DON'T TAKE YOUR CRYPTO TO THE CRYPT: ESTATE PLANNING STRATEGIES AND CONSIDERATIONS FOR CRYPTOCURRENCY, NFTS, AND OTHER EMERGING DIGITAL ASSET TECHNOLOGIES

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I. INTRODUCTION

Cryptocurrency has been around for several years now but compared to other tried-and-true investments out there, it is still new; still sexy. It is the first date of the investment world. Sure, it’s risky and volatile, and of course you don’t want to make a fool of yourself; you probably even have some butterflies just thinking about it. But the potential is there, and its undeniably exciting. Maybe you go out a few times and just not call again. Maybe it ends up being too much to handle and you let the relationship run its course and move on to something else. But maybe, just maybe, it’s the start of something beautiful—a marriage of sorts, that despite its wild ups and downs at the beginning, ultimately settles down into something comfortable and reliable and a perfect long-term fit for you. Whatever the case, when the relationship reaches a sunset of sorts, your beloved investment, like any long term committed relationship, will need proper estate planning and ultimately some sort of post-mortem attention, probate or otherwise, after you are gone.

Due to the still relative newness of cryptocurrency and other digital assets making their way into the mainstream, laws are constantly evolving to keep up with these advancing technologies. Consequently, the practical application of many of the current laws and regulations are speculative at best. Given the staying power of cryptocurrency over the past decade, despite its volatility, it does not appear to be going anywhere. In fact, the same technology used to create cryptocurrency is expanding its utility into other areas, like non-fungible tokens ("NFTs") and alt-coins, to name a few. So, like it or not, these digital assets are likely here to stay, making it a worthwhile endeavor to not only understand them, but to figure out the best ways to work them into estate planning and probate strategies to maximize their value and allow them to reach their full potential as part of a legitimate investment portfolio.

II. DIGITAL ASSETS: WHAT ARE THEY AND HOW DO THEY WORK?

Entire papers can (and have been) written on the ins and outs of cryptocurrency and related digital assets. For the purposes of this paper, however, a generalized background will be provided with a basic breakdown of important of terms and concepts; this is by no means sufficient to provide a complete understanding of what digital assets are or how they work but should scratch the surface enough to provide context for the purpose of gaining some insight into how these assets present unique issues in the areas of estate planning and probate.

a. Crypto and NFTs, and Blockchain, Oh My!

The idea of digital currency is far from new. For decades, e-commerce firms tried to come up with ways to incorporate internet-based payment systems into the mainstream.[1] The 1990's internet boom brought forth a wave of technological advancements, but a new currency proved too much for society at large. Banks were wary, merchants were not interested, and individual consumers did not want to part with their credit cards.[2] Ironically, the reluctance of consumers to wade into unknown digital currency territory seems retrospectively misplaced given their general willingness to expose their banking and credit card information to the world wide web as a trade-off for the convenience of making online purchases and payments.

[1] Pitta, Julie. "Requiem for a Bright Idea." Forbes, Forbes Magazine, 6 June 2013, www.forbes.com/forbes/1999/1101/6411390a.html?sh=144a47b3715f. Accessed 6 July 2021.
[2] Id.

While the technical fundamentals are vastly different, the idea of imputing private banking or credit card information online to make a purchase versus using a digital currency[3] to make the same purchase is conceptually identical from the consumer's perspective. This is due to the way encrypted information is transferred from one party to another; whether you are dealing with a US Dollar or a Bitcoin, that currency is essentially reduced to a series of characters that are digitally transported from one party to another and protected by a series of characters referred to as a "key." The consumer never really sees this part of the transaction no matter what kind of currency is being used.

That said, while most people are generally, albeit vaguely, aware of how their banking and credit card information is stored and transmitted during an online financial transaction, the transaction for digital currencies is much more complicated. Fortunately, the bases for such transactions was published in a tidy, condensed, 9-page white paper on October 31, 2008 by Satoshi Nakamoto.[4] The Bitcoin white paper, titled "Bitcoin: A Peer-to-Peer Electronic Cash System"[5] succinctly lays out the complexities of the newly established "cryptocurrency," a digital currency that utilizes cryptography and a newly developed public transaction ledger system called "blockchain[6]." Blockchain is the foundational technology used in cryptocurrencies. The "…fundamental components of blockchain technology involve the use of a distributed ledger stored on a highly

[3] The term "digital currency" is a catch-all used generally to refer to currency stored "on a distributed database on the internet, a centralized electronic computer database owned by a company or bank, within digital files or even on a stored-value card." Al-Laham, Mohamad; Al-Tarawneh, Haroon; Abdallat, Najwan (2009). "Development of Electronic Money and Its Impact on the Central Bank Role and Monetary Policy." Issues in Informing Science and Information Technology. 6: 339–349. Accessed 6 July 2021.
[4] "Satoshi Nakamoto" is a pseudonym used by the person or persons who authored the bitcoin white paper and is/are generally credited with developing bitcoin and inventing blockchain.
[5] A copy of Satoshi Nakamoto's paper may be found at https://bitcoin.org/bitcoin.pdf (last visited July 6, 2021).
[6]"Blockchain" is a "digital database containing information (such as records of financial transactions) that can be simultaneously used and shared within a large decentralized, publicly accessible network." "Blockchain." Merriam-Webster.com Dictionary, Merriam-Webster, https://www.merriam-webster.com/dictionary/blockchain. Accessed 6 Jul. 2021. It also refers to the "the technology used to create such a database." Id.

encrypted, immutable ledger, which is verified by a peer-to-peer network."[7] The peer-to-peer network allows the typical, "centralized" third party institution, usually a a bank, to be removed from the process altogether. Where an ATM machine would typically communicate your request to your bank, cryptocurrencies are requested from anonymous "miners," who are paid a fractional percentage of the transaction (much like the ATM machine) to process the encrypted data holding the financial information from a universally accessible, decentralized, or "distributed" leger. While the transaction itself it complicated and involves numerous complex math equations only solvable by super-computers to reach its ends, it is secure, anonymous, and self-reliant, and accordingly an extremely attractive option to be applied in a myriad of other uses.

The primary use of this blockchain technology right now is of course cryptocurrency. A subset of the more generic category of digital currency, cryptocurrency is "a digital or virtual currency that is secured by cryptography, which makes it nearly impossible to counterfeit or double-spend… they are generally not issued by any central authority, rendering them theoretically immune to government interference or manipulation" unlike traditional currencies.[8] These currencies are generally "decentralized networks based on blockchain technology—a distributed ledger enforced by a disparate network of computers."[9]

While Bitcoin, the most popular and consequently most valuable cryptocurrency to date, lead the momentous charge in the cryptocurrency ecosystem, thousands of additional forms of cryptocurrency have developed over the years using the blockchain technology. A few examples of popular altcoins that use the same peer-to-peer blockchain technology as Bitcoin are Litecoin,

[7] Earthman, Abigail. "Building Blocks of Blockchain: A Primer on Cryptocurrency for Estate Planners." State Bar of Texas Intermediate Estate Planning & Probate Continuing Legal Education Seminar. 2 June 2020.
[8] Frankenfield, Jake. "Cryptocurrency." Investopedia, Investopedia, 25 May 2021, www.investopedia.com/terms/c/cryptocurrency.asp.
[9] Id.

Ripple, Binance Coin, and Dogecoin, but again, there are thousands more out there.[10] Some are used as general currency or securities, while others have more targeted, specific uses in the digital space, and some are really just for fun, like the pop-culture favorite Dogecoin that essentially started out as an internet meme/joke used for tipping favorable comments in certain message boards, but all of them try to improve on the original blockchain to better suit their specific purposes. An excellent example of this would be Ethereum, which is generally regarded as the most popular altcoin based on its tremendous market cap. It does not really function like traditional currency, but its ether (the cryptocurrency or "coin' used in Ethereum) is based on the value of its own platform, which is essentially an improved, advanced blockchain technology that allows for a variety of smart contract applications beyond the creation and transfer of currency, providing novel applications as well solutions to otherwise complex digital problems.[11] Perhaps an even simpler way of explaining the use of Ethereum blockchain may be to provide a popular example: "NFTs" or non-fungible tokens. NFTs are "…cryptographic assets on blockchain with unique identification codes and metadata that distinguish them from each other. Unlike cryptocurrencies, they cannot be traded or exchanged at equivalency. This differs from fungible tokens like cryptocurrencies, which are identical to each other and, therefore, can be used as a medium for commercial transactions."[12] Basically, NFTs are digital assets that allow consumers to own the unique data that makes up a particular digital item; in

[10] Jindal, Aayush. "Bitcoin and DOGE Rally, Ethereum Eyes Upside Break." Cryptonews, Cryptonews, 25 June 2021, cryptonews.com/news/bitcoin-and-doge-rally-ethereum-eyes-upside-break-10826.htm.
[11] "While Bitcoin's innovative decentralized network and cryptocurrency was a groundbreaking achievement, Ethereum has expanded on its predecessor's vision of a decentralized payments system building a global computer network that links users to a marketplace of decentralized applications (dApps) offering unprecedented efficiency, security, and user control. Through its ground-breaking combination of features like smart contracts, Ethereum is used for a variety of innovative applications in finance, web browsing, gaming, advertising, identity management, and supply chain management." "What Is Ethereum Blockchain; and Its Key Use Cases?" Gemini, www.gemini.com/cryptopedia/ethereum-smart-contracts-tokens-use-cases#section-ethereum-token-launches.
[12] Sharma, Rakesh. "Non-Fungible Token (NFT)." Investopedia, Investopedia, 18 Mar. 2021, www.investopedia.com/non-fungible-tokens-nft-5115211.

practice, this technology has been utilized for the purchase of online real estate and artwork, with popular NFTs fetching millions of dollars at auction.[13]

The last concept addressed in this background is how digital assets are stored. Unlike fiat money[14] like the US Dollar you can keep in your pocket, or the gold standard where you can store physical bars on your pirate ship or bullion in your Scrooge McDuck vault, digital assets are, by definition, intangible, making the idea of storage a little bit more difficult to understand. Without delving too much deeper into the functionality of cryptocurrency, it is relevant to this paper to understand, at a minimum, the concepts of "cold storage" and "hot wallets." Cold storage is essentially an off-line wallet, used primarily to secure valuable digital assets from potential threats like hacking,[15] comparable to keeping fiat money in an actual wallet to keep it safe from thieves. Cold storage could be held on a personal computer, or, preferably, something with multi-leveled encryption, like an external USB drive. Conversely, a hot wallet is kept online and allows trading and transferring of tokens or coins.[16] Since there are no banks or other centralized mechanism to work with, hot wallets store the encrypted public and private "keys" to facilitate transactions. It is possible to keep most digital assets in a hot wallet, but again, due to security concerns, it is generally advisable to transfer digital assets to cold storage or a cold wallet for long-term safekeeping. It is worthy to note, that once keys are lost, they are generally lost forever, along with whatever asset they were encoded to keep, which will be discussed in further detail below.

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[13] Bryan, Rebecca, et al. "What Are NFTs?: Stephen Rimmer Solicitors Eastbourne & Hastings." Stephen Rimmer, 8 June 2021, www.stephenrimmer.com/news/what-are-nfts.

[14] "Fiat money is government-issued currency that is not backed by a physical commodity… but rather by the government that issued it. The value of fiat money is derived from the relationship between supply and demand and the stability of the issuing government, rather than the worth of a commodity backing it as is the case for commodity money. Most modern paper currencies are fiat currencies, including the U.S. dollar, the euro, and other major global currencies." Chen, James. "Fiat Money." Investopedia, Investopedia, 10 June 2021, www.investopedia.com/terms/f/fiatmoney.asp.

[15] Frankenfield, Jake. "Cold Storage Definition." Investopedia, Investopedia, 19 May 2021, www.investopedia.com/terms/c/cold-storage.asp.

[16] Frankenfield, Jake. "Hot Wallet." Investopedia, Investopedia, 7 July 2021, www.investopedia.com/terms/h/hot-wallet.asp.

At this juncture, it is easy to see how vast and intricate the cryptocurrency ecosystem is, and beyond its own complexities, how it has spawned additional new technologies and assets, and in turn those new technologies breed better, faster, more efficient technologies, and so on, creating endless possibilities not only in the capabilities of the existing technology, but its applicability to future endeavors. While the rabbit-hole of cryptocurrency terminology and explanations is alluring and potentially never-ending, this very cursory background was only provided as context to explore estate planning and probate issues; additional information and in-depth analysis can be found readily available on the internet and should be consulted regularly for a more functional understanding of these new and developing technologies as they continue to grow.

b. Where Do Digital Assets Fit in Estate Planning?

Estate planning is a multi-faceted undertaking that generally incorporates various documents and procedural vehicles to manage an individual's assets and affairs not only in preparation for their ultimate passing, but also for their later years and retirement. An estate plan can consist of either a last will and testament or trust (or both), medical and/or statutory powers of attorney, guardianship designations, retirement accounts, investment accounts, POD (pay on death)/TOD (transfer on death) bank accounts, and life insurance, among other planning devises. These things are cross-referenced with one another for consistency in areas like beneficiary designations, and analyzed for maximum benefits to the individual, taking into consideration things like tax planning strategies and return on investments. Essentially, estate planning is a comprehensive management tool to organize an individual's affairs in a meaningful, productive way for their future and their legacy.

With Millennials (individuals born from 1981-1996, roughly) having overtaken Baby Boomers (individuals born from 1946-1964, roughly) as the nation's largest living adult demographic as of 2019,[17] the landscape of estate planning needs to adapt to better accommodate the wants of this large swath of the population as they get older and start paying more attention to their long-term financial needs. According to research, when it comes to things like investments, unlike their Baby Boomer and Generation X predecessors, Millennials tend not to base their financial decisions solely on return on investment, but tend to be more in line with tenants of impact investing.[18] Specifically, they generally have been found to prefer "investments made with the intention to generate positive, measurable social and environmental impact alongside a financial return" which has, arguably, lead to the increased popularity of all things digital, cryptocurrency included. In fact, when Elon Musk tweeted that Tesla would no longer accept Bitcoin payments due to increased fossil fuel usage in Bitcoin mining transactions,[19] the price of its stock fell 15% in 24 hours;[20] a few weeks later, a follow up tweet by Musk about "promising" discussions in the arena of sustainable energy alternatives with North American crypto miners[21] caused a 5% jump within a matter of minutes.[22] When you consider the market capitalization of Bitcoin hovering around $712 billion at the time, this is no small feat. When you step back even further and look at the bigger picture, the global combined cryptocurrency market capitalization reached an all-time high in May 2021, at a

[17] Fry, Richard. "Millennials Overtake Baby Boomers as America's Largest Generation." Pew Research Center, Pew Research Center, 28 May 2021, www.pewresearch.org/fact-tank/2020/04/28/millennials-overtake-baby-boomers-as-americas-largest-generation/.
[18] Additionally, "In the 2018 U.S. Trust Insights of Wealth and Worth study of high net worth individuals, nearly all Millennials surveyed (87%) thought a company's ESG (i.e. environmental, social, and governance) factors were important to their investment decision-making. In contrast, two-thirds of Gen-Xers thought ESG factors were important to investment, but only 48% of Baby Boomers and 39% of the Silent Generation felt a company's ESG factors were significant considerations in investment decision-making." Wakeman, Christine S. "DOs and DON'Ts of Estate Planning for Millennials." The University of Texas School of Law. 2019 Stanley M. Johanson Estate Planning Workshop, 6 Dec. 2019.
[19] Musk, Elon (elonmusk). "Tesla & Bitcoin" 12 May 2021. 17:06 CST. Tweet.
[20] Río, Mairem Del. "A Tweet from Elon Musk Crashed Bitcoin and This New Tweet Lifted It in Minutes, Can We Now Talk about the 'Musk Effect'?" Entrepreneur, Entrepreneur, 25 May 2021, www.entrepreneur.com/article/372848.
[21] Musk, Elon (elonmusk). "Spoke with North American Bitcoin miners. They committed to publish current & planned renewable usage & to ask miners WW to do so. Potentially promising." 24 May 2021. 14:42 CST. Tweet.
[22] Rio, Mairem Del.

staggering $2.43 trillion,[23] so clearly a lot of people are investing a lot of money in digital assets, making financial and estate planning paramount to protect those assets now and in the immediate future.

The structure and functions of new technologies, as discussed above, are important in the context of estate planning because it is that structure and functionality that dictates how these assets are ultimately treated by authorities like the Internal Revenue Service and probate courts, authorities that have the power to assess taxes and allocate property. For example, the fact that someone “owns some Bitcoin” does not provide enough information to know what if, when, or how that Bitcoin will be taxed, and how it will ultimately be passed to heirs when the owner passes away. However, if an individual owns some Bitcoin held on a USB drive in their safety deposit box, a password-protected hot wallet full of Bitcoin, Ethereum, and Litecoin for day trading, and an NFT portfolio with various NFTs held in cold storage on their personal computer, the direction becomes a little bit clearer, as discussed in further detail below.

c. The Ripple Effect: Crypto Issues in Probate/Estate Administration

If an individual dies “testate” he died with a will. A testate administration typically involves the person named executor in the will filing the will in a court of competent jurisdiction along with an application for probate. This application will essentially request the court appoint the applicant in charge of administering the decedent’s estate. Assuming all conditions are met, the applicant is appointed executor of the decedent’s estate and is conferred authority by the court to manage the decedent’s affairs within the parameter’s laid out in the decedent’s will. Though it is usually a straightforward process, the nature of cryptocurrency investments is such that even with authority granted by the court, an executor may still not be able to access or otherwise administer digital assets

[23] “Combined Market Cap of Bitcoin, Ethereum and Tether Up by $396B YTD, Despite Crypto Price Crash.” Investorideas.com, www.investorideas.com/News/2021/cryptocurrency/06232Bitcoin-Ethereum-Tether.asp.

unless the decedent executed an adequate estate plan to account for such assets, as discussed in further detail below.

Conversely, if an individual dies "intestate," he died without a will. That does not mean he did not leave an estate or that probate is unnecessary. To the contrary, probate is likely still necessary and with added steps to determine heirship and to make sure the decedent's property is distributed to his heirs at law. Similarly, as discussed above, the court's authority may prove moot if the decedent did not leave access information to obtain digital assets. An additional consideration for intestate cryptocurrency inheritance are issues of community property. When dealing with descent and distribution matters, sometimes community property is divided in fractional percentages in order to distribute assets to the appropriate heirs, and that might include dividing cryptocurrency as a community asset; but if the spouse of the decedent does not have access to the wallet key, there is no real way for the surviving spouse to access their own share of the digital assets, let alone their community share as a surviving spouse, which may lead to additional issues of compensation from other areas of the estate etc.

Additionally, it is essential to understand the mechanisms by which assets generally pass from decedents to their heirs in order to understand how various kinds of digital assets can be transferred. Depending how the estate plan is structured and how an individual's assets are managed during their lifetime, after their death those assets are either part of their estate and thus subject to probate, or they pass automatically to a named beneficiary and are, thus, non-probate assets. Typical examples of this are POD/TOD accounts and some insurance policies. Cryptocurrency and digital assets may fall into this category if they are governed by a third party exchange and subject to contractual legacy provisions.

Further, depending on the jurisdiction, and the specifics facts of the case, there are other potential alternatives to the probate process. Some of these alternatives include small estate affidavits, muniments of title, and heirship affidavits, and while they may be useful in some situations, they are usually fairly limited in scope and therefore unlikely to be beneficial, and in fact may prove fatal, in the context of transferring cryptocurrency or other digital assets to a decedent's heirs since the lack of proper fiduciary would likely inhibit transfers.

Whether the assets are left testate, intestate, or pass outside of probate altogether or by some alternative, proper planning is necessary to avoid potentially catastrophic results. Take the case of crypto exchange QuadrigaCX CEO, Gerry Cotton, who died unexpectedly at age 30 in December 2018: at his death, he held the only cryptographic cold storage keys to access his company's cryptocurrency, totaling over $190 million in assets held by more than 100,000 consumers.[24] According to sources, Cotton had a will, and while it "included $100,000 for the care of his two pet chihuahuas… [there was] apparently no contingency for his personal crypto or business affairs."[25] In another case, when crypto entrepreneur Mircea Popescu died unexpectedly in June 2021 at the age of 41, sources reported that the keys to his cold storage were unknown, leaving his $2 billion in cryptocurrency holdings potentially inaccessible.[26] These cases are not unique, with reports suggesting that approximately 20% of Bitcoin alone is lost, or "burned"[27] due to lost keys and/or improper estate planning. As evidenced above, lost keys and poor planning lead to a host of problems including bankrupt companies, lost fortunes, and a myriad of other legal complications,

[24] Barber, Gregory. "A Crypto Exchange CEO Dies-With the Only Key to $137 Million." Wired, Conde Nast, www.wired.com/story/crypto-exchange-ceo-dies-holding-only-key/.
[25] Id.
[26] DeCambre, Mark. "One of the Largest Owners of Bitcoin, Who Reportedly Held as Much as $1 Billion, Is Dead at 41: DeCambre, Mark. "Bitcoin Pros Speculate over Possible Loss of $2 Billion Crypto Fortune after Death of One Large Owner." MarketWatch, MarketWatch, 2 July 2021, www.marketwatch.com/story/bitcoin-pros-speculate-over-possible-loss-of-2-billion-crypto-fortune-after-death-of-one-large-owner-11625255745.
[27] Reiff, Nathan. "20% Of All BTC Is Lost, Unrecoverable, Study Shows." Investopedia, Investopedia, 12 Sept. 2020, www.investopedia.com/news/20-all-btc-lost-unrecoverable-study-shows/.

including, at least in Gerald Cotton's case, exhumation proceedings to try and remedy some of the problems caused by poor or incomplete planning.[28]

III. ESTATE PLANNING CONCERNS AND SOLUTIONS

To set up a comprehensive estate plan, the nature, value, and manner in which an individual's assets are held are important and even required factors to consider, especially when looking at digital assets.

a. Is Crypto a Good Investment?

While this article is not meant to provide financial advice, exploring cryptocurrency as a legitimate addition to an investment portfolio is necessary to expose where potential pitfalls may lie. As previously noted, cryptocurrency and digital assets in general have gained a certain allure in younger generations that are looking to reduce their carbon footprint and move away from less sustainable, but lucrative investments like oil and gas or precious metals.

Additionally, cryptocurrency has historically (at least for the duration of its relatively short history) been considered a means of inflation protection. Given the decentralized nature of cryptocurrency, it is generally regarded as immune to typical market influences, but new data from the COVID-19 crisis would suggest that it is in fact vulnerable to certain economic events.[29] Other considerations like scarcity that would affect the overall value of such assets varies depending on the asset and how it is structured. For example, Bitcoin's algorithm increases the supply of coins periodically until it caps out at 21 million coins in 2140, ensuring limited circulation, and consequent increased value over time.[30] Altcoins all have there own terms for capping production or otherwise

[28] Bloomberg.com, Bloomberg, www.bloomberg.com/news/articles/2019-12-13/-questionable-death-prompts-call-to-exhume-quadriga-ceo-s-body.
[29] "…in March of 2020 at the height of the COVID-19 crisis, investors began to reduce risk. The stock market dropped 34%, gold dropped 12%, and bitcoin plummeted 53% as investors poured money into safe-haven US Treasuries." See Neville, Henry, et al. "The Best Strategies for Inflationary Times." SSRN.com, 29 Mar. 2021, papers.ssrn.com/sol3/papers.cfm?abstract_id=3813202.
[30] Id.

maintaining value: some require mandatory burning of a percent of holdings when selling tokens, some have an unlimited cap, but fixed price point; overall the combinations are pretty varied across the board depending on the asset, but the overall goal is to provide some kind of sustainable value. It just remains to see if those values end up being more than theoretically sustainable.

Another aspect to consider when assessing the viability of digital assets as a long-term investment would be the diversification of commodities within the general category of digit assets or cryptocurrency. Going back the gold bullion stored in your Scrooge McDuck vault, an analogy for the way this functions in practicality would be to look at the ways you can invest in precious metals: you can buy gold outright as bars or bullion, or you can stake interest in gold exploratory mining companies, or invest in precious metal ETFs and mutual funds; with investments in cryptocurrency, there are digital asset industry support networks, altcoins that are focused more on the technological capabilities of cryptocurrency (like Ethereum), you can own the digital coins themselves and store them in a digital wallet, you can invest in an exchange fund where the fund owns the keys to the wallet, or you can go a step further removed and invest in companies that are looking to utilize cryptocurrency as a means of payment, like Tesla. The point is, there is no standard cryptocurrency investment, but rather a myriad of opportunities in growth technological sectors that would tend to support long-term type goals. Because the IRS currently treats cryptocurrency like property instead of currency, [31] there are also certain tax implications related to investment in digital assets with respect to how to treat gains or losses[32] derived therefrom that should be considered as well.

Other aspects of the digital asset marketplace, like NFTs, are perhaps too new to test any real long-term viability, despite explosive interest at their outset, but the potential is there. NFTs and

[31] United States. Dept. of the Treasury. Internal Revenue Service. Publication 17: Tax Guide 2014 For Individuals. Internal Revenue Service, 2015. Web. 30 March 2015.
[32] "The Ultimate Guide to Cryptocurrency Tax Loss Harvesting." RSS, cryptotrader.tax/blog/cryptocurrency-tax-loss-harvesting.

similar crypto-assets contain unique metadata, which, in theory, makes them valuable. This is analogous to fine art principals; for example, you can purchase Vincent Van Gogh's original 'Self-portrait with a bandaged ear' easily worth millions of dollars, or order a really nice replica and frame from a gallery for a few hundred dollars, or print a copy off the internet for next to nothing. The former is the only original, even though there are infinite ways to obtain an exact carbon-copy of arguably the same artistic caliber. It is the originality, or novelty of that originality, that drives the price up a thousand-fold for the true original work. The same hold true with NFTs. You can view Jack Dorsey's original tweet on Twitter for free or print out a screenshot and put it on your wall which is also free, or download it to look at whenever you want, again, for free, but the NFT containing the original, unique metadata on a blockchain for that tweet recently sold for $2.9 million.[33] Unlike tangible works, however, NFTs do not implicitly come with distribution or reproduction rights. The smart contracts basically govern the terms of the ownership and specify what the owner can and cannot do with the data. While slightly different from traditional ownership conveyances, this type of transfer is not a new concept; in 2015, the secret WuTang Clan album, *Once Upon a Time in Shaolin*, was contracted for sale for millions of dollars as a singular copy for the use and enjoyment of the purchaser without commercial distribution rights, though the purchaser was able, at his discretion, to tour the album at museums or galleries.[34] The point being, that art, in whatever form, is essentially a novelty and NFTs are just another approach to create a new kind of "art" ownership. Whether this approach stands the test of time remains to be seen, but for the time being, just recognizing the contractual nature of NFT ownership opposed to traditionally owned

[33] Benveniste, Alexis. "The First-Ever Tweet Sold as an NFT for $2.9 Million." CNN, Cable News Network, 23 Mar. 2021, www.cnn.com/2021/03/23/tech/jack-dorsey-nft-tweet-sold/index.html.

[34] Cox, Jamieson. "Wu-Tang Clan Sold the Single Copy of Its Secret Album for Millions of Dollars." The Verge, The Verge, 25 Nov. 2015, www.theverge.com/2015/11/25/9798952/wu-tang-clan-secret-album-sale-millions.

property is helpful from a planning perspective since the contract may dictate ownership duration, or legacy rights, or heirship instructions.

b. Digital Financial Assets after Death

Digital assets in general are often overlooked items that need to be addressed in an estate plan. While some digital assets have no value, like an email reminder to buy cat food, and some are purely sentimental in value, like your Facebook photo albums and old correspondences with grandparents, some have potential value like blogs, social media pages, websites, domains, etc. that can all be monetized depending on the content and owner, and some have actual value, like cryptocurrency. When it comes to managing and distributing these items after death, one of the primary concerns, as noted above, is access. As is the case with most issues in life, once of the easiest and most effective ways to alleviate accessibility complications would be to plan for them. One way would be to include specific instructions in your estate plan. This can be by specific bequest in your will, or instructions in a trust. Such directives should be specific and include how and/or where to access passwords, keys, and the like to access cryptocurrency and other digital assets. Unlike bank accounts, where a bank manager or customer service representative will reach out to inform an estate representative of the existence of an account, the decentralized nature of cryptocurrency does not allow for that kind of safeguard (unless of course a third-party exchange or wallet is involved). It should be cautioned that private keys should not be kept in a will given that a probated will is filed in public records, which would have a similar effect as publishing your bank account access information in public. So while the specific keys or passwords should not be included in a will (or trust, for similar reasons), the existence of digital assets, from monetized social media accounts, to cryptocurrency holdings, to digital wallets, should be clearly listed. A separate instruction sheet containing the private information that needs to be kept out of public records is another consideration worth exploring, but it should be cautioned that there may be valuation issues involved in multiple people having knowledge of or access to private keys, as discussed in further detail below.

Another aspect of post-mortem transfer would be that some exchanges have legacy provisions, similar to the way a POD/TOD bank account allows for beneficiary designations, which would keep the assets outside of probate altogether. It would be wise to check the specific terms of these transfers though, since beneficiaries would want to utilize possible advantages to foregoing automatic transfers and allowing digital assets to pass through probate, such as the stepped-up basis the heirs would receive for tax purposes because again, cryptocurrency is treated as property, not currency, by the IRS.

IV. PROBATE CONCERNS AND SOLUTIONS

a. Fiduciary Duties

A fairly grey area in estate administration is the application of the "prudent investor rule" to estates that hold or want to hold cryptocurrency. Trustees and other estate administrators that find themselves in a position that requires them to invest estate assets will have to make certain decisions about what investments to make. The 1994 Uniform Prudent Investor Act specifies a trustee's duties to manage trust assets, and while it does not specifically preclude holding cryptocurrency, many fiduciaries are averse to investing in or continuing to hold digital assets based on principals of risk and reward, given the historic volatility of cryptocurrency in general.[35] There is no hard-lined rule about what level of stability an investment must reach to be considered "prudent," but with growing prevalence in the market and increasing popularity among younger investors, at a certain point, even with reasonable sensitivity to the risk and reward principals, a prudent investor, in this case the trustee or administrator, may be keen to look to cryptocurrency and other digital assets as not just a legitimate investment option, but a prudent way to diversify their managed portfolios or estates.

[35] See generally Earthman.

In addition to waiting out volatility in hopes for a stabilized crypto market, one planning strategy an individual could employ would be to specifically direct their fiduciary, either directly in their will or trust, or by external memorandum, to invest or hold certain digital assets, thereby taking the ethical fiduciary duty associated with the risks in a volatile market out of the way.

b. Digital Privacy Issues

In conjunction with privacy considerations afforded by the 4th Amendment to the United State Constitution, the Digital Stored Communications Act ("SCA") effectively limits disclosure of internet service provider subscribers as well as the contents of digital communications, adding to the mounting list of difficulties that face estate administrators dealing with digital assets.[36] Slight headway was made in favor of fiduciaries with respect to the SCA in the case of Ajemian v. Yahoo, wherein the court ruled Yahoo was permitted to disclose the contents of a deceased user's email with consent of their estate representative pursuant to the terms of service the user agreed to when opening a Yahoo account.[37] This is relevant insofar as it means the contractual authority from third party terms of service is conferred to estate representatives, so third party holders of digital wallet keys and the like may be able to divulge otherwise confidential information to fiduciaries (assuming, of course, that the fiduciary knows where to look). This is likely the exception Coinbase and other exchange companies operate under in permitting legacy distributions in the event of a cryptocurrency account holder's death. Alternatively, with progressing blockchain technology, it is possible to have the smart contract designed in such a way that the asset automatically transfers to a beneficiary up on the death of the original holder, either by transferring the entirety of the wallet to that person, or by transferring a set amount of tokens or assets.

[36] See generally Earthman.
[37] Ajemian v. Yahoo!, Inc., 987 N.E.2d 604, 608 (Mass. App. Ct. 2013).

Additionally, in the same vein, the Computer Fraud and Abuse Act essentially holds that third party representatives can access a computer but not a hard drive. This is applicable to estate representatives because it basically directs cryptocurrency holders to store their passwords and keys on their computer rather than a hard drive to allow third party representatives access. This obviously is not always the most safe method of storage, since it may expose the asset to hacking or other computer-based vulnerabilities like viruses and file corruption, but it is still an alternative to consider.

c. Valuation Issues

Valuation is another major issue in estate administration since it is incumbent upon the administrator of an estate to inventory and value the estate assets. This is a relevant task when it comes to selling property and distributing shares to heirs and/or creditors and paying estate taxes. When it comes to cryptocurrency, volatility is always an issue. Market capitalization values fluctuate by millions of dollars hourly and the value of any particular crypto investment can fluctuate several hundred percent in an afternoon. Because the IRS treats cryptocurrency as property similarly to stocks, typically, value is only supposed to be measured as of the date of sale. But when and individual passes away, the cryptocurrency is valued as of the date of death, which is problematic given the wild volatility of some of these assets. For example, following yet another Elon Musk tweet on Twitter, Dogecoin jumped over 100 percent in value over the course of a 24-hour period on April 15, 2021; in a one year timeframe in grew around 12,000 percent[38] As of right now, there is no IRS guidance on how to treat that kind of volatility, because unlike the US Stock Exchange that opens and closes during weekdays, the cryptocurrency market is open twenty-four hours a day, seven days a week, making it difficult and a little confusing to really gauge a benchmark for date-of-

[38] Singh, Jagmeet. "Dogecoin Records Over 100 Percent Growth in a Day, Thanks to Elon Musk." NDTV Gadgets 360, Gadgets 360, 16 Apr. 2021, gadgets.ndtv.com/internet/news/dogecoin-price-rally-growth-record-all-time-high-elon-musk-tweet-support-2414988.

death valuation. While there does not seem to be a particularly good solution for this, because some smart contracts may permit date-of-death automatic transfers, such contracts are really the best way to have a solid valuation for the date of death.

Another problem in valuation is that if you leave the "keys" to a crypto wallet in trust or a will, it may affect the value of the currency those keys protect. As discussed above, unlike typical assets you can store in a safe deposit box, the nature of digital assets is that they are intangible. Even if the keys to a wallet are written on a piece of paper and stored in a safe-deposit box accessible by an executor, the issue is not entirely resolved. What if the executor resigns or is unable to continue with the estate administration? The executor now has personal knowledge of the keys, which means that person technically has that information stored in a mental wallet of sorts, and will forever "own" the digital asset protected by the keys. When you bring in multiple executors and alternate fiduciaries, you will potentially encounter a joint-tenancy type ownership arrangement, even though that is not the intent. But since you are not able to get new keys like you would with actual tangible keys, there is no changing the locks in this situation; anyone that has the keys has them forever. One solution to this is to direct the estate administrator or other fiduciary to transfer the key code (preferable safely hidden in a box or otherwise visually obscured from anyone's eyes but the beneficiary), directly to the beneficiary without ever seeing it. This may be possible with specific instructions made in advance for the administrator or trustee. Alternatively, another way to preserve the integrity of the digital assets would be for the beneficiary to open a new wallet upon receipt of the cryptocurrency and transfer the old wallet's holdings immediately; though such a solution does not exist for wallets held in trust long-term, making fiduciaries susceptible to a breach of duty in compromising the value of a wallet held in such a way. Again, the solution there would likely be to immediately sell the digital asset, unfortunately, and potentially reinvest in a way that the private keys are not accessible to anyone other than the intended beneficiaries of their respective values. But whether assets are held in a hot wallet or cold storage, or on a computer, or reduced to an encrypted USB drive, or written down on a piece of paper and locked in a box, once they are divulged to a third party, their value is arguable compromised.

V. CONCLUSION

The overall key to dealing with cryptocurrency and other digital assets in estate planning and probate is advanced planning for accessibility and distribution. Essentially, the age-old maxim, if you don't use it, you lose it, holds true; and millions of dollars in lost currency every year evidence that fact. These digital assets need to be actively monitored and their encryption keys looked after and planned for, or the inevitable outcome will be disastrous. Investments in cryptocurrency and other digital assets may be a risky relationship but as is the case with any good investment, where there is risk there is certainly a reward; it is just a matter of planning what to do with that reward to protect it for your future and your legacy.

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