a capital-raising device.[83] As with most commodities, there will always be speculators who attempt to profit from fluctuations in the value of digital assets such as ETH. The possibility of speculation does not alone fulfill this factor of the *Howey* test because it does not erase the fundamental consumptive nature of ETH. Instead, the determinative question is whether the digital asset exists in order to provide actual functionality, or solely as a means to share in the profits generated by the venture.

4. ETH owners do not rely upon the entrepreneurial and managerial efforts of others

Owners of ETH do not rely upon an identifiable group or entity to support its value, and thus cannot be "entrusting the promoters with both the work and the expertise to make the investment pay off."[84] Owners of ETH could potentially rely upon miners, developers or the Ethereum Foundation, but under the current circumstances of ETH, any reliance on these groups in the abstract is insufficient to fulfill this final element of the *Howey* test.

As with BTC, original and new developers can suggest changes, but miners and other participants need not adopt them. Rather than a centralized management group as in Munchee, the developers and users of the Ethereum Network are a widely dispersed group of actors with divergent interests. Further, unlike the "curators" of The DAO, upon whom DAO token holders relied to evaluate potential investments, holders of ETH do not rely upon the discretionary managerial efforts of anyone to make the network functional or successful.

Notwithstanding its original coordination of network development, the role of the Ethereum Foundation has significantly diminished since the pre-sale efforts. The Ethereum Foundation used the funds from the pre-sale and the retained ETH to repay legal fees incurred in forming the foundation and to reward the early developers who were instrumental in developing the technology.[85] The remaining funds were dedicated to promoting continued development and improvements to the Ethereum Network, but current funding for the Ethereum Foundation is provided by donations.[86]

Nonetheless, it cannot be said that purchasers of ETH are relying upon the essential managerial efforts of others by buying additional "services *absolutely necessary* to the turning of the promised profit."[87] Although ETH exhibits a slightly more structured community than BTC, like BTC owners and the gold coin buyers in *Belmont Reid*, owners of ETH possess an instrument whose price depends upon the global ETH market. That market is influenced by the collective efforts of unaffiliated developers and miners and the coordination activities of the Ethereum Foundation, but no one person or entity is "absolutely necessary" to such market. Although it is true that some of the developers working with or for the Ethereum Foundation continue to influence other developers and therefore future improvements to the network, this influence is

[83] Munchee order, *supra* note 3, at 4 ("Munchee told potential purchasers that they would be able to use MUN tokens to buy goods or services in the future after Munchee created an 'ecosystem'").

[84] *Costantino*, *supra* note 42, 403 F.2d at 1035.

[85] *See History of Ethereum, supra* note 56.

[86] *See Donate to Support Development*, ETHEREUM.ORG, https://www.ethereum.org/donate (last accessed Dec. 29, 2017); *see also Intended Use of Revenue*, ETHEREUM.ORG (July 23, 2014), https://web.archive.org/web/20140723212717/http:/www.ethereum.org/pdfs/IntendedUseOfRevenue.pdf.

[87] *Costantino*, *supra* note 42, 403 F.2d at 1035 (emphasis added).

exercised solely through their ability to persuade others to agree, not through any formal managerial position in the enterprise. Developers can only make suggestions; it is up to the multitude of Ethereum users to decide whether these suggestions should be implemented.[88] Formally, the Ethereum Foundation's current primary function is to host an annual conference where people interested in the development of the network can gather to share ideas. The Ethereum Foundation also runs a bug bounty program that provides modest rewards for finding vulnerabilities in the Ethereum code, and grants to unaffiliated developers working on already in-progress projects for improving the Ethereum Network.[89] These activities make the Ethereum Foundation more akin to the sort of trade organization that exists in any number of industries, rather than the promoter of an enterprise. Unlike Munchee, where company management's continued efforts were critical to Munchee tokens having any value at all, the dissolution of the Ethereum Foundation would have a minimal effect on the continued functionality of the Ethereum Network and the usefulness and value of ETH.

C. XRP

Although some of the technology and ideas in the Ripple Network are older than BTC, the Ripple Network was created as a response to BTC, with improved payment-transfer functionality. Ripple technology allows transfer and exchange of multiple currencies instead of just one (e.g., BTC on the Bitcoin Blockchain) and has faster transaction times and reduced electricity usage. Ripple technology is also designed to facilitate enterprise usage, including by banks and other financial intermediaries.[90]

The Ripple Network allows participants to transmit money on a peer-to-peer basis over the internet without trusted third-party intermediaries. Transactions typically settle in seconds, rather than in minutes or hours as on the Bitcoin Network.[91] The network supports a digital asset native to the network, called Ripple or XRP, but can also be used to transfer any other currency or asset, such as U.S. dollars. The protocol and software used to access the Ripple Network and to participate on the network in various capacities is free and open-source.

The Ripple Network is built on the concept of "trust lines." While XRP can be sent natively over the Ripple Network, all other currencies are represented as amounts due from particular counterparties.[92] Participants set up "trust lines" indicating which institutions they are willing to have credit exposure to. For example, imagine two users, a U.S. user and a European user. The U.S. user has a U.S. dollar trust line extended to her U.S. bank, indicating her willingness to have credit exposure to the U.S. bank (as would be the case with an uninsured deposit). After creating

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[88] *See* Vitalik Buterin, *Notes on Blockchain Governance*, VITALIK.CA (Dec. 17, 2017), http://vitalik.ca/general/2017/12/17/voting.html (arguing the benefits of the informal governance systems used by Bitcoin, Ethereum, and similar digital assets over more formal voting systems).

[89] *See History of Ethereum*, *supra* note 56.

[90] *See generally The Ripple Protocol: A Deep Dive for Finance Professionals*, THE-BLOCKCHAIN.COM (Nov. 2014), http://www.the-blockchain.com/docs/Ripple%20Protocol%20-%20Deep%20Dive%20For%20Financial%20Professionals.pdf.

[91] *See* F. Armknecht et al., *Ripple: Overview and Outlook*, *in* TRUST AND TRUSTWORTHY COMPUTING 169 (M. Conti, M. Schunter,& I. Askoxylakis I. eds., 2015).

[92] *See* Adriano Di Luzio, Alessandro Mei, & Julinda Stefa, *Consensus Robustness and Transaction De-anonymization in the Ripple Currency Exchange System* 3 (IEEE 37th Int'l Conf. on Distributed Computing Systems, June 2017), http://wwwusers.di.uniroma1.it/~stefa/webpage/Publications_files/paper%20172.pdf.

that trust line, the U.S. user would follow the U.S. bank's procedures to deposit U.S. dollars and receive a U.S. dollar XRP balance in her account. The European user has a U.S. dollar trust line to Bitstamp, a European digital asset exchange, indicating a willingness to have credit exposure to Bitstamp. If the U.S. user sends U.S. dollars to the European user, the European user will receive U.S. dollars that are in the form of an amount due from Bitstamp. Assuming that Bitstamp has extended trust to the U.S. bank and XRP was not used as a bridge currency in the transaction, the transaction results in Bitstamp having a U.S. dollar amount due from the U.S. bank. The European user does not need to trust the U.S. user, because there is a chain of trusted parties between them. The Ripple Network finds the most efficient and cheapest path from sender to recipient. Original versions of the protocol required all participants to have extended trust to each other (except with respect to XRP transactions) but later versions introduced market makers who were willing to take credit risk to multiple parties and also make exchanges between different currencies. These market makers facilitate complex, multi-participant hops between sender and receiver.

XRP also stands out for its use of "gateways," or institutions that allow users to add liquidity to the Ripple Network.[93] The prototypical gateway is a bank that allows users to deposit U.S. dollars and then receive a U.S. dollar balance in their XRP wallet (representing an amount due from that bank). Gateways also have procedures to allow non-XRP assets to be removed from the Ripple Network. For example, a user that has extended U.S. dollar trust to Bitstamp and receives U.S. dollars in the form of a Bitstamp receivable can follow Bitstamp's procedures to withdraw the U.S. dollars (typically by engaging in a transfer to an account at another financial institution).

XRP primarily functions to facilitate transactions on the Ripple Network, including non-XRP transactions. A small amount of XRP is needed to open new accounts and dispatch transactions, as an anti-spam measure that acts as a safeguard against the Ripple Network being overwhelmed by an attack conducted by a participant effecting a very large number of transactions at once (known as a distributed denial-of-service or DDoS attack).[94] These transaction fees are generally very low (e.g., $0.001), but have been sufficient to prevent an attempt to overwhelm the network. XRP also functions as a "bridge currency" to facilitate currency transactions where no direct exchange is available; for example, between lightly traded currency pairs, or between parties that do not have intervening institutions between them that are willing to extend credit to one another.[95] Despite XRP's function being to facilitate transactions on the Ripple Network and not necessarily as a currency itself, it is traded on various virtual currency exchanges as its market price fluctuates against U.S. dollars, euro, yen, BTC and other digital and non-digital assets.

Because XRP does not have attributes of traditional equity or debt securities, such as ownership rights, rights to a share of profits or rights to periodic payments, the Manager analyzes whether XRP is a security in accordance with the *Howey* test. Although XRP differs from BTC and ETH in that it is not mined, ownership of XRP, like ownership of BTC and ETH, does not involve a "common enterprise with profits to come solely from the efforts of others."[96]

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[93] *The Ripple Protocol: A Deep Dive for Finance Professionals*, *supra* note 90, at 9.

[94] *Id.* at 14.

[95] *Id.*

[96] *W.J. Howey Co.*, *supra* note 4, 328 U.S. at 301.

1. XRP is not promoted as an investment of money

Ripple was founded in 2012 as OpenCoin, which later changed its name to Ripple Labs, Inc., a for-profit corporation with its own shareholders and securities that has been financed through several rounds of traditional venture-capital funding.[97] Unlike other digital assets, XRP is not generated through a mining process, but instead 100 billion XRP were created at once by Ripple Labs in 2012. Under the Ripple Network protocol, no further XRP can be created. Out of these 100 billion XRP, 20 billion were given to the two founders and the balance went to Ripple Labs.[98] Ripple Labs received its allotment of XRP to fund, among other things, continued development and improvement of the Ripple Network. Ripple Labs' stated goals in distributing XRP have been primarily to incentivize more participants to join and use the Ripple Network.[99]

Ripple Labs has distributed XRP since 2012 in a number of ways. It has given XRP away to users for free to encourage adoption of its platform. It has sold XRP at a discount to market makers and financial institutions to incentivize them to participate in the Ripple Network. It has given XRP to developers as part of bug bounty programs. Ripple Labs also provides rebates and other benefits to merchants that accept payment in XRP.[100]

Although XRP was given and sold to members of the public, the distribution differed significantly from recent so-called "initial coin offerings." Sales were not marketed as an investment or profit-making opportunity. Sales were not time-limited in a manner designed to pressure purchasers. Further, many initial users or owners of XRP received it for free from Ripple Labs as part of Ripple Labs' efforts to encourage use of the Ripple Network. As described below, even those participants who purchased XRP directly from Ripple Labs were expected to be purchasing XRP for use, not for investment. To the Manager's knowledge, Ripple Labs' sales materials have never suggested investing in XRP for its potential value appreciation and never indicated that XRP reflects the value of Ripple Labs, and Ripple Labs has avoided giving any indication of an approximate or expected price or value for XRP. Further, as far as the Manager has been able to determine, Ripple Labs did not arrange for immediate secondary-market trading of XRP outside the Ripple Network in a way that would suggest that it was being sold as an investment.

2. An investment in XRP does not rely upon a common enterprise

Like Bitcoin, Ethereum and other distributed ledger technologies, the Ripple Network relies upon a consensus process for certain participants in a peer-to-peer network to agree upon a single ledger that shows account balances (for XRP and all other currencies) for all participants. Similar to other blockchain-based technologies, the Ripple Network creates a new block, called a "ledger," that certain participants in the peer-to-peer network agree upon, along with a reference to the previous block. The block or ledger contains not only transactions but also includes the

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[97] *Ripple Funding Rounds*, CRUNCHBASE.COM, https://www.crunchbase.com/organization/ripple-labs/funding_rounds/funding_rounds_list (last accessed Dec. 22, 2017).

[98] Saifedean Ammous, *Can Cryptocurrencies Fulfil the Functions of Money?* (Columbia University Center on Capitalism and Society Working Paper No. 92, Aug. 2016), http://capitalism.columbia.edu/files/ccs/workingpage/2017/ammous_cryptocurrencies_and_the_functions_of_money.pdf.

[99] *XRP Distribution*, RIPPLELABS.COM, https://web.archive.org/web/20150806120942/https://www.ripplelabs.com/xrp-distribution (last accessed Dec. 22, 2017).

[100] Danny Bradury, *Ripple turns on giveaway faucet*, COINDESK (June 5, 2013), https://www.coindesk.com/ripple-turns-on-giveaway-faucet; *Ripple: Become a Bounty Hunter*, BOUNTYSOURCE.COM, https://www.bountysource.com/teams/ripple (last accessed Dec. 22, 2017).

complete ledger account balances (called the last-closed ledger). While miners of BTC are financially incentivized to compete to find the next block, validators in the Ripple Network receive no financial reward. A supermajority of validators must agree on transactions and ledgers for them to be approved.[101]

Similar to BTC and ETH, the free and open-source nature of the XRP software and protocol prevents there from being a common enterprise. Each holder of XRP acts independently of one another, and independently of Ripple Labs, with no commitment to engaging in activities to increase the value of XRP. While it appears that many XRP developers and transaction validators are employed by or otherwise contracted by Ripple Labs, and Ripple Labs actively promotes the use of the network through outreach and consulting services to financial institutions, the Ripple Network would likely continue to function and XRP would continue to have value even if Ripple Labs ceased to have any continuing involvement.[102] The independence of XRP from Ripple Labs is significantly different from the tokens at issue in the Munchee order, where the value of the tokens was entirely dependent upon the continuing efforts of Munchee to support and grow the enterprise, as Munchee had central and exclusive control over the Munchee app, its development and expansion.[103]

3. XRP is designed to have consumptive uses, not to generate profits

Like BTC and ETH, XRP has significant real-world current uses. Ripple technology is especially attractive to businesses because it enables the transfer and exchange of multiple currencies with fast transaction times and minimal electricity usage. Ripple technology is also designed to facilitate enterprise usage, including by banks and other financial intermediaries.

Even more than BTC and ETH, XRP has a fundamentally consumptive use, namely as a necessary component of a system that uses blockchain technology for transfers of government-backed currencies and other assets. Usage of the Ripple Network requires that XRP be purchased to facilitate transfers of other currencies, not for investment with the expectation of profits. At the time of the first sales and giveaways, the Ripple Network was functional, not a venture to be developed with funding from the proceeds of the sale. The software was free and open-source. Participants could create wallets and purchase XRP and use it to conduct transactions in XRP or other currencies. XRP was not sold as an investment product to hold based upon its potential future value.

In fact, XRP and the Ripple Network are currently used by established financial institutions to facilitate financial transactions, thus using XRP as it was designed to be consumed. Over 100 banks and financial institutions, including Santander, UniCredit, UBS, Standard Chartered, BBVA and MUFG have joined the Ripple Network to facilitate faster payments and

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[101] *See* Marcel Rosner & Andrew Kang, *Understanding and Regulating Twenty-First Century Payment Systems: The Ripple Case Study*, 114 MICH. L. REV. 649, 664 (2016).

[102] FAQ, RIPPLE WIKI, https://wiki.ripple.com/Distributed_exchange#What_would_happen_to_Ripple_if_Ripple_Labs_disappears.3F (last accessed Dec. 20, 2017) ("What would happen to Ripple if Ripple Labs disappears? The Ripple network would then operate independently of Ripple Labs. Ripple Labs develops and promotes the network, but does not control the Ripple network").

[103] Munchee order, *supra* note 3, at 6.

remittances.[104] The first pilot project using XRP as a bridge currency is reportedly being conducted by Cuallix, a Mexican payment-processing and remittance firm.[105] These examples demonstrate that many XRP purchasers expect to consume it, rather than profit from holding it.[106]

XRP is marketed and sold by Ripple Labs as a product to be consumed and expended through its use on the Ripple Network and not as an investment with an expectation of profit. In fact, appreciation in the value of XRP decreases the utility of the Ripple Network for its users. Based on the Manager's research, it does not appear that Ripple Labs marketed XRP as an investment for which purchasers could expect a profit. Unlike the tokens at issue in the Munchee order, Ripple Labs' marketing materials (such as its white paper) focus on the technological aspects of the Ripple Network and its potential use by finance professionals as a fast, inexpensive system for the transfer of value, as an alternative to other interbank transfer systems – rather than any potential profit from the purchase of XRP.[107] Thus, "[b]ecause [Ripple Labs] is not inducing purchases in [XRP] by emphasizing the possibility of profits or offering profits from [XRP] in the form of capital appreciation or participation in earnings,"[108] XRP does not qualify as an investment contract.

The fact that XRP has been purchased by speculators with a profit motive does not alter its fundamental characteristics as a device to facilitate transactions over the Ripple Network. Speculators may purchase XRP with the hope it increases in value due to its scarcity. These purchasers may be speculating that if the Ripple Network sees an increase in usage, the limited maximum quantity of XRP could be below the level of demand, causing XRP to increase in value – even if that was not its developer's intent. This sort of purchase would be similar to a speculator purchasing a particular vintage of wine in the hope that it increases in value. The wine was not intended by the vineyard to be held as an investment, even if unrelated third parties determine to speculate on its future value.[109]

4. XRP owners do not rely upon the entrepreneurial and managerial efforts of others

Although the speed of transactions, the number of participants and other functionality of the Ripple Network may be affected by continued development by Ripple Labs, holders and users of XRP are relying primarily on the collective activity of such holders and users to enhance the

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[104] Ryan Browne, *Start-up Ripple has over 100 clients as mainstream finance warms to blockchain*, CNBC (Oct. 10, 2017), https://www.cnbc.com/2017/10/10/ripple-has-over-100-clients-as-mainstream-finance-warms-to- blockchain.html.

[105] *Id.*

[106] *See Edwards*, *supra* note 1, 540 U.S. at 394 (stating an essential element under the *Howey* test is that "the investing public is attracted by representations of investment income").

[107] David Schwartz et al., *The Ripple Protocol Consensus Algorithm* (Ripple Labs Inc. White paper 2014), https://ripple.com/files/ripple_consensus_whitepaper.pdf.

[108] *Allen v. Lloyd's of London*, 94 F.3d 923, 931 (4th Cir. 1996) (quoting *Teague v. Bakker*, 35 F.3d 978, 987 (4th Cir. 1994)) (internal quotation marks and alterations omitted).

[109] *See Key Futures, Inc.*, *supra* note 40, 638 F.2d at 77 (holding sale of silver bars was not an investment contract because "[o]nce the purchase of silver bars was made, the profits to the investor depended upon the fluctuations of the silver market, not the managerial efforts of [the sellers]. The decision to buy or sell was made by the owner of the silver."); *Mutual Benefits Corp.*, *supra* note 44, 408 F.3d at 744 n.5 (stating there would be no investment contract "[w]hen profits depend upon market forces [and] public information is available to investors by which they can independently evaluate the possible success of the investment.").

utility and liquidity of XRP on the Ripple Network, and only secondarily, if at all, on the entrepreneurial and managerial efforts of Ripple Labs or any other entity. Owners of XRP can in this respect be contrasted with purchasers of Munchee tokens, who were sold the token on the basis that "Munchee and its agents . . . [would] create the 'ecosystem' that would increase the value of MUN" including through "Munchee's specific efforts to cause appreciation in value."[110]

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II. ***You state that the Manager could determine that a digital asset is not an appropriate medium for investment if the digital asset is likely a "security" under U.S. securities laws. Please provide a detailed description of the process and framework the Manager will use for making this determination.***

When vetting new digital assets for the Fund, the Manager intends to analyze each digital asset against the definition of "security" in Section 2(a)(1) of the Securities Act and Section 3(a)(10) of the Exchange Act. If the asset's attributes do not appear to cause it to fall into a category other than "investment contract," the manager will use the *Howey* analysis in order to determine whether it should be characterized as a security.

Because the *Howey* test is a facts-and-circumstances analysis, the Manager will not be able to employ a prescriptive set of rules to determine whether a digital asset is an investment contract. However, in order to inform its *Howey* analysis, the Manager will gather and consider available facts regarding the digital asset and will consider a broad range of factors, including the following, each of which may be weighed differently depending on the facts and circumstances:

- Whether there is an identifiable central enterprise whose efforts are funded by the sale of the digital assets, and whose efforts are necessary for the development or utility of the digital asset.
- The features of the digital asset, such as:
  - the uses for which the asset is currently available,
  - whether ownership or use of the digital asset allows its holders to access a system,
  - if the digital asset relates to use of a system, what that system's existing functionality is, and
  - whether ownership of the digital asset grants the holder any rights or privileges, including any right to share in any profit or vote on any matter.
- The operational state of the system in which the digital asset functions, or will function, and whether the system is currently operational or was operational at the initial time of sale, and whether the system is actually used by parties unaffiliated with the developers or promoters.
- The extent to which continuing managerial efforts of the developers or promoters of the digital asset following its initial sale are or were necessary for the digital asset to have

[110] Munchee order, *supra* note 3, at 9.

value.

- How the digital asset is primarily and actually used in practice.
- The circumstances around the initial development of the digital asset.
- The circumstances and statements made by the developers or promoters of the digital asset, both in connection with any initial sale and subsequently.
- Any efforts by the developers or promoters to foster an expectation that the digital asset may increase in value independently of the value of the service that the digital asset provides access to, or their endorsement of others' statements in this regard.
- Whether efforts by developers or promoters to promote the digital asset were targeted at potential users of the digital asset, or groups expected to speculate on the digital asset's value.
- Any efforts by the developers or promoters (if any) to arrange for secondary-market trading of the digital asset.
- Whether the digital asset was initially sold in an offering transaction (rather than entirely mined, as in BTC) and if so, the stated and actual use of the funds raised.
- What factors appear to the Manager to affect the market value of the digital asset, and the extent to which the market value is tied to the activities of an identifiable group of persons involved in promoting the digital asset.
- The Manager's view of the reasonable expectations of purchasers of the digital asset.
- The degree of control or centralization over the digital asset by promoters or any other party.

The Manager may take into consideration any legal analysis or memoranda about the status of the digital asset prepared by persons associated with the digital asset or other commentators. While the Manager's views may be informed by these materials, it will not consider these materials to be conclusive. The Manager will weigh the expertise of the authors and any potential incentives that the authors have to reach their viewpoint, and the Manager will ultimately reach its own conclusion.

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We appreciate the staff's review of the Registration Statement and look forward to any further comments or questions you may have. You may contact me at [redacted].com, or [redacted],
[redacted].com.

Very truly yours,

[redacted]

cc: [redacted]
Head of Legal
[redacted]