
UNCLAIMED (UNOWNED) DIGITAL ASSETS: ADDRESSING
THE LEGAL IMPLICATIONS OF ABSENT OR UNKNOWN
OWNERSHIP

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As the virtual realm continues to grow, the variety of digital assets available has expanded exponentially. This presents a number of challenges, particularly when it comes to issues of ownership and intellectual property (IP) rights. In some cases, digital assets may be created or come into existence without an identifiable owner, or the owner may be missing or unknown. This can be a complicated issue, as there is currently no uniform determination of digital assets in the laws of different countries.

The most widely discussed example of an unclaimed digital asset is the dormant cryptowallet, which refers to a cryptocurrency wallet that has remained inactive for a prolonged period. It is estimated that millions of dollars' worth of cryptocurrencies are currently sitting in dormant wallets. However, there are several other examples of absent or unknown owners of digital assets. One example is a digital asset or access object created by an individual who has lost control over it or is no longer interested in it, and has not transferred ownership or IP rights to anyone else. Another example is a digital asset or access object created by a group of anonymous Decentralized Autonomous Organization (DAO) members or by a robot. In either of these cases, the ownership of the digital asset is considered absent or unknown.

The absence or unknown ownership of digital assets raises a number of legal questions and challenges. In the physical realm, there are legal concepts that allow for the acquisition of legal rights over unowned real property or property whose owner is unknown, such as escheat (the right

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of a government to take ownership of estate assets or unclaimed property), bona vacantia (things that are capable of being owned by an individual or company but are not owned by anyone), acquisitive prescription (the acquisition of ownership or other real rights through possession for a period of time), finder's rights (the right of a person who finds abandoned property to claim it by taking definite steps to show their claim), and more. For obvious reasons, these concepts may not be directly applicable to the virtual realm. It may be necessary to consider alternative approaches, such as the creation of new legal frameworks, or the adaptation of existing ones, in order to address the legal issues raised by digital assets in the absence of an owner.

The issue of absent or unknown ownership of digital assets is complex and multifaceted, requiring careful consideration of the various legal concepts and approaches that may be applicable. This paper explores these issues in greater depth, examining the potential solutions and challenges involved in ensuring the fair and legal treatment of digital assets in the absence of an owner.

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I. INTRODUCTION

In recent years, the rapid growth of digital technologies has led to the creation and proliferation of various forms of digital assets.¹ These assets include everything from digital currencies and “real estate” in metaverses to online identities and digital artwork.² Unlike physical assets, however, digital assets exist only in the virtual world, and their ownership and legal status can be difficult to define and enforce.³

¹ See Ben Chester Cheong, *Avatars in the Metaverse: Potential Legal Issues and Remedies*, 3 INT’L CYBERSECURITY L. REV. 467, 491 (2022).

² *Id.*

³ Robert J. Roby, *Intellectual Property in Virtual Worlds*, N.Y. L. J. (Mar. 27, 2023, 10:27 AM), <https://www.law.com/newyorklawjournal/2023/03/27/intellectual-property-in-virtual-worlds/?slreturn=20230801130743>.

One particularly convoluted issue that arises with digital assets is unclaimed ownership.⁴ Unclaimed digital assets may be created by anonymous groups or individuals, by a robot or artificial intelligence (AI). Also, they may be abandoned or forgotten by their original creators or owners on a third-party server or cloud.⁵ In such cases, it is sometimes difficult or impossible to determine who owns the digital asset and who has the legal right to use, transfer, or profit from it.⁶ The digital realm is not a new phenomenon, as it has been around for several decades.⁷ Since the advent of computers in the mid-twentieth century, humanity has created an enormous number of digital objects.⁸ Some of these digital objects are qualified as digital rights or digital assets.⁹ These assets include software, digital images, videos, music, and other digital creations.¹⁰

Over time, these digital assets have been stored on various media, including punched cards, diskettes, discs, servers, and clouds.¹¹ One can assume that during this time, many digital assets have been left unclaimed or forgotten. The imaginable reasons for this range from lost passwords and obsolete technology to the death of the creator or owner. While some of these digital assets may be valueless, others hold some financial or sentimental value.¹² Though digital assets are immaterial, the importance of ownership issues should not be underestimated. There should be someone who is responsible for deciding the destiny of each digital asset. This includes deciding whether to erase it, use it commercially, or preserve it for sentimental reasons. Additionally, whoever is responsible for a digital asset

⁴ Jon D'Amato, *Unclaimed Property in a Digital World*, FORBES (Apr. 6, 2022, 7:45 AM), <https://www.forbes.com/sites/forbesfinancecouncil/2022/04/06/unclaimed-property-in-a-digital-world/?sh=119c70d110e6>.

⁵ See, e.g., Bill Cass, *Don't Leave Digital Assets Behind in the Cloud*, PUTNAM WEALTH MGMT. (Feb. 9, 2022), <https://www.putnamwealthmanagement.com/dont-leave-digital-assets-behind-in-the-cloud> (explaining how digital assets may be “lost forever if individuals neglect to include them in their estate planning”).

⁶ See *id.*

⁷ Nathan Furr & Andrew Shipilov, *Digital Doesn't Have to Be Disruptive*, HARV. BUS. REV. (July–Aug. 2019), <https://hbr.org/2019/07/digital-doesnt-have-to-be-disruptive>.

⁸ Yuk Hui, *What Is a Digital Object?*, 43 METAPHILOSOPHY 380, 388–89 (2012).

⁹ *Digital Assets*, GARTNER, <https://www.gartner.com/en/finance/glossary/digital-assets> (last visited Dec. 12, 2023).

¹⁰ *Id.*

¹¹ Alexander An et al., *The Visual Story of Data Storage: From Storage Properties to User Interfaces*, 19 COMPUTATIONAL & STRUCTURAL BIOTECHNOLOGY J. 4904, 4905 (2021).

¹² Adam Steen et al., *Managing Digital Assets on Death and Disability: An Examination of the Determinants of Digital Asset Planning Literacy*, AUSTL. J. OF MGMT. (Feb. 28, 2023), <https://doi.org/10.1177/03128962231157005>.

should be liable for any expenses incurred and harm caused, such as carrying malware or viruses that can infect other systems.

The issue of unclaimed digital assets has become even more pressing in recent years due to the growing reliance on digital technology in every field of life and, consequently, the increasing volume of digital assets being created.¹³ The appearance of blockchain technology and its implications, such as non-fungible tokens (NFTs), cryptocurrencies, Decentralized Autonomous Organizations (DAOs), and advances in AI model development, has created many challenges and convoluted legal questions that need to be addressed.¹⁴

The lack of a clear legal framework for unclaimed digital assets can have serious implications for individuals and organizations. For example, online accounts with sensitive information left unclaimed can be vulnerable to hacking and identity theft, or the value of digital assets left unclaimed can be lost.¹⁵ Most existing legal frameworks either have limited regulation applicable to digital assets or do not cover this problem at all.¹⁶ In an attempt to resolve this complex problem, courts apply existing legal frameworks that are sometimes inadequate to address the unique challenges posed by digital assets.¹⁷

The objective of this article is to examine the legal implications of unclaimed digital assets and the challenges they pose, particularly when it comes to issues of ownership. The analysis of the applicability of existing legal concepts and approaches that are used for unowned assets in the digital realm will form the core of this research. The article will address specific problems that arise when attempting to apply conventional legal concepts and approaches to digital asset issues and will explore potential alternative solutions that may address these challenges.¹⁸ The initial

¹³ Saul J. Berman, *Digital Transformation: Opportunities to Create New Business Models*, 40 STRATEGY & LEADERSHIP 16, 16–17 (2012).

¹⁴ Gil Appel et al., *Generative AI has an Intellectual Property Problem*, HARV. BUS. REV. (Apr. 7, 2023), <https://hbr.org/2023/04/generative-ai-has-an-intellectual-property-problem>.

¹⁵ Brandon Atkins & Wilson Huang, *A Study of Social Engineering in Online Frauds*, 1 OPEN J. OF SOC. SCIS. 23, 26 (2013).

¹⁶ Tina van der Linden & Tina Shirazi, *Markets in Crypto-Assets Regulation: Does it Provide Legal Certainty and Increase Adoption of Crypto-Assets?*, 9 FIN. INNOVATION 1, 6–7 (2023).

¹⁷ Hester M. Peirce, Commissioner, SEC, Remarks before the Digital Assets at Duke Conference: Outdated (Jan. 20, 2023).

¹⁸ Unclaimed Intellectual Property (IP) rights, orphan digital art, and related topics, such as digital art objects created by Artificial Intelligence (AI), are significant areas within the realm of digital assets. However, these topics will not be comprehensively addressed within the scope of this paper. Unowned IP rights and orphan digital art involve complex legal and ethical

segment of this study establishes foundational insights regarding unclaimed digital assets. This involves defining and categorizing these assets, supported by an examination of existing examples. These initial observations lay the groundwork for a comprehensive understanding of the challenges posed by unclaimed digital assets.

The subsequent section introduces a systematic framework for classifying these assets. This classification system organizes assets based on their inherent attributes, thereby facilitating a structured analysis of their legal implications and challenges. The analysis then moves into the prevailing legal frameworks governing digital assets, both within domestic jurisdictions and on an international scale. The comparative analysis connects legal concepts across various jurisdictions and asset categories. By comparing unclaimed digital assets with unclaimed physical assets, unclaimed intellectual property rights, and other related legal phenomena, this phase unveils the intricate legal dynamics of the subject and elucidates potential regulatory approaches.

Subsequently, the research scrutinizes unclaimed digital assets from domestic and foreign legal perspectives, revealing complexities in ownership determination and regulatory challenges. The paper distills common patterns and themes that cut across legal approaches. Based on the research produced, a methodological framework is proposed for regulating unclaimed digital assets, providing a pattern for assessing the necessity and scope of regulatory interventions.

II. UNCLAIMED DIGITAL ASSETS: DEFINITION AND CLASSIFICATION

A. Definition of Unclaimed Digital Assets

The dynamic nature of digital assets, driven by the rapid emergence of new technologies and their constant evolution, poses a significant challenge for establishing precise and enduring legal or doctrinal definitions. The ever-changing landscape of digital assets makes any attempt to define unclaimed digital assets, as well as digital assets in general, prone to

considerations specific to IP law and the art world. Addressing these topics would require a separate and more specialized research effort. Nonetheless, the principles and approaches discussed in this research can provide valuable insights and serve as a foundation for further exploration of unclaimed IP rights and orphan digital art in future studies.

becoming outdated and ultimately, of limited practical value.¹⁹ However, for the purpose of this research, “unclaimed digital assets” refers to digital files, records, and online accounts that have been abandoned or left without a known owner. Included in this group of assets are all types of crypto assets, digital content such as music, videos, documents, databases, and software, as well as online accounts such as email, social media, and e-commerce accounts. Further, the term “unclaimed” refers to a situation where there is no known owner or the owner has abandoned the asset, leaving it in a state of limbo.

B. Examples of Unclaimed Digital Assets

To demonstrate the complexity and variety of unclaimed digital asset types, here are some illustrative examples.

1. Dormant Crypto Wallets

One of the most widely discussed and researched topics regarding unclaimed digital assets is lost crypto wallets.²⁰ Due to the nature of Bitcoin and other cryptocurrency, all responsibility for holding and securing the currency falls on the individual holder.²¹ There is no bank or private institution capable of restoring lost passwords to wallets.²² According to the *New York Times*, an estimated 20% of all Bitcoin currently in circulation (worth 18.5 million at the time of writing) is held in lost wallets.²³ That is one of the key factors in determining the value of the remaining Bitcoin.²⁴ These fortunes are lost the same way people lose email accounts or old photographs stored on computers: by forgetting passwords, software malfunctions, replacing defective hardware, among other ways.

¹⁹ Kristine Butterbaugh, *3 Ways Unclaimed Property Law Clashes with Virtual Currencies*, PAYMENTS J. (Sept. 8, 2021), <https://www.paymentsjournal.com/3-ways-unclaimed-property-law-clashes-with-virtual-currencies/>.

²⁰ Jean-Guillaume Dumas et al., *Blockchain Technology and Crypto-Assets Market Analysis: Vulnerabilities and Risk Assessment*, INT’L INST. OF INFORMATICS & SYSTEMATICS (Mar. 2021), <https://hal-lirmm.ccsd.cnrs.fr/LJK-MAD-CASC/hal-03112920v2>.

²¹ *What is Blockchain Security?*, INT’L BUS. MACHS., <https://www.ibm.com/topics/blockchain-security> (last visited Dec. 12, 2023).

²² See *Tens of Billions Worth of Bitcoin Have Been Locked by People Who Forgot Their Key*, N.Y. TIMES (Jan. 13, 2021), <https://www.nytimes.com/2021/01/13/business/tens-of-billions-worth-of-bitcoin-have-been-locked-by-people-who-forgot-their-key.html?smid=url-shar>.

²³ *Id.*

²⁴ Viktoria Croft, *How Much Money Is Lost Due to Forgotten Crypto Wallets*, LINKEDIN (Jan. 9, 2023), <https://www.linkedin.com/pulse/how-much-money-lost-due-forgotten-crypto-wallets-viktoria-croft/>.

There are several well-known examples of dormant wallets, including Satoshi Nakamoto's wallet, which holds an estimated 1.1 million Bitcoins.²⁵ This example may not be fully relevant, as it may be considered a stabilizing fund, so it is in use in some way. However, there are other examples of dormant wallets, like Stefan Thomas and James Howells, who both lost access to their Bitcoin wallets due to password issues and accidental disposal of hardware, respectively.²⁶ Stefan Thomas is a San Francisco software developer who jumped on the "Bitcoin hype train" in 2011 and acquired 7,002 Bitcoins.²⁷ He simply forgot the password to his wallet and found no way to recover it.²⁸ Similarly, a UK resident, James Howells, lost his 7,500 Bitcoin (BTC) in 2013 when he accidentally threw away an old laptop after "mistaking it for an obsolete one."²⁹ Reportedly, "James offered the Newport town council a 25% share of the contents of the wallet if he found the laptop after being given permission to search for it in a landfill."³⁰ He failed to get access, as it conflicted with licensing requirements and his search might have caused significant environmental damage to the area.³¹

The case of a crypto exchange QuadrigaCX is another example of a dormant crypto wallet.³² Gerald Cotten, a Canadian investor who founded QuadrigaCX in 2013, ran a risky and suspicious crypto exchange business

²⁵ Mehab Qureshi, *Satoshi Nakamoto Speculation Reignites As Dormant Bitcoin Wallet Containing Nearly \$30M Worth of Coins Awakens After 13 Years*, BENZINGA (Aug. 16, 2023, 8:22 AM), <https://www.benzinga.com/markets/cryptocurrency/23/08/33874281/satoshi-nakamoto-speculation-reignites-as-dormant-bitcoin-wallet-containing-nearly-30m-wor>; Rebekah Carter, *How Many Bitcoins Does Satoshi Nakamoto Have?*, BANKLESS TIMES (Feb. 16, 2023), <https://www.banklesstimes.com/how-many-bitcoins-does-satoshi-nakamoto-have/>.

²⁶ *Learn the Story of the Programmer Who Lost Millions in Bitcoin*, VANGUARD X (2023), <https://vanguard-x.com/blockchain/lost-millions-in-bitcoin/>; Joe Middleton, *Man Who Threw Away £150m in Bitcoin Hopes AI and Robot Dogs Will Get It Back*, GUARDIAN (Aug. 2, 2022), <https://www.theguardian.com/technology/2022/aug/02/man-hopes-ai-and-robot-dogs-will-help-recover-150m-in-bitcoin-from-landfill>.

²⁷ *Id.*; Michael Brown, *The Top 5 Biggest Lost Bitcoin Fortunes (That We Know About)*, CRYPTOVANTAGE (Feb. 28, 2023), <https://www.cryptovantage.com/news/the-top-5-biggest-lost-bitcoin-fortunes-that-we-know-about/>.

²⁸ Brown, *supra* note 27.

²⁹ *Id.*; Lianne Kolirin, *Man Who Accidentally Threw Out a Bitcoin Fortune Offers \$70 Million for Permission to Dig It Up*, CNN (Jan. 15, 2021, 9:59 AM), <https://www.cnn.com/2021/01/15/uk/bitcoin-trash-landfill-gbr-scli-intl/index.html>.

³⁰ Kolirin, *supra* note 29.

³¹ *Id.*

³² Jesse Coghlan, *\$1.7M in Bitcoin Tied to QuadrigaCX Reawakens After Years of Dormancy*, COINTELEGRAPH (Dec. 20, 2022), <https://cointelegraph.com/news/1-7m-of-bitcoin-tied-to-quadrigacx-reawakens-after-years-of-dormancy>.

with no official bank accounts or disclosures.³³ The Ontario Securities Commission (OSC) started investigating QuadrigaCX in 2019.³⁴ By 2016, Cotten had turned Quadriga into a one-man operation, firing all of the staff.³⁵ From 2013 to 2016, Cotten established a mechanism to generate his own digital tokens within the Quadriga ecosystem. In 2018, he married his longtime girlfriend, crafted a will bequeathing his ill-gotten gains from the Ponzi scheme to his wife, and was officially declared deceased by Indian medical authorities in December of that year (citing cardiac arrest stemming from complications associated with Crohn's disease).³⁶ His cryptographic access keys to his wealth were effectively lost with his passing.³⁷ There are rumors that he may have faked his death.³⁸ However, from a legal standpoint, this is an interesting case of a person legally inheriting crypto assets but being unable to control or access them.

These examples of dormant crypto assets widely discussed in society could be continued with the "Individual X" case, where a wallet containing 69,000 Bitcoins was allegedly controlled by hackers and many others.³⁹ However, dormant crypto wallets are only one implication of the legal challenges related to the complexity of unclaimed digital assets.

2. Descendant's Rights to Social Media and Cloud Storage Accounts

In his article, "The Social Afterlife," Andrew Gilden examines the legal, practical, and moral aspects of inheriting social network accounts.⁴⁰ He addresses the issue of surviving family members gaining access to their loved ones' digital accounts, particularly in cases where young people have died unexpectedly.⁴¹ While these family members would inherit all real,

³³ See Karen Zraick, *Crypto-Exchange Says It Can't Pay Investors Because Its C.E.O. Died, and He Had the Passwords*, N.Y. TIMES (Feb. 5, 2019), <https://www.nytimes.com/2019/02/05/business/quadriga-cx-gerald-cotten.html>; see also Tara Deschamps, *Crypto Exchange Quadriga Was a Fraud and Founder Was Running Ponzi Scheme, OSC Report Finds*, CAN. BROAD. CORP. (June 11, 2020, 1:03 PM), <https://www.cbc.ca/news/business/osc-quadriga-gerald-cotten-1.5607990>; Brown, *supra* note 27.

³⁴ *OSC Publishes Investigative Report of QuadrigaCX*, ONT. SEC. COMM'N (June 11, 2020), <https://www.osc.ca/en/news-events/news/osc-publishes-investigative-report-quadrigacx>.

³⁵ Brown, *supra* note 27.

³⁶ Deschamps, *supra* note 33.

³⁷ Brown, *supra* note 27.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ See generally Andrew Gilden, *The Social Afterlife*, 33 HARV. J. L. & TECH. 329 (2020).

⁴¹ *Id.* at 331–32.

personal, and intellectual property, they often need to obtain court orders to compel social media platforms to provide access to the content stored on their servers.⁴² Among many other examples, Gilden references the landmark case in Germany's Federal Court of Justice (BGH), where the court ruled that the parents of a fifteen-year-old girl killed by an underground train should be given complete access to her Facebook account as part of their inheritance.⁴³ The court stated that digital content should be treated just like physical assets such as books and letters.⁴⁴ An appeals court overturned the decision in 2017, ruling in favor of Facebook's claim that the German constitution, or Basic Law, entitles a person to data privacy even after their death.⁴⁵ However, the appellate decision was based on data privacy arguments and did not contradict the initial ruling in regards to the qualification of a Facebook account as an asset.⁴⁶

In 2017, the New York County Surrogate's Court heard a similar case.⁴⁷ The decedent, Ric Swezey, passed away at the age of forty-five.⁴⁸ According to his will, his personal property was left to his spouse, along with the residuary estate.⁴⁹ Nicholas Scandalios, in his capacity as executor of the estate, claimed that the decedent was an "avid photographer" who used both a digital camera and iPhone to take family and artistic photographs that he stored in his Apple account, as they often used the Apple system to make holiday cards and view photographs together on the decedent's computer.⁵⁰ There was no express authorization in the will for the executor to access the decedent's digital assets, and no other documents provided proof of such access.⁵¹ Petitioner, however, alleged that he and

⁴² *Id.* at 332.

⁴³ *Id.* at 365 n.219; Jenny Gesley, *Germany: Federal Court of Justice Rules Digital Social Media Accounts Inheritable*, LIBR. OF CONG. (Sept. 7, 2018), <https://www.loc.gov/item/global-legal-monitor/2018-09-07/germany-federal-court-of-justice-rules-digital-social-media-accounts-inheritable/>.

⁴⁴ Gesley, *supra* note 43.

⁴⁵ *German Court Says Parents Can Inherit Facebook Data*, DIGIT. WORLD (July 12, 2018), <https://www.dw.com/en/facebook-court-rules-parents-have-rights-to-dead-daughters-account/a-44642230>.

⁴⁶ See Aleksandra Lisicka, *Are Parents Entitled to Access the Facebook Account of a Deceased Child?*, NEWTECH.LAW (Oct. 13, 2017), <https://newtech.law/en/are-parents-entitled-access-the-facebook-account-of-a-deceased-child/>.

⁴⁷ See *In re Scandalios*, No. 2017-2976/A, 2019 WL 266570, at *1 (N.Y. Sur. Ct. Jan. 14, 2019).

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.* at *2.

the decedent had given each other implicit consent to access their digital assets, as their computers were adjacent to each other in their home office and there was no effort to shield their access to digital assets from one another.⁵² The court ruling states that in this digital age, a decedent's digital assets must be included as part of their property.⁵³ The court further noted that Article 13-A of the Estates, Powers and Trusts Law of New York applies "traditional laws governing fiduciaries to this 'new type of property' and authorize fiduciaries to 'gain access to, manage, distribute and copy or delete digital assets.'"⁵⁴ Digital assets are "electronic record[s] in which an individual has a right or interest," including "electronic communications and other digital assets that are not electronic communications."⁵⁵ Based on the findings of the court, the decedent's photographs stored in his Apple account did not qualify as "electronic communications," and Apple was required to disclose them to the fiduciary of the decedent's estate and afford the petitioner the opportunity to reset the password to the decedent's Apple ID.⁵⁶

3. Unclaimed Online Gaming Assets

Under § 102(10) of the Revised Uniform Unclaimed Property Act (RUUPA), game-related digital content are exclusively elements of the games to which they apply, are not transferable and hold no value outside of the game.⁵⁷ However the discussion on whether game objects can be deemed legal assets is ongoing.

In various court cases, users of online casinos successfully argued that virtual chips used for gaming and received as rewards qualify as a "thing of value" under relevant state laws, subjecting them to regulation akin to other legal assets. In *Kater v. Churchill Downs Inc.*, the court held that, as virtual chips extended the privilege of gameplay, they constituted a "thing of value" under Washington law.⁵⁸ There are, however, cases that highlight court opinions wherein items in online games may not be considered assets or things of value under certain legal frameworks.⁵⁹

⁵² *Id.*

⁵³ *Id.*

⁵⁴ *Id.*; Edward Baker & Farrell Fritz, *Death and Digital Content: Protecting Digital Assets After the Death of a User*, JD SUPRA (Mar. 29, 2019), <https://www.jdsupra.com/legalnews/death-and-digital-content-protecting-99053/>.

⁵⁵ Scandalios, 2019 WL 266570, at *3.

⁵⁶ *Id.*

⁵⁷ See REVISED UNIF. UNCLAIMED PROP. ACT § 102(10) (UNIF. L. COMM'N 2016).

⁵⁸ *Kater v. Churchill Downs Inc.*, 886 F.3d 784, 787 (9th Cir. 2018).

⁵⁹ See, e.g., *Soto v. Sky Union, LLC*, 159 F. Supp. 3d 871 (N.D. Ill. 2016).

In *Bragg v. Linden Research*, gamers in a massively multiplayer online role-playing game sued the operator of the game claiming that the operator expropriated his property by nullifying a transaction completed by the participant and freezing his account.⁶⁰ In a series of litigations instigated by Erik Estavillo, a notorious gamer and suitor, he attempted to challenge the blockage of his access to gaming platforms, asserting that it resulted in various harms.⁶¹ Although he lost access to the platforms due to violations of platform policies, this loss extended beyond the mere opportunity to game. He also faced the forfeiture of his accounts, which held emotional value for him, along with all the virtual assets he had accumulated within the platform.⁶² There are other cases illustrating the complex legal nature of virtual assets in video games, including *Mason v. Machine Zone, Inc.*⁶³ and *MDY Industries, LLC v. Blizzard Entertainment, Inc.*⁶⁴ Though these cases are not directly related to abandoned game objects, the presented claims raise important questions about the status of unclaimed virtual game assets. If game objects are considered assets, then game developers may have fiduciary duties to guard such virtual assets in custody, among other legal consequences.

4. Digital Assets of Dissolved Companies

In 2018, a cantonal court in Zug, Switzerland forced the closure of a cryptocurrency mining firm, Envion AG, for an allegedly unauthorized Initial Coin Offering (ICO).⁶⁵ The case involved a dispute over the ownership and distribution of mining rewards earned through a complex system of mobile crypto-mining units.⁶⁶ Envion AG had developed a system for mining cryptocurrencies using mobile units powered by renewable

⁶⁰ 487 F. Supp. 2d 593, 597 (E.D. Pa. 2007) (raising novel issue of a dispute regarding a virtual parcel of land).

⁶¹ See *Estavillo v. Behaviour Interactive*, No. 19-cv-01025, 2019 WL 2635538, at *1 (N.D. Cal. June 27, 2019), *Estavillo v. Sony Comput. Ent. Am.*, No. C-09-03007, 2009 WL 3072887, at *1 (N.D. Cal. Sept. 22, 2009).

⁶² *Estavillo v. Blizzard Ent., Inc.*, No. 19-cv-05540, 2019 WL 6612061, at *1 (N.D. Cal. Dec. 5, 2019).

⁶³ 851 F.3d 315, 319–20 (4th Cir. 2017) (seeking to recover movies lost in virtual game under Maryland's gambling loss recovery statute).

⁶⁴ 629 F.3d 928, 935–37 (9th Cir. 2010) (dealing with a copyright infringement for World of Warcraft, an online role-playing game).

⁶⁵ Ana Alexandre, *Report: Zug Court Shuts Down Swiss Off-Grid Mining Firm Envion AG*, COINTELEGRAPH (Nov. 29, 2018), <https://cointelegraph.com/news/report-zug-court-shuts-down-swiss-off-grid-mining-firm-envion-ag>.

⁶⁶ *Id.*

energy sources.⁶⁷ The company conducted an ICO to raise funds to develop and deploy these mobile mining units.⁶⁸ A dispute arose between the co-founders of Envion AG, Michael Luckow and Matthias Woestmann, regarding the ownership and distribution of mining rewards earned by the mobile units.⁶⁹ Luckow and Woestmann accused each other of fraudulent and other illicit activity.⁷⁰

Though the court ruled that the ICO had been conducted without proper authorization and ordered the company to be liquidated, the distribution of the mining rewards remained unclear as both Luckow and Woestmann claimed ownership.⁷¹ The case raised questions about whether such rewards are owned by the company or by the individual employees who did the actual mining work, and whether they can be transferred or sold to third parties.⁷² The court ultimately ruled that the rewards belonged to the company as a whole and could be distributed to creditors in the liquidation process.⁷³ This example perfectly illustrates the issues related to digital assets that can become unclaimed under a company's dissolution through bankruptcy and voluntary or administrative liquidation.

C. *Classifying Unclaimed Digital Assets*

As demonstrated above, there are numerous examples of unclaimed digital assets that vary based on the type of digital asset, their form of creation or appearance, the type of owners, and other criteria. A one-size-fits-all approach to address the legal issues of unclaimed digital assets may not be effective. The formation of a legal framework for these assets must consider the specific nature of each type of asset and the challenges associated

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ Matthew Allen, *Switzerland Tarred by Fresh Crypto Scandal*, SWI (May 18, 2018), https://www.swissinfo.ch/eng/business/berlin-bust-up_switzerland-tarred-by-fresh-crypto-scandal/44129326.

⁷¹ See Alexandre, *supra* note 65.

⁷² See *Envion Liquidation – The Trail of Money and the Missing Millions*, ENVIONWATCH (June 30, 2020), <https://envionwatch.wordpress.com/2020/06/30/envion-liquidation-the-trail-of-money-and-the-missing-millions>.

⁷³ *Following the Liquidation Decision of the Bankruptcy Court of Zug – What Do Evion ICO and EVN Tokenholder Investors Need to Do to Have Their Claims Recognized in the Liquidation Process?*, LEXOLOGY (Jan. 28, 2019), <https://www.lexology.com/library/detail.aspx?g=d3884dbe-2e0c-4147-9d78-e6f7b5ace882>.

with it.⁷⁴ This requires a nuanced and adaptable legal approach that can evolve with the changing nature of digital assets and their ownership structures. This article proposes several classifications that can be used to develop a legal framework for addressing the issue of unclaimed digital assets.

Based on the types and nature of digital assets that may be unclaimed or have unknown ownership status, this research elaborates the following classifications:

1. Dormant Crypto Wallets

Digital wallets that contain cryptocurrency or NFTs but have been inactive for a long period of time, and the owner is unknown or has not accessed them.

2. Abandoned Digital Accounts

Social media, email, and other online accounts that have not been accessed or updated for an extended period of time, and the owner may be unknown or deceased.⁷⁵

3. Unclaimed Intellectual Property (IP) Rights

Patents, copyrights, trademarks, and other forms of digital IP that are not being used or claimed by the rightful owner.⁷⁶ The term “unused” helps convey the idea that the IP is available for potential use but is currently not in active use. It also indicates that IP rights exist but are not being exercised, whether intentionally or unintentionally, by the rightful owner. Yet, “unused” does not imply that the IP rights are free for anyone to utilize without proper authorization. Therefore, when discussing IP that is not being used or claimed by the rightful owner, the term “unused” more accurately describes the state of the IP, highlighting its availability but lack of current utilization. Consequently, as this research primarily focuses on explicitly unclaimed assets, these unused IP rights will not be fully addressed within its scope.

⁷⁴ *Technical Line: Accounting for Digital Assets, Including Crypto Assets*, ERNST & YOUNG LLP 3 (June 30, 2022), https://assets.ey.com/content/dam/ey-sites/ey-com/en_us/topics/assurance/accountinglink/ey-tl16494-221us-06-30-2022.pdf.

⁷⁵ Monica Webster, *Forgotten Passwords and Abandoned Accounts. Why Is This a Problem?*, NORDPASS (Sept. 29, 2020), <https://nordpass.com/blog/abandoned-accounts-security-risk/>.

⁷⁶ See generally James Yang, *Four Types of Intellectual Property to Protect Your Idea and How to Use Them*, OC PAT. LAW. (Jan. 19, 2022), <https://ocpatentlawyer.com/four-types-intellectual-property-protect-idea/>.

4. Abandoned or Forgotten Photos, Video, Music and Software

Digital photos, videos, music, and other files that have been abandoned or forgotten by the owner, and may not have any clear legal ownership status.⁷⁷

5. Ownership Rights to Decentralized Autonomous Organizations (DAOs)

Entities managed by smart contracts on a blockchain, and their ownership and control may be unclear or disputed.⁷⁸

6. Unowned Digital Art, Collectibles, and Abandoned Objects Inside Metaverse

Within immersive virtual environments, users can encounter a wide range of digital assets, including digital art, virtual real estate, in-game items, and various collectibles.⁷⁹ These assets possess inherent value and contribute to the vibrant economies within metaverses. However, what sets these assets apart is their uncertain ownership and transferability. While they hold value and can be highly sought after by users, they may lack clear documentation of ownership or established mechanisms for transferring ownership rights. This can create challenges when determining the rightful owner or establishing the legal framework for their exchange.⁸⁰

D. Reasons for Unclaimed Digital Assets

Below are possible categories based on the reasons why digital assets are unowned or unclaimed.

⁷⁷ See generally *How to Protect Your Digital Assets with an Estate Plan*, LEGACY ASSURANCE PLAN (May 26, 2023), <https://legacyassuranceplan.com/articles/estate-maintenance/protect-digital-assets-with-estate-plan>.

⁷⁸ See Nathan Reiff, *Decentralized Autonomous Organization (DAO): Definition, Purpose, and Example*, INVESTOPEDIA, <https://www.investopedia.com/tech/what-dao/> (Sept. 20, 2023).

⁷⁹ See Oğuzhan Öztürk, *An Introduction to Metaverse NFTs*, BUILT IN (Feb. 21, 2023), <https://builtin.com/blockchain/metaverse-nft>.

⁸⁰ Anthony Georgiades, *Your Rights in the Metaverse: The Benefits and Challenges of Collaborating in the Digital Age*, COINTELEGRAPH (Aug. 15, 2023), <https://cointelegraph.com/innovation-circle/your-rights-in-the-metaverse-the-benefits-and-challenges-of-collaborating-in-the-digital-age>.

1. Abandoned Digital Asset

Digital assets that were created or acquired by an individual or organization, but the owner lost interest in them or has been unable to maintain control over them.⁸¹

2. Forgotten Digital Asset

Digital assets that were created or acquired by an individual or organization, but the owner forgot about them or lost access to them (e.g., lost passwords or other login credentials).⁸²

3. Digital Assets of Deceased Individuals or Dissolved Legal Entities

Digital assets that were owned by an individual who has passed away, and their ownership is unclear or disputed.⁸³

4. Digital Assets Created By Unknown or Anonymous Individual

Digital assets whose ownership is unclear or unknown, such as those created by or within anonymous DAOs or robots.⁸⁴

5. Digital Assets Created by AI

Digital assets created by a computer program capable of replicating or simulating human-like cognitive functions, enabling them to perform tasks that typically require human intelligence.⁸⁵

⁸¹ See D'Amato, *supra* note 4.

⁸² See Nathaniel Popper, *Lost Passwords Lock Millionaires Out of Their Bitcoin Fortunes*, N.Y. TIMES (Jan. 12, 2021), <https://www.nytimes.com/2021/01/12/technology/bitcoin-passwords-wallets-fortunes.html>.

⁸³ See, e.g., Abraham Bell & Gideon Parchomovsky, *Of Property and Information*, 116 COLUM. L. REV. 1, 16, 29 (2023).

⁸⁴ *Id.* at 32.

⁸⁵ See Alycia S. Tulloch, *Copyright Office Ruling Exposes Artificial Intelligence and NFT Issues*, FRANKFURT KURNIT KLEIN & SELZ PC (Mar. 4, 2022), <https://ipandmedialaw.fkks.com/post/102hk15/copyright-office-ruling-exposes-artificial-intelligence-and-nft-issues>.

6. Stolen or Illegally Obtained Digital Assets

Digital assets that were obtained through theft, fraud, or other illegal means, and their ownership is unclear or disputed.⁸⁶

7. Digital Assets Created Through Mining or Staking

Digital assets that were created through mining or staking processes, and their ownership may be unclear or disputed due to the anonymous nature of these processes.⁸⁷

Another useful way to approach the issue of unclaimed digital assets classification is to distinguish between two categories: *unowned* digital assets and *unclaimed* digital assets. Unowned digital assets are those that someone believes to be theirs, but has no technical access to due to barriers such as passwords or private keys.⁸⁸ On the other hand, unclaimed digital assets are those that are forgotten, abandoned, or no longer needed by their rightful owners.⁸⁹

III. LEGAL IMPLICATIONS OF UNCLAIMED DIGITAL ASSETS

A. Current Legal Frameworks for Digital Assets

The emergence of digital assets has posed a significant challenge to traditional legal frameworks worldwide. The legal determinations of digital assets vary across countries, with the U.S. being one of the leaders in creating regulatory frameworks to manage the use and trade of digital assets.⁹⁰ In this analysis, the current legal frameworks for digital assets will be reviewed, touching on the existing approaches to types of digital assets and their legal determinations both inside and outside the U.S., currently and

⁸⁶ Cf. Xiaoqi Li et al., *A Survey on the Security of Blockchain Systems*, 107 FUTURE GENERATION COMPUT. SYS. 841, 841–45 (2020).

⁸⁷ *Bitcoin Privacy and Anonymity*, RIVER (2023), <https://river.com/learn/bitcoin-privacy-and-anonymity/>.

⁸⁸ See *Protecting Your Digital Assets*, KIECKER L. (Nov. 1, 2020), <https://kieckerlaw.com/protecting-your-digital-assets/>.

⁸⁹ See generally REVISED UNIF. UNCLAIMED PROP. ACT (UNIF. L. COMM'N 2016).

⁹⁰ *FACT SHEET: White House Releases First-Ever Comprehensive Framework for Responsible Development of Digital Assets*, WHITE HOUSE (Sept. 16, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/16/fact-sheet-white-house-releases-first-ever-comprehensive-framework-for-responsible-development-of-digital-assets/>; Adam Goldberg et al., *How Are Digital Assets Regulated in the United States and Elsewhere?*, PILLSBURY L. (Jan. 17, 2023), <https://www.pillsburylaw.com/en/news-and-insights/digital-assets-regulated-us-elsewhere.html>.

prospectively. This will lead to a more accurate understanding of the unclaimed digital assets topic.

The definitions of digital assets can vary depending on the perspective, context, and function of the asset. Different fields, such as law, finance, and technology, may define digital assets differently based on their particular concerns and objectives, and they may not always be consistent with one another.⁹¹ For example, the U.S. Internal Revenue Service (IRS) defines digital assets as any digital representation of value which is recorded on a cryptographically secured distributed ledger or any similar technology.⁹² According to the Financial Action Task Force (FATF), a “virtual asset” is “any digital representation of value that can be digitally traded, transferred or used for payment.”⁹³ The National Institute of Standards and Technology (NIST) defines “digital asset” as “any asset that is purely digital, or is a digital representation of a physical asset.”⁹⁴

More commonly in the US, the legal status of digital assets is determined by the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC).⁹⁵ If a digital asset is classified as a security by the SEC, it may be subject to registration and reporting requirements under federal securities laws.⁹⁶ The CFTC, on the other hand, considers cryptocurrencies as commodities, which should be subject to regulation under the Commodity Exchange Act.⁹⁷ The Howey test applies here, in which it is used to determine whether an asset is a security under U.S. law.⁹⁸ The test was established by the Supreme Court in

⁹¹ See, e.g., *Digital Assets*, I.R.S., <https://www.irs.gov/businesses/small-businesses-self-employed/digital-assets> (last visited Dec. 12, 2023); *Virtual Assets*, FIN. ACTION TASK FORCE, <https://www.fatf-gafi.org/en/topics/virtual-assets.html> (last visited Dec. 12, 2023); Dylan Yaga et al., *Blockchain Technology Overview*, NAT'L INST. OF STANDARDS & TECH. iv–v (Oct. 2018), <https://nvlpubs.nist.gov/nistpubs/ir/2018/NIST.IR.8202.pdf>.

⁹² *Digital Assets*, *supra* note 91.

⁹³ *Virtual Assets*, *supra* note 91.

⁹⁴ Yaga et al., *supra* note 91, at 51.

⁹⁵ Tyler Passarella, *Regulation of Digital Assets in the United States of America*, TOKENIZER (June 6, 2023), <https://thetokenizer.io/2023/06/06/regulation-of-digital-assets-in-the-united-states-of-america/>.

⁹⁶ *Id.*; *Framework for “Investment Contract” Analysis of Digital Assets*, SEC, <https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets> (Mar. 8, 2023).

⁹⁷ See Paul Kiernan, *CFTC Chair Asks Congress for Authority to Regulate Some Cryptocurrencies*, WALL ST. J. (Feb. 9, 2022, 4:31 PM), https://www.wsj.com/articles/cftc-chair-to-testify-on-cryptocurrencies-as-congress-weighs-legislation-11644414710?reflink=desktopwebshare_permalink.

⁹⁸ *Framework for “Investment Contract” Analysis of Digital Assets*, *supra* note 96.

*Securities Exchange Commission v. W.J. Howey Co.*⁹⁹ in 1946 and has recently been used to determine whether certain digital assets, such as cryptocurrencies and tokens, qualify as securities under U.S. law.¹⁰⁰ The relevance of the IRS, SEC, and CFTC's definition of digital assets lies in the fact that it can determine the regulatory framework under which they fall based on their functionality.

Individual states in the U.S. also have their own laws and regulations related to digital assets. Wyoming¹⁰¹ and Texas¹⁰² have been particularly proactive in creating regulatory frameworks for digital assets in recent years, while others are still developing their approaches.¹⁰³

Outside of the U.S., the legal frameworks for digital assets also vary widely. Some countries, like Japan,¹⁰⁴ Estonia,¹⁰⁵ and Switzerland,¹⁰⁶ have taken a relatively friendly approach to digital assets by creating clear regulatory frameworks and guidelines for businesses and investors.¹⁰⁷ Other countries, like China¹⁰⁸ and India,¹⁰⁹ have taken a more restrictive approach with outright bans on certain types of digital assets or activities related to them. Below are examples of existing approaches to legal definitions of digital assets in various countries.

⁹⁹ 328 U.S. 293, 294 (1946).

¹⁰⁰ *Framework for "Investment Contract" Analysis of Digital Assets*, *supra* note 96.

¹⁰¹ WYO. STAT. ANN. §§ 34-29-101–34-29-105, 34.1-1-210 (2019).

¹⁰² TEX. EST. CODE § 2001.051 (2017); Gerry W. Beyer, *Digital Assets: The Basics of Cyber-space Estate Planning*, 81 TEX. B.J. 342, 342 (2018).

¹⁰³ Goldberg et al., *supra* note 90.

¹⁰⁴ See Hiroki Habuka, *Japan's Approach to AI Regulation and Its Impact on the 2023 G7 Presidency*, CTR. FOR STRATEGIES & INT'L STUD. (Feb. 14, 2023), <https://www.csis.org/analysis/japans-approach-ai-regulation-and-its-impact-2023-g7-presidency>.

¹⁰⁵ See Marten Kaevats, *How to Build Digital Public Infrastructure: 7 Lessons from Estonia*, WORLD ECON. F. (Oct. 4, 2021), <https://www.weforum.org/agenda/2021/10/how-to-build-digital-public-infrastructure-estonia/>.

¹⁰⁶ Günther Dobrauz, *The Rules of the Game for Activities in Digital Assets in Switzerland*, PRICEWATERHOUSECOOPERS (Feb. 21, 2021), <https://www.pwc.ch/en/insights/fs/rules-of-games-for-activities-in-digital-assets-switzerland.html>.

¹⁰⁷ See *supra* text accompanying notes 106–08; see also *infra* text accompanying notes 110–21.

¹⁰⁸ Francis Shin, *What's Behind China's Cryptocurrency Ban?*, WORLD ECON. F. (Jan. 31, 2022), <https://www.weforum.org/agenda/2022/01/what-s-behind-china-s-cryptocurrency-ban/>.

¹⁰⁹ *Indian Government Set to Ban Cryptocurrencies*, BBC NEWS (Nov. 24, 2021), <https://www.bbc.com/news/technology-59402310>; Victoria Vergolina, *India's Route: Crypto Regulation Through Taxation*, BLOOMBERG (July 8, 2022, 5:00 AM), <https://www.bloomberg.com/news/articles/2022-07-08/india-s-route-is-crypto-regulation-through-taxation#xj4y7vzkg>.

In Estonia, the legal definition of digital currency is provided in the amendments to the Money Laundering and Terrorist Financing Prevention Act (MLTFPA), which came into effect on March 10, 2020.¹¹⁰ Virtual currencies are defined as a digital representation of value that can be digitally transferred, stored, or traded and is accepted by natural or legal persons as a payment instrument or investment.¹¹¹ While virtual currencies can be used as a medium of exchange, they are not considered legal tender.¹¹²

On June 18, 2021, the Federal Council of Switzerland brought the Federal Act on the Adaptation of Federal Law to Developments in Distributed Ledger Technology fully into force as of 2021.¹¹³ This act separated digital assets created with the use of blockchain technology from the rest of digital assets.¹¹⁴ The crypto-based assets (*kriptobasierte Vermögenswerte*) are determined as assets that, pursuant to the intention of the originator or issuer, were issued with a primary intention to substantially serve as a payment instrument for money or value transfers.¹¹⁵

In Japan, digital assets are defined differently depending on the relevant legislation.¹¹⁶ There is no general definition of digital assets in Japanese law, but the Payment Services Act (PSA)¹¹⁷ and the Financial Instruments and Exchange Act (FIEA)¹¹⁸ define certain types of digital assets. However, non-fungible tokens (NFT) and stable coins are not necessarily covered by these definitions. The PSA provides an exhaustive definition of crypto assets, which are divided into two types.¹¹⁹ Type I crypto assets are defined as property value that can be used for purchasing goods or

¹¹⁰ See Money Laundering and Terrorist Financing Prevention Act, ch. 1.2, § 3(9) (Riigi Teataja 2023) (Est.).

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ OBLIGATIONENRECHT [OR], [CODE OF OBLIGATIONS], Jan. 31, 2021, SR 220, RS 220 (Switz.).

¹¹⁴ See *id.* See also *Legal Framework for Distributed Ledger Technology and Blockchain in Switzerland: An Overview with a Focus on the Financial Sector*, FED. COUNCIL SWITZ. 17-21 (Dec. 14, 2018), <https://www.newsd.admin.ch/newsd/message/attachments/55153.pdf>.

¹¹⁵ *Blockchain/DLT*, FED. COUNCIL SWITZ., https://www.sif.admin.ch/sif/de/home/finanzmarktpolitik/digit_finanzsektor/blockchain.html (Sept. 20, 2023).

¹¹⁶ *E.g.*, Payment Services Act, ch. 1, art. 2(5) (2009) (Japan), <https://www.japaneselawtranslation.go.jp/en/laws/view/3078/en>.

¹¹⁷ *Id.*

¹¹⁸ *E.g.*, Financial Instruments and Exchange Act, ch. 2, art. 2. (2009) (Japan), https://www.japaneselawtranslation.go.jp/en/laws/view/4405#je_ch1at2.

¹¹⁹ See Payment Services Act, ch. 1, art. 2(5) (2009) (Japan), <https://www.japaneselawtranslation.go.jp/en/laws/view/3078/en>.

services, purchased from and sold to unspecified persons acting as a counterparty, and transferred electronically.¹²⁰ Type II crypto assets are property values that can be mutually exchanged with Type I crypto assets with unspecified persons acting as a counterparty and transferred electronically.¹²¹ Currency denominated assets and electronically recorded transfer rights as defined in the FIEA are explicitly excluded from the definition of crypto assets.¹²²

The regulatory landscape for digital assets varies widely around the world, with no uniform approach even to the legal definition of what constitutes a digital asset. While some countries have enacted specific regulations or laws that apply to certain types of digital assets, other jurisdictions have laws that apply to all digital assets. As previously discussed, many countries address only some types of digital assets in their regulations. This article, which focuses on unclaimed (unowned) digital assets, takes a broad view of digital assets that are not limited by features such as blockchain technology or being a means of exchange.

B. Existing Legal Frameworks for Unclaimed Assets

1. Existing Unclaimed Assets Regulation in the U.S.

The regulation of unclaimed property in the U.S. is a complex interdisciplinary area of law that touches on numerous legal issues, such as property ownership, financial regulation, human rights protection, and consumer protection. This paper uses the definition of unclaimed property as proposed by the Revised Uniform Unclaimed Property Act (RUUPA): “Unclaimed property” means property that is presumed abandoned and subject to custody as unclaimed property and includes property that has remained unclaimed by the owner for the period specified by the Act.¹²³ The term “unclaimed property” refers to any assets that have been left dormant by their owner, including bank accounts, stocks, bonds, and other

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² *Japan and Cryptocurrency*, FREEMAN L., <https://freemanlaw.com/cryptocurrency/japan/> (last visited Dec. 12, 2023).

¹²³ REV. UNIF. UNCLAIMED PROP. ACT § 201 (UNIF. L. COMM’N 2016).

financial instruments.¹²⁴ The regulation of unclaimed property in the U.S. is primarily governed by state law, with each state having its own set of rules and regulations. While RUUPA also applies to companies incorporated under federal law, such as national banks, federal credit unions, and savings associations,¹²⁵ there are also federal statutes that regulate the disposition of unclaimed property. Among other provisions, these statutes prohibit these companies from using the unclaimed property for their own purposes and require them to maintain adequate records to ensure compliance with the law.¹²⁶

Other examples include rights and responsibilities of federal corporations and agencies. The Federal Deposit Insurance Corporation (FDIC) is responsible for administering the Federal Deposit Insurance Act (FDIA), which also includes provisions related to unclaimed deposits held by insured banks.¹²⁷ The National Credit Union Administration (NCUA) similarly administers the Federal Credit Union Act (FCUA), which regulates unclaimed funds held by credit unions.¹²⁸ The Securities and Exchange Commission (SEC) also plays a role in the regulation of unclaimed property in the context of securities.¹²⁹ Under Rule 17Ad-17, brokers and dealers are required to make a good faith effort to notify customers of unclaimed property in their possession, and to transfer the property to the relevant state if the property remains unclaimed after a certain period of time.¹³⁰ The SEC rules also apply to the reporting and payment of unclaimed dividends and other securities-related assets.¹³¹

The main purpose of regulating unclaimed property is to protect the interests of the owners of such assets, and to ensure that they are not lost or forgotten over time.¹³² To this end, states have enacted laws requiring financial institutions and other businesses to report any unclaimed property they hold to the state, and to make efforts to locate the owners of these assets.¹³³ The Uniform Unclaimed Property Act (UUPA), first promulgated in 1954 by the Uniform Law Commission and amended in 1966, 1981, and 1995, has been adopted by the majority of states and is one of

¹²⁴ *Id.*

¹²⁵ REV. UNIF. UNCLAIMED PROP. ACT § 102(4) (UNIF. L. COMM'N 2016).

¹²⁶ *See, e.g.*, 12 U.S.C. §§ 216b, 1787(o), 1820(f), 1822(e), 1829b.

¹²⁷ Federal Deposit Insurance Act, 12 U.S.C. §§ 1811–1835.

¹²⁸ Federal Credit Union Act, 12 U.S.C. §§ 1751–1795.

¹²⁹ *See* 17 C.F.R. § 240.17Ad-17 (2023).

¹³⁰ *Id.*

¹³¹ *See id.*

¹³² *See* REVISED UNIF. UNCLAIMED PROP. ACT, prefatory note at 1–4 (UNIF. L. COMM'N 2016).

¹³³ *Id.* at 3.

the most significant pieces of legislation in the U.S. in this area.¹³⁴ The Revised Uniform Unclaimed Property Act (RUUPA) is the latest version of the UUPA most recently amended in 2016¹³⁵ and has been adopted in various forms by most states.¹³⁶ The UUPA sets out guidelines for how businesses should report unclaimed property to the state, as well as how the state should go about locating the owners of these assets.¹³⁷

2. Unclaimed Property Regulation in the European Union

The issue of unclaimed property is obviously not unique to the U.S., and many countries have developed rules to manage the issue. For example, Luxembourg has developed a framework to harmonize the regulations on unclaimed property.¹³⁸ However, this framework only applies to bank accounts, safe deposit boxes, and certain insurance policies.¹³⁹ It was made by means of the Bill of Law No. 7348 which aims to provide consumers with greater protection and easier access to their bank accounts.¹⁴⁰

The regulations concerning other types of assets vary significantly across member states of the European Union (EU). Most EU countries rely on the principles of Roman law to regulate unclaimed property.¹⁴¹ Even countries that traditionally belong to the common law family also use Roman doctrine at least fragmentarily.¹⁴²

Ireland, which generally operates under the common law system, has a remarkable law for unclaimed property called the Dormant Accounts

¹³⁴ *See id.* at 1.

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.* at 3.

¹³⁸ *What's Behind Luxembourg's "Sleep Account Law"?*, CURENTIS (Nov. 14, 2022), <https://curentis.com/en/regulatorik/was-steckt-hinter-dem-luxemburger-schlafkontengesetz/>.

¹³⁹ Bill of Law No. 7348, Inactive accounts, inactive safe-deposit boxes and unclaimed insurance contracts, ch. 1, art. 1 (2022) (Lux.).

¹⁴⁰ *What's Behind Luxembourg's "Sleep Account Law"?*, *supra* note 138.

¹⁴¹ *See* Lauren Benton & Benjamin Straumann, *Acquiring Empire by Law: From Roman Doctrine to Early Modern European Practice*, 28 L. & HIST. REV. 1, 1–38 (2010); *see* WILLIAM L. BURDICK, THE PRINCIPLES OF ROMAN LAW AND THEIR RELATION TO MODERN LAW 1–155, 298–385 (Rochester, The Laws. Co-operative Publ'g Co. 1938); *see also* *Legal System*, WORLD FACTBOOK, <https://www.cia.gov/the-world-factbook/field/legal-system/> (last visited Dec. 13, 2023).

¹⁴² *What is the Civil Law?*, LA. STATE U. L., <https://law.lsu.edu/clo/civil-law-online/what-is-the-civil-law/> (last visited Dec. 13, 2023); BURDICK, *supra* note 141; *Legal System*, *supra* note 141.

Act 2001.¹⁴³ Besides establishing the procedures for identifying dormant accounts, this act establishes the Dormant Accounts Fund, which is used to support charitable purposes and social programs.¹⁴⁴

3. Unclaimed Property Regulation in Canada, Australia, Singapore, and New Zealand

In Canada, each province has its own legislation to manage unclaimed property.¹⁴⁵ The regulations for unclaimed property are typically set out in the provincial statutes or regulations.¹⁴⁶ For example, in British Columbia, the British Columbia Unclaimed Property Act sets out the rules for unclaimed property,¹⁴⁷ while in Ontario, the Unclaimed Intangible Property Act outlines the regulations.¹⁴⁸ These regulations generally define unclaimed property as any property that has been abandoned or left unclaimed for a certain period of time, and typically set out rules for the reporting and remittance of unclaimed property to the appropriate provincial authority.¹⁴⁹

In Australia, unclaimed property is regulated by the Australian Securities and Investments Commission (ASIC) and the state and territory governments.¹⁵⁰ ASIC is responsible for the regulation of unclaimed money held by banks, credit unions, building societies, and life insurance companies.¹⁵¹ The state and territory governments regulate unclaimed property.¹⁵² Each state and territory has its own legislation and regulations for managing unclaimed property, with reporting and remittance requirements varying among jurisdictions.¹⁵³ Outside of these jurisdictions, many countries have demonstrated fragmented attempts to develop their own approaches to some types of unclaimed property. For example, in

¹⁴³ Dormant Accounts Act 2001 (Act No. 32/2001) (Ir.), <https://www.irishstatutebook.ie/eli/2001/act/32/enacted/en/html>.

¹⁴⁴ *Id.*

¹⁴⁵ Emily Lee, *Unclaimed Property is the Hot Topic in Canada*, UNCLAIMED PROP. PROS. ORG. (July 8, 2014), <https://www.uppo.org/blogpost/925381/Unclaimed-Property-Focus?tag=Canada&DGPCrSrt=&DGPCrPg=2>.

¹⁴⁶ *See id.*

¹⁴⁷ Unclaimed Property Act, S.B.C. 1999, c 48 (Can.).

¹⁴⁸ Unclaimed Intangible Property Act, R.S.O. 1990, c. U.1 (Can.).

¹⁴⁹ Lee, *supra* note 145.

¹⁵⁰ *Unclaimed Money*, Austl. Secs. & Invs. Comm'n, <https://asic.gov.au/regulatory-resources/financial-services/unclaimed-money/> (Sept. 14, 2014).

¹⁵¹ *Id.*

¹⁵² Lee, *supra* note 145.

¹⁵³ *Id.*

Singapore, the Unclaimed Monies Fund, which is a special provision to the Public Trustee Act, regulates unclaimed financial assets of people dying intestate.¹⁵⁴ In New Zealand, the Unclaimed Money Act 1971 sets out the regulations for managing unclaimed property and requires that any unclaimed money held by banks, insurance companies, and other financial institutions be reported to the Registrar of Unclaimed Money.¹⁵⁵

4. Alternative Approaches to Regulating Unclaimed Property

The prevailing majority of national legal systems, regardless of their legal family, have developed concepts related to unclaimed property that share similarities with basic Roman law.¹⁵⁶ However, there are some legal domains that have not developed these concepts at all or may have developed alternative approaches to addressing unclaimed property. In Islamic law, the concept of “public good” *waqf* plays an important role in addressing unclaimed property.¹⁵⁷ The property is managed by a designated trustee, who is responsible for ensuring that the income generated by the property is used for the designated charitable purpose.¹⁵⁸

For example, the government in Saudi Arabia has established the General Authority of Awqaf to manage and regulate *waqf* properties.¹⁵⁹ The concept of *waqf* is also recognized in the laws of other Muslim-majority countries such as Egypt.¹⁶⁰ In addition, the concept of finders’ rights does not apply to unclaimed property under Islamic law.¹⁶¹ If property is lost or abandoned, the finder is required to make a reasonable effort to return the property to its rightful owner.¹⁶² If the owner cannot be located,

¹⁵⁴ See *Unclaimed Monies*, MINISTRY OF L. SING., <https://pto.mlaw.gov.sg/deceased-cpf-estate-monies/unclaimed-monies/> (last visited Dec. 13, 2023); see also Public Trustee Act (Cap 260, 1985 Rev Ed) para 21 (Sing.).

¹⁵⁵ Unclaimed Money Act 1971, s 10(3) (N.Z.).

¹⁵⁶ BURDICK, *supra* note 141.

¹⁵⁷ Sayyid Ali Hussaini Sistani, *Islamic Laws: Rules Regarding Waqf*, AL-ISLAM, <https://www.al-islam.org/islamic-laws-sayyid-ali-hussaini-sistani/rules-regarding-waqf> (last visited Dec. 13, 2023).

¹⁵⁸ *Id.*

¹⁵⁹ *GAA Overview*, GEN. AUTH. AWQAF, <https://www.awqaf.gov.sa/en/about-authority> (last visited Dec. 13, 2023).

¹⁶⁰ *About: Ministry of Awqaf (Egypt)*, DBPEDIA, [https://dbpedia.org/page/Ministry_of_Awqaf_\(Egypt\)](https://dbpedia.org/page/Ministry_of_Awqaf_(Egypt)) (last visited Dec. 13, 2023).

¹⁶¹ Hamid Harasani, *Trust and Waqf Ownership Structures*, in TOWARD THE REFORM OF PRIVATE WAQFS 153, 153–54 (Brill Publishers 2015).

¹⁶² *Id.*

the property is considered part of the *waqf* property and is managed by the designated trustee.¹⁶³

Historically many indigenous legal systems prioritized communal ownership and stewardship of resources over individual ownership.¹⁶⁴ Indigenous legal systems have been subject to assimilation efforts by Western legal systems, which has led to the displacement of traditional legal concepts and practices.¹⁶⁵ In some cases, though, indigenous communities may have preserved authentic legal concepts or developed hybrid legal systems that incorporate both traditional and Western legal concepts.¹⁶⁶ For example, under the Māori legal system in New Zealand, land is seen as belonging to the tribe as a whole, rather than to individual members.¹⁶⁷ Similarly, under the Navajo legal system in the U.S., land is held in trust by the tribe for the benefit of all members.¹⁶⁸ In these legal systems, the concept of escheat, which involves the transfer of ownership from an individual to the state, may not be relevant. Instead, issues related to unclaimed property may be addressed through community-based mechanisms, such as traditional dispute resolution processes or the appointment of a tribal or community representative to manage unclaimed property.

5. Characteristics of Existing Legal Frameworks for Unclaimed Assets

The regulatory frameworks for unclaimed property vary across jurisdictions. Many national legal systems, including those belonging to continental systems, use concepts inherited from Roman law, albeit with national specifics. Alternative approaches in various regulatory domains may be of great interest when examining unclaimed digital assets since they represent an unusual type of asset that requires unconventional approaches. For example, the concept of *waqf* in Islamic law could be applied to unclaimed digital assets, where the assets are managed by a trustee

¹⁶³ *Id.*

¹⁶⁴ John Bickers, *The Dawes Act*, ORIGINS: CURRENT EVENTS IN HIST. PERSP. (Feb. 2022), https://origins.osu.edu/read/dawes-act?language_content_entity=en.

¹⁶⁵ *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ Tanira Kingi, *Maori Landownership and Land Management in New Zealand - Making Land Work*: AUSTL. GOV'T DEP'T OF FOREIGN AFFS. & TRADE, https://www.dfat.gov.au/sites/default/files/MLW_VolumeTwo_CaseStudy_7.pdf/ (last visited Dec. 13, 2023)

¹⁶⁸ *History*, NAVAJO NATION, <https://www.navajo-nsn.gov/History> (last visited Dec. 13, 2023); *Native American Ownership and Governance of Natural Resources*, U.S. DEP'T OF INTERIOR: NAT'L RES. REVENUE DATA, <https://revenue.data.doi.gov/how-revenue-works/native-american-ownership-governance/> (last visited Dec. 13, 2023).

designated to ensure that the income generated is used for charitable purposes. Similarly, in indigenous legal systems that prioritize communal ownership and stewardship of resources, unclaimed digital assets could be managed through community-based mechanisms, such as traditional dispute resolution processes or the appointment of a tribal or community representative to manage the assets. These approaches could help address the jurisdictional and ownership issues that arise with unclaimed digital assets and provide a framework for managing them in a way that aligns with the values and principles of different legal systems. Some jurisdictions have already attempted to adjust their existing regulatory frameworks to accommodate unclaimed digital assets, but most of these attempts remain fragmentary.¹⁶⁹ These attempts will be examined more in-depth later in this paper.

C. Existing Regulations for Unclaimed (Unowned) Digital Assets

The regulation of unclaimed property has recently seen a growing focus on unclaimed digital assets, which has become an area of concern. This has spurred research and discussions on how to effectively manage unclaimed digital assets.¹⁷⁰ As financial assets continue to be digitized, the challenge of locating and identifying the rightful owners of unclaimed digital assets has become more complex.¹⁷¹ This is especially true for cryptocurrencies and other forms of digital currency, which have become a primary focal point for legal innovations related to unclaimed property in many jurisdictions.¹⁷²

1. Existing Regulations Addressing Unclaimed Digital Assets in the United States

In the U.S., some states have updated their laws to explicitly include digital assets within the definition of unclaimed property. In 2016, the Uniform Law Commission drafted a new model law, Revised Uniform Unclaimed Property Act (RUUPA), which includes provisions specifically addressing digital assets in Section 102(32).¹⁷³ RUUPA provides a framework for the treatment of unclaimed digital assets, including cryptocurrencies,

¹⁶⁹ Kevin Werbach, *Trust, but Verify: Why the Blockchain Needs the Law*, 33 BERKELEY TECH. L.J. 487, 533, 541 (2018).

¹⁷⁰ See, e.g., TREASURY COMMITTEE, UNCLAIMED ASSETS WITHIN THE FINANCIAL SYSTEM, 2006-7, HC 533 (UK).

¹⁷¹ See *id.*

¹⁷² See generally Gerald P. Dwyer, *The Economics of Bitcoin and Similar Private Digital Currencies*, 17 J. OF FIN. STABILITY 81 (2015).

¹⁷³ REVISED UNIF. UNCLAIMED PROP. ACT § 102(32) (UNIF. L. COMM'N 2016).

in a more standardized manner across all states.¹⁷⁴ It contains provisions that specify how digital assets should be handled by financial institutions and other custodians, and sets out procedures for the notification and reporting of unclaimed digital assets to state authorities.¹⁷⁵ RUUPA also addresses issues related to the dormancy periods of digital assets, which refers to the time period after which the assets are considered unclaimed.¹⁷⁶ Under RUUPA, the dormancy periods for digital assets vary depending on the type of asset and can range from one to five years.¹⁷⁷ Holders of unclaimed digital assets are required to perform due diligence in attempting to locate the rightful owners of the assets.¹⁷⁸ If the rightful owners cannot be located, RUUPA allows for the escheatment of the assets to the state.¹⁷⁹ RUUPA is a model law, and individual states are not required to adopt it.¹⁸⁰ However, many states have already adopted or are in the process of adopting RUUPA, which demonstrates the growing need for standardized regulations in this area.¹⁸¹

In addition to RUUPA, another model law, the Revised Uniform Fiduciary Access to Digital Assets Act (RUFADAA), was introduced in 2015 by the Uniform Law Commission to regulate access to and management of digital assets by fiduciaries.¹⁸² The act provides guidelines on how digital assets, including social media accounts, emails, and cloud storage accounts, can be accessed and managed by an executor, trustee, or agent appointed by the owner of the assets.¹⁸³ RUFADAA is designed to address the issue of access to digital assets in the event of incapacity or death of the owner.¹⁸⁴ It requires internet service providers, social media companies, and other custodians of digital assets to provide access to the assets to the fiduciary appointed by the owner, and also allows the owner of the digital assets to specify in their will or estate plan how they would like their digital assets to be managed after their death.¹⁸⁵

¹⁷⁴ *Id.* prefatory note at 11.

¹⁷⁵ *Id.* §§ 301–601.

¹⁷⁶ *Id.* §§ 201–212.

¹⁷⁷ *Id.* §§ 301–501.

¹⁷⁸ *Id.* §§ 601–801.

¹⁷⁹ *Id.* §§ 201, 302.

¹⁸⁰ *Id.* prefatory note at 1.

¹⁸¹ *See id.*

¹⁸² REVISED UNIF. FIDUCIARY ACCESS TO DIGIT. ASSETS ACT, prefatory note at 1 (UNIF. L. COMM'N 2015).

¹⁸³ *Id.* §§ 3–4, 6.

¹⁸⁴ *Id.*

¹⁸⁵ *Id.* §§ 3, 6.

Under RUFADAA, fiduciaries are required to provide evidence of their appointment and a death certificate or court order to access the digital assets.¹⁸⁶ The act also provides guidelines on how digital assets should be managed, including the duty to protect the privacy of the owner and their contacts.¹⁸⁷ One of the key provisions of RUFADAA is the regulation of unclaimed digital assets.¹⁸⁸ Under RUFADAA, if a fiduciary is unable to locate the owner of the digital assets or their heirs, the assets may be considered unclaimed property and subject to state escheat laws.¹⁸⁹ The act requires custodians of digital assets to notify the asset's owner of their rights and responsibilities under the law and provide information on how to access and manage the assets.¹⁹⁰

However, RUFADAA has been criticized for several reasons. One of the main criticisms is that it does not provide clear guidelines on how digital assets should be managed after the death of the owner.¹⁹¹ While the act allows the owner to specify their wishes in their estate plan, many people are unaware of this and may not have made provisions for the management of their digital assets.¹⁹² Another criticism of RUFADAA is that it places a burden on custodians of digital assets to comply with the law, which can be costly and time-consuming.¹⁹³ Some have argued that this burden may discourage custodians from providing access to digital assets, particularly if the value of the assets is low.¹⁹⁴

The regulation of unclaimed property also intersects with other areas of law, such as consumer protection and data privacy. Some states have enacted laws requiring businesses to take additional steps to protect the personal information of owners of unclaimed property, and to ensure that this information is not misused. California's Consumer Privacy Act requires businesses to take additional steps to protect the personal information of California residents.¹⁹⁵ Under this law, businesses must disclose what personal information they collect, how it is used, and with whom it is

¹⁸⁶ *Id.* § 7.

¹⁸⁷ *Id.*

¹⁸⁸ *Id.* §§ 3–4, 6.

¹⁸⁹ *Id.*

¹⁹⁰ *Id.*

¹⁹¹ *Id.* §§ 2(26), 4–6.

¹⁹² *State-by-State Digital Estate Planning Laws*, EVERPLANS, <https://www.everplans.com/articles/state-by-state-digital-estate-planning-laws> (last visited Dec. 13, 2023).

¹⁹³ *See, e.g.*, Patricia Sheridan, *Inheriting Digital Assets: Does the Revised Uniform Fiduciary Access to Digital Assets Act Fall Short?*, 16.2 OHIO STATE TECH. L.J. 364, 386 (2020).

¹⁹⁴ *See id.*

¹⁹⁵ *See* CAL. CIV. CODE § 1798.100 (2023).

shared.¹⁹⁶ This includes information related to unclaimed property, such as bank accounts and other financial assets.¹⁹⁷ The law also gives consumers the right to request that their personal information be deleted or not sold to third parties.¹⁹⁸ New York's Stop Hacks and Improve Electronic Data Security (SHIELD) Act requires businesses to implement reasonable data security measures to protect the personal information of New York residents, including information related to unclaimed property like account numbers and financial information.¹⁹⁹

2. The Regulation of Unclaimed Digital Assets Outside the United States

As will be further demonstrated, certain jurisdictions, such as various EU member states, Great Britain, Australia, and Canada, have enacted specific laws to address unclaimed digital assets.²⁰⁰ Other jurisdictions, like China, Japan, and Brazil, govern unclaimed digital assets by broader laws concerning property and inheritance. In the EU, the General Data Protection Regulation (GDPR) and the ePrivacy Directive provides guidance on the handling of personal data related to unclaimed digital assets.²⁰¹ Recent development is related to Markets in Crypto Assets regulation (MiCA), which was approved by the EU in April 2023.²⁰² MiCA was designed to impose more order and transparency on the volatile cryptocurrency industry, protect the wider financial system and investors, and in a broad sense indirectly affects the unclaimed digital assets issues.²⁰³ The Law of Succession Act of Estonia allows individuals to appoint a digital executor to manage their digital assets after their death.²⁰⁴ In 2016, the French government introduced a set of new laws on digital inheritance allowing individuals to

¹⁹⁶ *Id.* § 1798.100(a).

¹⁹⁷ *See id.* § 1798.100.

¹⁹⁸ *Id.* § 1798.105(c)(1).

¹⁹⁹ *See* N.Y. GEN. BUS. LAW § 899-bb(2) (McKinney 2020).

²⁰⁰ *See supra* notes 142–54, 175.

²⁰¹ *See generally* *Overview of Privacy & Data Protection Laws: Europe*, SQUIRE PATTON BOGGS: PRIVACY WORLD, <https://www.privacyworld.blog/privacy-europe/> (last visited Dec. 13, 2023).

²⁰² Council Directive 2023/1114, 2023 O.J. (L 150); *see generally* Alys Key, *What is MiCA? The European Union's Landmark Crypto Regulation Explained*, DECRYPT (May 10, 2023), <https://decrypt.co/138713/what-is-mica-eu-crypto-regulation-explained>.

²⁰³ *Id.*

²⁰⁴ Tiina Mikk & Karin Sein, *Digital Inheritance: Heirs' Right to Claim Access to Online Accounts Under Estonian Law*, 27 JURIDICA INT'L 117, 127 (2018).

specify in their wills the destiny of their digital assets after their death.²⁰⁵ In 2018, Italy's Decree No. 135/2018 amended the Italian Civil Code recognizing the legal status of digital assets.²⁰⁶

Legislation in the UK regarding the status of digital accounts after a person's death is progressing with the "Digital Devices (Access for Next of Kin) Bill" having passed its first reading in the House of Commons. It will establish a new law granting automatic access to the contents of digital accounts for the next of kin of a deceased or incapacitated person.²⁰⁷ As mentioned in previous cases, the act allows individuals to nominate a person to manage their digital assets after they die and specifies the powers and responsibilities of the nominated person.²⁰⁸ In Canada, the handling of unclaimed digital assets is governed by provincial laws on property and inheritance, with some provinces having specific rules for digital assets.²⁰⁹

In South Korea, unclaimed digital assets are regulated by the Act on the Reporting and Use of Certain Financial Transaction Information.²¹⁰ In South Africa, unclaimed digital assets are regulated under the ASISA Standard on Unclaimed Assets (the ASISA Standard).²¹¹ This standard "came into effect on 1 January 2018, replac[ing] the previous ASISA Unclaimed Asset Standard, which was applicable to long-term insurance members, CIS managers and Linked Investment Service Providers."²¹² The Act applies to financial institutions, including banks, insurers, and

²⁰⁵ Philippe Ropenga, *Digital Assets in French Successions*, ALACRITER: TRS. & ESTS. (Feb. 26, 2020), <https://alacriter.fr/blog/digital-assets-in-french-successions.html>.

²⁰⁶ Decreto-Legge 14 dicembre 2018, n.135, G.U. Dec. 14, 2018, n.290 (It.).

²⁰⁷ Charlotte Smith & Louise Low, *Digital Assets on Incapacity and Death – Why the 'Digital Devices (Access for Next of Kin) Bill' is a Step Forward*, BLANDY & BLANDY SOLICS. (Feb. 21, 2022), <https://www.blandy.co.uk/about/news-and-insights/insights/digital-assets-on-incapacity-and-death-why-the-digital-devices-access-for-next-of-kin-bill-is-a-step-forward>.

²⁰⁸ *Id.*

²⁰⁹ Victoria Hockley et al., *Digital Assets: Disposal, Rights and Succession in Canada*, THOMPSON REUTERS CAN., [https://ca.practicallaw.thomsonreuters.com/2-600-0205?transition-Type=Default&contextData=\(sc.Default](https://ca.practicallaw.thomsonreuters.com/2-600-0205?transition-Type=Default&contextData=(sc.Default) (last visited Dec. 13, 2023).

²¹⁰ Jongsoo Yoon et al., *Amended Act on Reporting and Using Specified Financial Transaction Information Now Governs Virtual Assets*, LEGAL 500 (Mar. 13, 2020), <https://www.legal500.com/developments/thought-leadership/amended-act-on-reporting-and-using-specified-financial-transaction-information-now-governs-virtual-assets/>.

²¹¹ *A Framework for Unclaimed Financial Assets in South Africa*, FIN. SECTOR CONDUCT AUTH. 24 (Sept. 2022), <https://www.fsca.co.za/Regulatory%20Frameworks/Temp/FSCA%20Discussion%20Paper%20-%20A%20Framework%20for%20Unclaimed%20Financial%20Assets%20in%20South%20Africa%202022.pdf>.

²¹² *Id.*

retirement funds, and requires them to report and transfer unclaimed financial assets to the Registrar of Unclaimed Financial Assets.²¹³ The document applies to financial assets held or owned by a financial institution deeming unclaimed those that have been inactive for a period of at least three years and whose owner cannot be traced or has not claimed the asset.²¹⁴ Financial assets covered under the Act include bank accounts, insurance policies, and retirement fund benefits.²¹⁵ Financial institutions are required to make reasonable efforts to trace the owner of the unclaimed financial asset.²¹⁶ If the owner cannot be traced or does not claim the asset within 15 years of it being transferred to the Registrar, the asset becomes the property of the National Revenue Fund.²¹⁷ In Australia, unclaimed digital assets are regulated by the laws of each individual state or territory, with some states having specific laws that address unclaimed digital assets.²¹⁸ For example, the New South Wales Unclaimed Money Act 1995 includes provisions for unclaimed digital assets.²¹⁹

3. Observations in Regard to Existing Regulatory Frameworks for Unclaimed Digital Assets

Based on the research conducted, several observations can be made regarding the regulation of digital assets. First, the current regulation of digital assets lacks a comprehensive and systematic approach, leading to fragmentation in the legal framework. This fragmentation can create challenges in effectively addressing the various aspects of unclaimed digital assets. Second, there is a notable focus on regulating cryptocurrencies within the existing legal frameworks. While cryptocurrencies are a significant aspect of digital assets, it is important to recognize that digital assets encompass a broader range of assets beyond cryptocurrencies, such as digital media, intellectual property, and online accounts. Third, existing legislation often attempts to fit new phenomena, including digital assets, into traditional legal frameworks. However, this approach may not always be appropriate or practical because digital assets present unique characteristics and challenges that may require innovative and tailored legal solutions. Lastly, there are instances where regulations extend their reach into areas related to unclaimed digital assets when intervention may be

²¹³ *Id.* at 3, 26.

²¹⁴ *Id.* at 25.

²¹⁵ *Id.*

²¹⁶ *Id.* at 26.

²¹⁷ *See id.* at 34.

²¹⁸ *See, e.g., Unclaimed Money Act 1995 (N.S.W.) (Austl.)*.

²¹⁹ *See id.*

unnecessary. This can result in burdensome rules and regulations that hinder innovation and impede the development of efficient processes for managing unclaimed digital assets.

Overall, these observations highlight the need for a comprehensive and adaptable regulatory framework that considers the diverse nature of digital assets and addresses the specific challenges they present, while avoiding unnecessary intervention and excessive burdens on stakeholders.

The first two observations have been addressed earlier in this paper.²²⁰ However, further research is needed to delve into the other two aspects: the intention to fit the phenomena of unclaimed digital assets into legacy legal frameworks and the issues of excessive and untargeted regulation.

IV. APPLYING LEGACY CONCEPTS TO UNCLAIMED DIGITAL ASSETS

A. *The Legal Concepts Allowing the Acquisition of Legal Rights Over Unowned Property in the Physical Realm and Their Applicability to the Virtual Realm*

The specific requirements for acquiring legal rights over unowned property can vary by jurisdiction and may be subject to certain limitations and restrictions. However, there are several well-established legal doctrines that pertain to the status of unowned objects in the physical realm and are commonly utilized in most legal systems. The concepts and legal doctrines surrounding the status of unowned property have existed for centuries and can be traced back to ancient legal systems.²²¹ In Roman law, for example, the concept of *res nullius* referred to things that were considered unowned or without an owner.²²² Roman law recognized that certain objects, such as wild animals or abandoned items, could be claimed by individuals through occupation or possession.²²³ In addition to Roman law, the legal concepts surrounding unowned property also have roots in Anglo-Saxon legal history.²²⁴ For example, under Anglo-Saxon law, the Crown or the state could claim unused property, especially if it had no rightful

²²⁰ See *supra* Sections II–III.

²²¹ See Benton & Straumann, *supra* note 141, at 1–38.

²²² *Id.* at 1.

²²³ See John Macdonell, *Occupation and “Res Nullius”*, 1 J. SOC’Y COMPAR. LEGIS. 276, 284 n.2 (1899).

²²⁴ See Brian Gardiner, *Squatters’ Rights and Adverse Possession: A Search for Equitable Application of Property Laws*, 8 IND. INT’L & COMP. L. REV. 1, 130 (1997).

claimant.²²⁵ This principle allowed the government to assert ownership over unclaimed property and use it for public purposes.²²⁶

These concepts have influenced legal systems throughout history, and variations of them can be found in different legal traditions. Over time, these principles have been adapted and applied to different types of property, including tangible and intangible assets. However, the aforementioned doctrines may not be directly applicable to the virtual realm because virtual property is drastically different from physical property. Virtual property is intangible and exists solely in the digital world. This means that it cannot be touched, held, or physically possessed like physical property. Many virtual property types can be infinitely replicated and are not subject to the same scarcity constraints as physical property.²²⁷ It also often lacks any inherent or objective value and is valued only by the opinion of the user or their peers.²²⁸ Finally, the legal ownership and control of virtual property is often dictated by the virtual platform's terms of service, rather than by traditional property law concepts.²²⁹

We will review these concepts and their applicability to digital assets in more detail.

B. Escheat, Bona vacantia, and Similar Concepts

Escheat is a legal principle that allows the government to take ownership of property in certain circumstances.²³⁰ The most common application of escheat is when the owner dies without a will and without any known heirs or claimants.²³¹ The purpose of escheat is to prevent property from remaining unclaimed or abandoned and ensure that it is transferred to a responsible entity.²³²

Bona vacantia doctrine refers to property that is unowned and without an identifiable owner.²³³ This property can include things, like abandoned houses, lost or discarded items, and even ships or aircraft that are

²²⁵ See *id.* at 125.

²²⁶ See *id.* at 152.

²²⁷ See Wian Erlank, Property in Virtual Worlds 125 (Dec. 1, 2012) (LLD dissertation, Stellenbosch Univ.) (on file at <https://ssrn.com/abstract=2216481>).

²²⁸ See *id.* at 172.

²²⁹ See *id.* at 63–64, 98.

²³⁰ See David C. Auten, *Modern Rationales of Escheat*, 112 U. PA. L. REV. 95, 96 (1963).

²³¹ See *id.*

²³² See *id.* at 98–99.

²³³ See *id.* at 115.

abandoned at sea.²³⁴ Escheat and *bona vacantia* share a historical connection, and, in certain jurisdictions, they share doctrinal works and historical periods; they are used interchangeably to describe the transfer of ownerless property to the state.²³⁵ However, their usage and meaning can vary depending on the jurisdiction and legal framework.²³⁶

In the United States, escheat laws are enacted at the state level. For example, in California, the law provides that property escheats to the state when the owner dies without a will and without any known heirs or claimants.²³⁷ In the case that the owner is unknown or fails to claim the property within a specified time frame, typically three years, the property may be eligible for escheat to the state.²³⁸ Oversight of the administration and distribution of unclaimed property rests with the California State Controller's Office.²³⁹ In Florida, the state's escheat laws are outlined in the Florida Disposition of Unclaimed Property Act.²⁴⁰ Under this act, unclaimed property, including financial assets, tangible property, and safe deposit box contents, may escheat to the state under certain circumstances.²⁴¹ Washington's escheat laws are governed by the Uniform Unclaimed Property Act.²⁴² According to these laws, various types of unclaimed property, such as bank accounts, stocks, and insurance proceeds, may escheat to the state if there is no activity or contact with the owner for a specified period of time.²⁴³ Similarly, other jurisdictions around the world also have their own laws and regulations regarding escheat. For example, Canada's escheat laws are governed by provincial legislation.²⁴⁴ In Ontario, the Escheats Act outlines the process where property may escheat to the Crown when there are no legal heirs or claimants.²⁴⁵

²³⁴ *See id.*

²³⁵ See N. S. Peterman, *Escheat-Bona Vacantia-Right of State to Claim Unclaimed Royalty Payments of a Corporation*, 46 MICH. L. REV. 1116, 1117 (1948).

²³⁶ *See id.*

²³⁷ See CAL. PROB. CODE § 6800 (West 2023); *see also* CAL. CIV. PROC. CODE § 1300 (West 2023).

²³⁸ See Malia M. Cohen, *About Unclaimed Property*, CAL. STATE CONTROLLER, https://www.sco.ca.gov/upd_faq_about-unclaimed-property.html (last visited Dec. 13, 2023).

²³⁹ CAL. CIV. PROC. CODE § 1572 (West 2023).

²⁴⁰ FLA. STAT. § 717.117 (2023).

²⁴¹ *Id.*

²⁴² WASH. REV. CODE § 63.30.270 (2023).

²⁴³ *Id.*

²⁴⁴ Katie Patterson & Vladimir Shatiryan, *Canadian Primer on Unclaimed Property Legislation*, BLAKES (Dec. 2, 2020), <https://www.blakes.com/insights/bulletins/2020/canadian-primer-on-unclaimed-property-legislation>.

²⁴⁵ *Id.*

Escheat should be distinguished from forfeiture. While both forfeiture and escheat involve the transfer of property to the government, they differ in their underlying principles and specific applications. Forfeiture primarily targets property connected to criminal offenses and serves as a means for the government to confiscate and disrupt illegal activities.²⁴⁶ It typically occurs as a result of a legal proceeding, such as a criminal conviction or civil forfeiture action.²⁴⁷ The purpose of forfeiture is to deprive wrongdoers of the proceeds or instrumentalities of their unlawful activities and to prevent the further use or benefit of such property.²⁴⁸ Escheat, on the other hand, focuses on situations where property is ownerless or abandoned, and its purpose is to ensure the proper management and transfer of such property.²⁴⁹

In the United Kingdom, the concept of escheat is covered by a wider doctrine of *bona vacantia* or “vacant goods.”²⁵⁰ In ancient English law, *bona vacantia* and escheat developed as a concept tied to feudalism.²⁵¹ It was based on the principle that all land ultimately belonged to the king or the crown.²⁵² If a tenant-in-chief died without leaving a legal heir, the land would revert back to the lord or the crown. This ensured that the land would not remain in limbo and would be redistributed to a new tenant.²⁵³ Over time, escheat in English law expanded beyond feudal land and came to encompass various types of property and circumstances.²⁵⁴ For example, escheat could occur when there were no heirs to personal property or when property was forfeited due to criminal activities.²⁵⁵ In such cases, the property would be transferred to the lord or the Crown.²⁵⁶

²⁴⁶ DEE R. EDGEWORTH, ASSET FORFEITURE: PRACTICE AND PROCEDURE IN STATE AND FEDERAL COURTS xxii–xxiii, 22 (Am. Bar. Ass’n Publ’g 2004).

²⁴⁷ *Id.* at 3–7.

²⁴⁸ *Id.* at xxii–xxiii.

²⁴⁹ John V. Orth, *Escheat: Is the State the Last Heir?*, 13 GREEN BAG 2D 73, 73–74 (2009).

²⁵⁰ *Id.* at 77.

²⁵¹ *Id.* at 76–77.

²⁵² K. Reed Mayo, *Virginia’s Acquisition of Unclaimed and Abandoned Property*, 27 WM. & MARY L. REV. 409, 411–12 (1986).

²⁵³ *Id.* at 409.

²⁵⁴ WILLIAM SEARLE HOLDSWORTH, A HISTORY OF ENGLISH LAW 67–69 (Methuen & Co., 3d ed. 1922) (1904).

²⁵⁵ *See id.*

²⁵⁶ *See id.*

In modern Great Britain, the Crown is still considered the ultimate owner of *bona vacantia* property.²⁵⁷ The Treasury Solicitor, also known as the Government Legal Department, serves as the custodian of these assets and is responsible for managing and distributing them in accordance with the relevant laws and regulations.²⁵⁸ The Treasury Solicitor's Bona Vacantia Division handles the administration of *bona vacantia* property on behalf of the Crown.²⁵⁹ Other jurisdictions that have a British legal heritage, such as Australia, New Zealand, and Ireland, also widely use *bona vacantia* doctrine.²⁶⁰ For example, Australia has *bona vacantia* laws established at the state and territory level.²⁶¹ For instance, in New South Wales, unclaimed property that is deemed abandoned may escheat to the state government under the Unclaimed Money Act 1995.²⁶²

While the specific terms “escheat” and “*bona vacantia*” may not be used in the laws of all countries, similar doctrines or legal principles exist in various jurisdictions that grant the state the authority to assume ownership of certain types of unowned property. These doctrines serve to ensure that property without clear ownership or heirs is not left in a state of limbo but is transferred to the government for proper management and disposition. For example, German legislation refers to the concept of escheat as “*herrenloses Gut*,” and, similar to other jurisdictions, the German Civil Code provides guidelines for the transfer of property to the state when there is no identifiable owner or legal successor.²⁶³ In Brazil, the handling of vacant goods or *res nullius*, including situations where property is left without a clear owner or heir, is addressed by the Brazilian Civil Code (Código Civil Brasileiro).²⁶⁴ The Brazilian Civil Code contains provisions that govern the treatment and disposal of unclaimed property, including rules on how such property should be managed, sold, or allocated.²⁶⁵

²⁵⁷ *Bona Vacantia*, GOV.UK, <https://www.gov.uk/government/organisations/bona-vacantia> (last visited Dec. 14, 2023).

²⁵⁸ *Id.*

²⁵⁹ *Id.*

²⁶⁰ *See id.*; *Bona Vacantia (Ownerless Property)*, TE TAI ŌHANGA THE N.Z. TREASURY, <https://www.treasury.govt.nz/information-and-services/other-services/bona-vacantia-ownerless-property> (Feb. 8, 2023); *Succession Act 1981* (Queensl.) sch 2 pt 2 s 4 (Austl.).

²⁶¹ *Unclaimed Money Act 1995* (N.S.W.) pt 3 (Austl.).

²⁶² *Id.*

²⁶³ Gesetzliches Erbrecht des Staates [Right of intestate succession of the State], July 21, 2021, BÜRGERLICHES GESETZBUCH [BGB], § 1936 [Ger.].

²⁶⁴ CÓDIGO CIVIL [C.C.] art. 1,276 (Braz.).

²⁶⁵ *Id.*

1. Applicability of Escheat to Digital Assets

As discussed previously, escheat, *bona vacantia*, and similar concepts are the legacy doctrines most widely applied to unclaimed digital assets.²⁶⁶ In recent years, many jurisdictions have recognized the need to address digital assets within their escheat or *bona vacantia* laws. The applicability of these laws, however, is very limited.

First, these regulations cover only some types of digital assets, mostly digital money surrogates, crypto wallets, and some digital rights, like digital shares in DAOs. However, a wide range of digital assets, as classified previously,²⁶⁷ is not affected by this regulation. The escheat laws are not applicable to social media, email, game-related digital content, digital photos, videos, music, and other files that have been abandoned or forgotten by the owner. The reasons for excluding such assets are obvious: the government sees no value in them and has no tools to handle them. Even when some alternative digital assets are covered by escheat regulations, such as in the Illinois Revised Uniform Unclaimed Property Act, the practice of applying and enforcing the law may encounter technical problems.²⁶⁸

Second, The state often is technically incapable of controlling digital assets. As demonstrated by the examples of dormant crypto wallets, having the legal right to the cryptocurrency and possessing it is not the same with regard to digital assets. The wallet might be subject to escheat according to the law, but the administrator or custodian does not possess technical credentials to control the asset. Some regulators require holders to escheat dormant crypto and liquidate crypto into fiat currency in order to escheat.²⁶⁹ But such a solution both represents an administrative burden for crypto custodians and may be technically impossible due to the specific nature of digital assets.

C. Adverse Possession

Adverse possession, also known as “squatters’ rights,” allows a person to acquire ownership of property through possession or use over a certain period of time.²⁷⁰ In civil law jurisdictions, adverse possession is

²⁶⁶ See *supra* Section IV.B.

²⁶⁷ See *supra* Section II.C.

²⁶⁸ 755 ILL. COMP. STAT. 20/1 (2023).

²⁶⁹ See 765 ILL. COMP. STAT. 1026/15-602 (2023).

²⁷⁰ *Adverse Possession*, LEGAL INFO. INST., https://www.law.cornell.edu/wex/adverse_possession (last visited Dec. 14, 2023).

also known as acquisitive prescription.²⁷¹ In the U.S., the requirements for adverse possession vary by state, but typically require that the person possessing the property does so openly, continuously, and without permission from the owner for a certain period of time. The time period also varies, but it is normally between five and twenty years. For example, in California, a person may acquire title to property through adverse possession if they have possessed the property openly and continuously for at least five years.²⁷² In Florida, the statutory period is generally seven years, but it can be reduced to five years under certain circumstances.²⁷³ To claim adverse possession, the possessor often must also meet other requirements, such as paying property taxes and making improvements to the property. For example, according to Florida statutes, to acquire the ownership right through adverse possession a person “must either have some sort of title on which to base claim of title or the person must have paid property taxes on the land claimed to be adversely possessed.”²⁷⁴

1. Applicability of Adverse Possession to Unclaimed Digital Assets

Adverse possession is a legal concept that typically applies to physical real estate and in some jurisdictions to other types of physical property, but not to digital assets. In the hypothetical scenario, adverse possession of digital assets could potentially involve a situation where an individual gains control or possession of another person’s digital assets without their permission and maintains exclusive and uninterrupted control over them for an extended period.²⁷⁵ This expanded concept could imply that, over time, the possessor acquires some form of legal claim or ownership rights over the digital assets, despite not having explicit authorization or legal title. A social network account abandoned by its founder, with someone else having access to it (e.g., an Instagram™ or LinkedIn™ account), could serve as a good example. The person with access may openly and notoriously possess the account, actively demonstrating their exclusive control over it to the public or anyone who could assert a claim of ownership. They would maintain continuous possession by actively managing the account, becoming a page administrator, and further developing it. This possession would be considered “hostile” as it occurs without the permission

²⁷¹ Len Kilgore, *The Ten-Year Acquisitive Prescription of Immovables*, 36 LA. L. REV. 1000, 1000–01 (1976).

²⁷² CAL. CIV. CODE § 1007 (West 2023); CAL. CIV. PROC. CODE § 321 (West 2023).

²⁷³ FLA. STAT. § 95.16 (2023).

²⁷⁴ *Id.*

²⁷⁵ See *Adverse Possession*, *supra* note 270.

of the true owner. Additionally, they would assume the responsibility of carrying expenses, such as storing the account on third-party servers.

Several important considerations and challenges would arise when applying adverse possession to digital assets. First, determining exclusive control and possession over digital assets may be more complex than with physical property. Second, the digital nature of assets raises jurisdictional complexities, as digital assets can be stored and accessed from different locations worldwide. Determining which jurisdiction's laws would apply and enforcing adverse possession claims could be problematic. Third, digital assets are typically governed by terms of service, licensing agreements, or intellectual property laws. Unauthorized possession or use of digital assets may be in violation of these agreements or laws, making it difficult to claim adverse possession. Lastly, adverse possession usually requires demonstrating open, notorious, and exclusive possession. Proving possession of digital assets, particularly when they may be distributed across various platforms or networks, could be challenging.

D. Finders' Rights

Finders' rights refer to the legal rights of a person who finds lost or abandoned property.²⁷⁶ In the U.S., finders' rights are governed by state law, and the rules vary from state to state.²⁷⁷ Generally, a finder of lost or abandoned property is entitled to possession of the property against anyone except the real owner.²⁷⁸ However, the finder may be required to make reasonable efforts to locate the owner and return the property. For example, in New York, a finder of lost property must give notice to the police department of the precinct where the property was found within ten days of finding the property.²⁷⁹

1. Applicability of Finders' Rights Doctrine to Unclaimed Digital Assets

Hypothetically, applying the finders' rights doctrine to digital assets raises interesting considerations. If an individual discovers a digital asset that appears to be lost or abandoned, such as an unsecured cryptocurrency wallet, physical USB card, disc with software, USB with a wallet token on it, or an unclaimed online storage account, they may argue that they have found the asset and assume the role of a finder. The hypothetical finder

²⁷⁶ See Roy Mitchell Moreland, *The Rights of Finders of Lost Property*, 16 KY. L.J. 1, 13 (1927).

²⁷⁷ See generally *Armory v. Delamirie*, 93 Eng. Rep. 664 (1722).

²⁷⁸ *Id.*

²⁷⁹ N.Y. PERS. PROP. LAW § 252 (McKinney 2023).

would likely need to make reasonable efforts to identify the true owner of the digital asset. This could involve conducting research, utilizing available contact information, addressing relevant web communities through online forums, or engaging with relevant platforms or service providers to determine ownership. The finder would have a duty to take reasonable steps to preserve and protect the digital asset while taking steps necessary to identify the owner. This may involve securing the asset, preventing any unauthorized access or use, and even covering costs necessary to preserve it. Eventually, if the true owner fails to respond or assert their ownership within a reasonable period, the finder might argue that they have met the requirements of the finders' rights doctrine and acquired legal ownership of the digital asset.

E. Capture

This doctrine allows a person to acquire property rights over wild animals by capturing them.²⁸⁰ The capture must be physical and complete, and the captor must exercise control over the animal.²⁸¹ However, the doctrine does not apply to domesticated animals or to animals that are protected by law.²⁸² The rules for capture may vary by jurisdiction and may be subject to limitations based on conservation or animal welfare concerns. In *Pierson v. Post*, the Supreme Court of New York held that the plaintiff, who had been chasing a fox with his hounds, did not have a property right in the fox until he actually captured it.²⁸³ The court noted that the defendant had captured the fox before the plaintiff and thus acquired a valid property right in it.²⁸⁴ The court also noted that the doctrine of capture applied only to wild animals that had not been possessed by anyone else.²⁸⁵

1. Applicability of Capture Doctrine to Unclaimed Digital Assets

Capture is arguably one of the least likely legacy doctrines to be applicable in the context of assets in the digital world. However, it can be interesting to explore hypothetical scenarios where its application may seem intriguing. One example pertains to video game assets, including

²⁸⁰ Michael C. Blumm & Lucas Ritchie, *The Pioneer Spirit and the Public Trust: The American Rule of Capture and State Ownership of Wildlife*, 35 ENV'T L. 673, 678 n.24 (2005).

²⁸¹ *Pierson v. Post*, 3 Cai. 175, 177 (1805).

²⁸² See BARLOW BURKE, PERSONAL PROPERTY IN A NUTSHELL 17 (W. Acad. Publ'g, 4th ed.1983).

²⁸³ *Pierson*, 3 Cai. at 179.

²⁸⁴ *Id.* at 178.

²⁸⁵ *Id.*

virtual items, characters, and in-game resources, which exist within the virtual environment of the game. Players might contend that they have obtained ownership of a digital asset by being the first to “capture” or gain control over it within the game. This analogy draws parallels to the doctrine’s traditional application to natural resources or wildlife, as the control and possession of the digital asset, facilitated by technology, aligns with the spirit of the capture doctrine. It is important to note that until a relevant legal framework is introduced this example remains purely theoretical, as the game developer or publisher generally maintains control over the virtual assets.

F. Accession

This doctrine refers to the acquisition of property rights over something that was previously unowned by incorporating it into property that is already owned.²⁸⁶ Accession is primarily associated with human-made improvements or additions to property, rather than natural processes.²⁸⁷ It typically involves situations where individuals make enhancements to an existing property that result in an increase in its value.²⁸⁸ Accession is generally not applicable to unowned property because it involves the addition of value to an item that is already owned.²⁸⁹ However, there are some situations where accession could apply to unowned property.²⁹⁰ Assuming specific hypothetical legal criteria are satisfied, an individual who enhances the value of unclaimed property, such as through improvements, might assert ownership of the property under the principle of accession. In this context, accession under some circumstances may become an alternative to adverse possession or even finders’ rights.

1. Applicability of the Accession Doctrine to Unclaimed Digital Assets

One hypothetical scenario where the doctrine of accession could be contemplated in the digital world is when modifications or enhancements are made to a software program or digital file. If someone adds significant value or features to an existing digital asset, they may argue that they have the right to claim ownership or control over the modified version.

²⁸⁶ Thomas W. Merrill, *Accession and Original Ownership*, 1 J. LEGAL ANALYSIS 462, 500 n.26 (2009).

²⁸⁷ See *id.* at 464–69 (providing traditional and tangible examples of human-made additions to property in relation to accession).

²⁸⁸ *Id.*

²⁸⁹ *Id.* at 463, 473–74.

²⁹⁰ *Id.* at 475–76.

However, complexities arise when considering intellectual property rights and licensing agreements. In many cases, the original creator or rights holder of the underlying software or digital asset retains ownership and control over derivative works or modifications made to the original.²⁹¹

In another hypothetical situation, an online account, such as an Instagram™ account, might be abandoned by its original owner. A third party subsequently gains access to the account and made significant improvements, resulting in a substantial increase in the number of subscribers and the overall value of the account. This can also be seen as a potential case of applying the doctrine of accession to digital assets.

G. Legacy Concepts and Unclaimed Digital Assets: Conclusion

Applying legacy legal concepts to the virtual realm presents both promising potential and significant challenges. Different types of digital assets, such as social media accounts, video game assets, or AI-generated content, require tailored legal frameworks. Attempting to directly apply traditional legal doctrines, such as escheat, adverse possession, capture, accession, or finders' rights, to digital assets may be limited by their intangible nature and the complexities of intellectual property rights and contractual agreements. By recognizing the limitations of applying legacy concepts, tailoring legal frameworks to different types of digital assets, and engaging legal expertise, we can ensure effective legal solutions in the rapidly evolving digital landscape. This research highlights the need to move away from a one-size-fits-all approach, and instead adopt a nuanced and adaptable framework that considers the diverse nature of digital assets.

To effectively tackle this complex challenge, a tool that can systematize unowned digital assets, allocate suitable legal mechanisms to specific types of digital assets where applicable, and identify areas that necessitate new legislation is required. This tool should help determine whether adjustments to existing laws are sufficient or if an entirely new legal framework is required.

V. CREATING A GUIDING MATRIX TO CUSTOMIZE THE APPROACH TO PARTICULAR TYPES OF DIGITAL ASSETS AND IDENTIFY THE NECESSITY IN NEW LEGISLATION

As demonstrated in earlier sections of this paper, the realm of unclaimed digital assets is vast and diverse, rendering uniform regulation

²⁹¹ See *id.* at 468 (“For example, the author of a copyrighted book has the exclusive right to prepare a screenplay for a movie based on the book.”).

impractical.²⁹² Additionally, the rapid evolution of digital assets and the emergence of new types of digital assets poses a challenge for legislation to keep pace. Consequently, any legal or doctrinal definition of digital assets (claimed or unclaimed) is highly susceptible to becoming quickly outdated and of limited utility. Therefore, a more viable solution lies in adopting a principles-based approach or a guiding matrix for regulating digital assets, allowing for adaptability and responsiveness in the dynamic digital landscape.

In Figure 1, the proposed approach can be likened to a decision tree.

A. Step 1: Does the Object (the File) Have No Known Owner?

The initial question that needs to be considered is whether there is no known owner for the file or if there is no one willing to assume ownership. If so, the digital asset is categorized as unowned. Conversely, if the asset is owned or claimed by someone on legitimate grounds, it falls outside the scope of this research.

However, to reach a stage where one can definitively answer this question, there must be a mechanism in place to ensure that anyone interested becomes aware of the existence of the digital asset and its unclaimed status. One way that various jurisdictions have addressed this issue is by introducing “unclaimed digital asset registers,” which serve as a valuable tool to increase awareness of the existence of unclaimed digital assets and help interested parties find them.²⁹³ As described earlier, many jurisdictions, including Australia, Switzerland, Singapore, and several states in the U.S., introduced these registers in the last decade or included some types of digital assets into existing registers of unclaimed assets.²⁹⁴

While unclaimed digital asset registers are a step in the right direction, there are still numerous complications that need to be addressed to make them effective. One complication is how to properly identify all types of digital assets, accurately describe them, and classify them in a way that makes searching convenient and efficient.

1. Is the File (Digital Asset) Technically Inaccessible?

When someone has the legal right to a digital asset but cannot access it due to lost or inaccessible passwords or other technological barriers, the

²⁹² See *supra* Sections II–III.

²⁹³ See *Digital Asset Registers*, DIGIT. PRES. COAL. 4, <https://www.dpconline.org/docs/miscellaneous/training/1679-digital-asset-registers-getting-started/file> (last visited Dec. 14, 2023).

²⁹⁴ See *supra* Sections III.A, III.B.2.

situation may be considered a form of “lost property.”²⁹⁵ The beginning of this paper explored several cases of dormant crypto wallets, which are excellent illustrations of this issue.²⁹⁶ In some cases, exchanges, custodians, or other service providers establish custody rules to manage such assets.²⁹⁷ But in many cases, they do not.²⁹⁸ The complexity and unique nature of these situations bring three potential ways to treat any technically inaccessible digital asset depending on the probability of technical access being restored:

a. Not considering it a digital asset

This viewpoint arises when an asset is deemed non-functional and unlikely to ever regain functionality or accessibility. In this scenario, the asset may no longer be considered a digital asset because it cannot serve its intended purpose or be utilized. The lack of functional capability can lead to the conclusion that it has lost its status as an asset altogether.

b. Not considering it unclaimed

In certain cases, an individual may have legal rights or ownership over a digital asset, but is unable to gain technical access and control due to forgotten passwords, lost encryption keys, or other technological barriers. Despite the lack of immediate access, there is a recognized owner that can establish legal entitlement to the asset by turning to a crypto exchange, DAO member, a custodian, or a service provider. Consequently, the asset is not considered unclaimed, but rather ownership rights are in a pending status and may be regained.

c. Not considering it unowned

This perspective arises when there is someone who can establish ownership of the digital asset but is unable to gain technical access to it. The individual can demonstrate legal rights to the asset through proper documentation or contractual agreements but is impeded by technological limitations. However, it is likely that the owner can restore access by

²⁹⁵ See Moreland, *supra* note 276, at 3 (asserting that possessions involuntarily parted with constitute lost property).

²⁹⁶ See *supra* Section II.B.1.

²⁹⁷ See *supra* Sections II.B.3, III.B.1.

²⁹⁸ There are no set custody rules for managing digital assets although the SEC requested comments regarding digital asset securities custody in 2020. EVA SU, CONG. RSCH. SERV., R46208, DIGITAL ASSETS AND SEC REGULATION 14–15 (2021).

recovering their password, fixing software issues, or utilizing any other known method. In this case, the asset is not classified as unowned because there is a recognized owner, although technical access is temporarily hindered.

These three perspectives highlight the complexities that arise when determining the legal treatment of technically inaccessible digital assets. Each situation requires a careful evaluation of the asset's functionality, ownership rights, and technological constraints. However, all three outcomes are beyond the scope of this research. In no case should a technically inaccessible asset be automatically classified as unclaimed.

B. Step 2: Does Anyone Want to Own the Property? Does Anyone Have the Right to Claim Legal Ownership of the Property?

Now, at the stage where there is a technically accessible but unowned digital asset, two important questions need to be addressed: does anyone want to own the property, and does anyone have the right to claim legal ownership of the property? If both answers are affirmative, two potential outcomes emerge. First, the asset is considered temporarily unowned, and the person or legal entity expressing the desire to own it will acquire the property rights, effectively removing it from the scope of this research. Alternatively, a scenario arises where multiple individuals with both the right and desire to own the digital asset are involved. This situation transforms the digital asset into a subject of dispute, necessitating legal intervention to resolve the conflicting claims.

When no individual or legal entity possesses the right to own the asset, but someone expresses a desire to possess it, tools derived from legacy doctrines, such as adverse possession, finders' rights, capture, or accession, can potentially offer a solution.²⁹⁹ However, these doctrines may not be directly applicable to the virtual realm due to significant distinctions between virtual and physical property. In such cases, regulatory intervention becomes essential. In the scenario where the asset is abandoned or unclaimed, and there is no genuine interest in acquiring property rights over it, the question arises whether escheat or *bona vacantia* is a viable option. If either is a possible option, the regulations should establish rules governing the escheat process while considering the unique characteristics and challenges posed by digital assets. If they are not viable options, then another question arises: Can the digital assets potentially harm third parties?

²⁹⁹ See *supra* Sections IV.C–IV.F.1.

C. Step 3: Can the Digital Asset Potentially Harm Third Parties?

Not all digital assets are harmless; some can pose risks.³⁰⁰ Certain assets may contain malware.³⁰¹ Others may consist of large amounts of data that incur significant storage costs or cause slowdowns in the operation of other software.³⁰² It is essential to consider these potential hazards when evaluating the nature and impact of digital assets. The insights gained from this research lead to the conclusion that when no one expresses interest in the file and it poses no harm or burden, labeling it as an asset would unnecessarily complicate the legal system. These long-lasting consequences would serve no one's interests. Therefore, anyone in possession of the file should have no custodial obligations, and there should be no legal consequences associated with destroying, storing, or retaining it. Adopting this approach ensures a pragmatic and efficient legal system that focuses on assets of genuine value and importance, rather than needlessly burdening it with insignificant or non-harmful digital files.

The situation where a digital asset has the potential to cause harm is an important consideration. In the context of existing laws in the U.S. and countries with the most advanced regulation of digital assets, a clear solution may not currently exist, thereby highlighting the need for regulations to address this issue. This research has carefully considered the rights and responsibilities of the possessor of the digital asset. It is a reasonable assertion that the possessor should be granted the right to destroy a hazardous file within a reasonable timeframe, bearing the costs associated with its erasure. However, if the possessor chooses not to do so, the file should still be acknowledged as a digital asset, and the possessor should have the right to claim ownership. This can be achieved through a specifically regulated procedure or by utilizing regulations derived from legacy doctrines, such as adverse possession, finders' rights, capture, or succession, as described previously in this paper.³⁰³

Crucially, because the possessor assumes all duties and responsibilities related to owning the digital asset, it is only fair that they also bear the associated risks of any potential harm. Therefore, determining the extent

³⁰⁰ 14 *Digital Asset Risks to Remember*, COMMODITY FUTURES TRADING COMM'N 1, <https://www.cftc.gov/sites/default/files/2022-09/DigitalAssetRisks.pdf> (last visited Dec. 14, 2023).

³⁰¹ Neil Amato, *Digital Assets in Danger: How to Guard Against Hackers*, J. ACCT. (Feb. 3, 2023), <https://www.journalofaccountancy.com/podcast/cpa-news-digital-assets-danger-how-guard-against-hackers.html>.

³⁰² Chaim Rand, *Managing the Cloud Storage Costs of Big-Data Applications*, MEDIUM: TOWARDS DATA SCI. (June 26, 2023), <https://towardsdatascience.com/managing-the-cloud-storage-costs-of-big-data-applications-e3cbd92cf51c>.

³⁰³ See *supra* Section IV.

of potential harm should be left to the discretion of the possessor since they are assuming the risks and consequences of any negative outcomes. Establishing this framework strikes a balance between the rights and responsibilities of the possessor while also recognizing the need to consider potential harm. This approach considers the evolving nature of digital assets and emphasizes the importance of providing clear guidelines and regulations that safeguard the interests of both the possessor and any potential parties who may be affected by the digital asset.

VI. CONCLUSION

As reviewed in this research, the nature of unclaimed digital assets is complex. The lack of a standardized definition of a digital asset and criteria for identifying and categorizing digital assets that qualify as “unclaimed” poses a challenge. This complexity underscores the need for a nuanced and adaptable legal framework that considers the unique characteristics of the phenomenon. While all digital assets are files or electronic records, not every file can be considered a digital asset. Digital assets range from widely recognized ones, like cryptocurrencies and NFTs, to less obvious ones, such as social media accounts, digital identities, and digital game assets. Additionally, there are files that may be classified as digital assets depending on specific circumstances or the jurisdiction, as well as files or records that have the potential to become digital assets in the future.³⁰⁴

This research has highlighted that the current regulatory landscape both in the U.S. and internationally lacks a comprehensive and systematic approach, resulting in fragmentation within the legal framework. This fragmentation poses challenges in effectively addressing the various aspects of unclaimed digital assets. Furthermore, there is a notable focus on regulating cryptocurrencies, money surrogates, and NFTs within existing legal frameworks. However, these fragmented attempts to fit the phenomena of unclaimed digital assets into traditional legal structures often extend regulations into inappropriate areas, leading to burdensome rules and regulations that impede innovation.³⁰⁵

The examination of legacy legal doctrines, such as escheat, adverse possession, finders’ rights, capture, and accession, has provided valuable insights into their potential applicability to unclaimed digital assets. While these doctrines may require adaptation to suit the virtual realm, they offer valuable frameworks for addressing ownership disputes and establishing legal rights in the context of unclaimed digital assets. However, the

³⁰⁴ See *supra* Sections I–II.

³⁰⁵ See *supra* Section III.

applicability of these doctrines is constrained by the intangible nature of unclaimed digital assets and the complexities surrounding intellectual property rights and contractual agreements.³⁰⁶

The impact of technology itself cannot be ignored. Examples, such as dormant crypto wallets and accounts, in decentralized autonomous organizations highlight the technological specifics, flaws, and obsolescence that can render digital assets inaccessible or unusable. These factors add another layer of complexity to their legal treatment and raise questions about their classification as assets from a legal standpoint. The transferability and control of digital assets present significant challenges, with technical tools and methods sometimes conflicting with legal norms and lack of enforceability.³⁰⁷

The research demonstrates that adopting a uniform approach to address all types of unclaimed digital assets is not effective. The formation of a legal framework for these assets must consider the specific nature of each type of asset and the challenges associated with it, as well as the dynamic nature of emerging technology that constantly brings new types and classes of digital assets into existence. Therefore, the development of classifications that can be used to create a legal framework for addressing the issue of unclaimed digital assets is an important foundation for elaborating an effective approach. In this paper, several variants of categorizing unclaimed digital assets based on various criteria are offered.³⁰⁸

This paper proposes the adoption of a principles-based approach or a guiding matrix for regulation, moving away from prescriptive guidelines. This approach enables the legal system to effectively address the complexities associated with the diverse and dynamic nature of unclaimed digital assets. By embracing this principled framework, the legal system can maintain flexibility and adaptability, keeping pace with rapid technological advancements and the emergence of new asset types. In developing this framework, various factors, including monetary or sentimental value, potential dangers, risks of harm, and maintenance costs associated with unclaimed digital assets, should be considered. This methodology allows differentiation between objects that require regulation and those that do not, avoiding excessive regulation and the application of inconsequential norms.³⁰⁹

³⁰⁶ See *supra* Section IV.

³⁰⁷ See *supra* Section II.C

³⁰⁸ *Id.*

³⁰⁹ See *supra* Section V.

Implementing the proposed model highlights several areas that require significant regulation. These areas include the establishment of standards for unclaimed digital asset registers, the adaptation of legacy concepts to be applicable to digital assets, and the clarification of the rights and obligations of custodians of unclaimed digital assets. Addressing these areas through tailored strategies allows for a balance between promoting innovation and safeguarding the interests of all parties involved. Furthermore, the proposed model contributes to a broader understanding of what should be considered a digital asset in general. By evaluating the various characteristics and considerations of unclaimed digital assets, one gains insights that help shape the definition and classification of digital assets more broadly.

Figure 1

