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Legal issues of digital asset inheritance from an Islamic law perspective

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The rise of virtual assets has presented significant legal challenges for inheritance systems worldwide. This article examines the intricate relationship between traditional inheritance laws and the distinctive characteristics of digital assets, with a focus on the legal challenges associated with digital inheritance from an Islamic law perspective. By employing a comparative approach, the research examines how various legal systems address the succession of digital assets, highlighting the primary conflicts that arise when restrictive terms of service from platforms clash with established inheritance laws. Furthermore, it explores how privacy regulations, such as the General Data Protection Regulation (GDPR), create barriers to data access for rightful heirs. The findings reveal that existing laws are either lacking or inadequate in addressing digital assets, particularly cryptocurrencies held on exchanges and new platforms. The research proposes a normative framework that aims to strike a balance between legitimate inheritance rights and privacy concerns, considering relevant legislation and court rulings. Ultimately, the study concludes that advancements in technology, enhanced estate planning tools, and legislative reform are necessary to ensure a smooth transfer of digital assets to future generations.

Munculnya aset virtual telah menghadirkan tantangan hukum yang signifikan bagi sistem warisan di seluruh dunia. Artikel ini mengkaji hubungan yang rumit antara hukum warisan tradisional dan karakteristik khas aset digital, dengan fokus pada tantangan hukum yang terkait dengan warisan digital dari perspektif hukum Islam. Dengan menggunakan pendekatan komparatif, penelitian ini mengkaji bagaimana berbagai sistem hukum menangani suksesi aset digital, menyoroti konflik utama yang muncul ketika ketentuan layanan yang membatasi dari platform bertentangan dengan hukum warisan yang telah ditetapkan. Lebih lanjut, penelitian ini mengeksplorasi bagaimana peraturan privasi, seperti Peraturan Perlindungan Data Umum (General Data Protection Regulation atau GDPR), menciptakan hambatan akses data bagi ahli waris yang sah. Studi ini menunjukkan bahwa hukum yang ada kurang memadai atau tidak cukup untuk menangani aset digital, khususnya mata uang kripto yang disimpan di bursa dan platform baru. Penelitian ini mengusulkan kerangka kerja normatif yang bertujuan untuk mencapai keseimbangan antara hak warisan yang sah dan masalah privasi, dengan mempertimbangkan undang-undang dan putusan pengadilan yang relevan. Pada akhirnya, penelitian ini menyimpulkan bahwa kemajuan teknologi, peningkatan alat perencanaan warisan, dan reformasi legislatif diperlukan untuk memastikan transfer aset digital yang lancar kepada generasi mendatang.

Keywords: *digital inheritance; estate planning; platform policies; privacy rights; succession law.*

Introduction

The emergence of digital technologies has profoundly reshaped human activities, ushering in an era where personal, financial, creative, and social value increasingly exist in intangible forms. From vast digital archives of emails and photos to valuable cryptocurrency portfolios, individuals now accumulate extensive digital footprints that hold both monetary

and sentimental significance (Rosele et al., 2022). Social media profiles, instant messaging histories, subscription-based digital libraries, and intangible brand assets further enrich this digital domain, which is often global in scope and bound by complex service agreements.

Despite the ubiquity of such assets, inheritance frameworks worldwide remain predominantly grounded in concepts developed for tangible property. Real estate, physical chattels, and traditional bank accounts correspond more readily to well-established legal doctrines regarding ownership and transfer upon death. By contrast, the intangible nature and contractual structure of digital assets frequently disrupt the straightforward application of succession rules (Yolanda, Paramitha and Putra, 2024). Notably, many digital platforms regard account holders as licensees rather than full owners, effectively curtailing their ability to bequeath what they have paid for or create online.

The legal inheritance of digital assets presents six fundamental challenges that require urgent attention. Digital assets lack a specific legal definition, often failing to fit within traditional property law frameworks, resulting in inconsistent judicial decisions and legal ambiguity across jurisdictions. Restrictive platform terms of service frequently conflict with testamentary wishes through non-transferability clauses that supersede inheritance rights. Privacy laws, such as the General Data Protection Regulation, create barriers by limiting data access, even to legitimate heirs, while concerns over third-party privacy interests complicate disclosure decisions. Technical obstacles, particularly with cryptocurrencies requiring private keys, can render assets permanently inaccessible without proper succession planning. Jurisdictional conflicts arise when users, platforms, and servers operate across different countries with varying legal approaches to digital property. Finally, standardised estate planning instruments for digital assets remain underdeveloped, creating knowledge gaps among legal professionals and testators that impede effective digital inheritance planning (Kraiwanit, Limna and Suradinkura, 2025).

This tension between inherited rights and contractual restrictions highlights a critical gap in modern inheritance law. As a result, the question of who inherits a social media feed, an iTunes music collection, or a cryptocurrency portfolio is becoming increasingly urgent. The legal community is now prompted to assess whether these intangible items qualify as property, intangible intellectual property, personal data, or a unique, emergent asset class

(Chulkov and Kazaryan, 2020). The classification itself influences whether heirs can legally claim the right to access, maintain, delete, or monetise the digital estate.

Moreover, strong privacy protections in many jurisdictions, notably under the European Union's General Data Protection Regulation, restrict data sharing unless explicit consent has been granted, further complicating digital inheritance (Hayajneh, 2016). While protecting individual privacy is crucial, it also clashes with the legitimate expectations of heirs seeking closure, sentimental value, or financial entitlements. Courts in various jurisdictions have grappled with these complexities. For example, in 2018, Germany's Federal Court of Justice ruled that digital records, including social media accounts, are analogous to physical diaries or letters and may thus pass to heirs under general succession laws (Mijatovic, 2025). In the United States, state-level adoption of the Revised Uniform Fiduciary Access to Digital Assets Act grants fiduciaries varying degrees of access to a decedent's digital accounts, although this access is often conditioned on explicit user instructions or the platform's own policies (AllahRakha, 2025b).

In parallel with these legal developments, the transformative rise of decentralised digital assets, such as cryptocurrencies and NFTs, underscores a separate subset of inheritance challenges. These holdings generally reside on public blockchains and require cryptographic private keys to authorise any transfer (Singh, Shrivastava and Ruj, 2022). Without secure and legally recognised mechanisms to share or retrieve these keys, it can be impossible for rightful heirs to claim ownership. Unlike a traditional bank, a blockchain network lacks a centralised authority to override security protocols or to reset a lost key, thus locking out heirs if no prearranged plan exists (Omoola and Ibrahim, 2023).

Given the swift pace of technological innovation, numerous commentators warn that the legal system faces a race against obsolescence. While a growing number of platforms offer "legacy contact" features or "inactive account manager" settings to guide posthumous handling, the variety of approaches can be bewildering and lacks uniform legal enforceability. In many instances, users remain unaware of these features or incorrectly assume that their digital holdings function like physical property, to be passed on through a conventional will or trust.

This article aims to critically examine these issues and offer a deeper perspective on the

pressing need for legal reforms and robust estate-planning strategies that address digital inheritance. By integrating a doctrinal legal research approach with comparative analyses of legislative and case law developments, this paper examines the conceptual basis of digital assets, existing legislative frameworks, contractual conflicts, privacy protection concerns, technical challenges associated with decentralised assets, and potential solutions for digital inheritance in an increasingly digitised world. This study is strengthened by Islamic law's perspective on various possibilities within the Islamic community.

Method

This research employs a doctrinal legal research methodology, utilising comparative and normative analysis techniques. Research begins with a detailed examination of primary legal sources, including statutes, regulations, and court decisions, to assess the current legislative framework regarding the inheritance of digital assets. Additionally, academic literature on digital inheritance is systematically reviewed to discover salient theoretical frameworks and dominant academic discourse in this new area.

Legal comparative analysis is a crucial component of research, examining how legal systems address digital inheritance. This entails a comparative analysis of evolution in the United States, from the Uniform Fiduciary Access to Digital Assets Act to the Revised UFADAA, and landmark cases such as Justin Ellsworth v. Yahoo. Analysis is conducted on the approach taken in the European Union, with a focus on the limitations of the GDPR and Germany's 2018 Federal Court of Justice ruling, which makes digital accounts inheritable assets. Comparative legal information from China, Russia, and India offers diverse perspectives on digital inheritance.

Legal history theory is employed in research to examine how principles of inheritance persist or evolve when applied to digital assets, striking a balance between stability and alignment with technological advancements. Islamic democratic state theory is employed to evaluate how legal systems strike a balance between contractual freedom, privacy rights, and laws of inheritance.

Primary data collection involves a detailed examination of court decisions in various jurisdictions, legislative frameworks, and legal scholarship related to digital inheritance.

Secondary data sources include regulating agency documents, industry whitepapers, and technological specifications of digital asset platforms. Methods of content analysis are employed to identify dominant themes and principles in judicial arguments and legislative purposes related to digital inheritance rights.

Islamic Law and economics analysis is incorporated into the methodology to assess the efficiency of different digital asset succession systems, with a particular emphasis on transaction costs and resource allocation. The research acknowledges that technological limitations play a significant role in legal analysis, considering that technological systems often impact the effective enforcement of legal rights in digital environments.

Using this integrated methodological framework, research combines doctrinal findings with policy proposals and pragmatic recommendations for lawmakers, legal professionals, and those working on specific issues of digital inheritance in contemporary society.

Conceptual foundations and legal classifications

Digital assets occupy an ambiguous legal space because they don't fit clearly into traditional property law categories. Instead, they often embody a combination of intellectual property rights, contract-based licenses, and intangible assets. This confusion is exemplified by e-book marketplaces or digital streaming services: users pay for the right to access content, but typically cannot resell, donate, or bequeath these rights upon death (Fedosenko, 2025).

Many jurisdictions use the concept of "property interest" to signify a transferable right. However, digital assets are increasingly subject to end-user license agreements that only permit personal use. These EULAs often operate as a blanket prohibition against inheritance, thereby generating friction with the principle that one's estate includes all property owned at the time of death. This tension reveals a fundamental disconnect between traditional property concepts and the contractual frameworks governing digital consumption (Durovic and Willett, 2023).

Digital property can hold immense value. A large-scale influencer's social media account, for example, may provide consistent revenue streams from sponsorships. Similarly, domain names for commercial websites can be extremely lucrative intangible assets. Even personal items, such as family photos or genealogical documents, hold sentimental value. These

varied types of digital holdings illuminate the broad range of emotional, cultural, and economic stakes in digital inheritance disputes (Ryu and Han, 2021).

The categorical ambiguity extends to novel forms of digital assets, such as in-game items and virtual world property. As virtual economies grow in economic significance, questions about the inheritance status of valuable digital items become increasingly pressing. Some jurisdictions have begun recognising such virtual items as property for certain legal purposes; for instance, Dutch courts have established that RuneScape game items constitute goods that can be stolen under criminal law, though the implications for inheritance remain unclear (Gulyamov, Egamberdiev and Naeem, 2024). This judicial recognition highlights the evolving conceptualisation of digital property but does not fully resolve succession questions.

Legislative approaches across jurisdictions

The United States: From UFADAA to RUFADAA

Early attempts to address digital inheritance in the U.S. culminated in the Uniform Fiduciary Access to Digital Assets Act of 2014, which initially provided broad access to fiduciaries. However, due to significant privacy concerns and industry pushback, the act underwent substantial revision. Through lobbying efforts by technology companies concerned about user privacy and liability issues, the Revised Uniform Fiduciary Access to Digital Assets Act was developed in 2015.

The Revised Uniform Fiduciary Access to Digital Assets Act's central premise is user-directed control through a hierarchical framework. Online tools offered by service providers, such as Facebook's Legacy Contact, allow users to designate a successor and take priority over all other instructions. In the absence of such online tool directives, the user's will, trust, or power of attorney provisions may grant fiduciaries access to digital assets. Finally, if no user directions exist through either online tools or legal documents, the service provider's terms of service agreement govern access, typically restricting the transfer of accounts posthumously.

Although the Revised Uniform Fiduciary Access to Digital Assets Act provides a more consistent framework, it requires an explicit grant of access, effectively defaulting

to non-disclosure if the user remains silent. Critics also argue that it does not override the fundamental issue that some assets are licensed rather than owned. The Act tilts the balance of power toward service providers by prioritising platform-specific tools over traditional estate planning documents, potentially undermining the effectiveness of comprehensive will provisions (Rodrigues, 2020).

The state-by-state adoption of the Revised Uniform Fiduciary Access to Digital Assets Act has created a more predictable environment for digital inheritance in the United States, but implementation varies. As of 2024, nearly all states have enacted some version of the legislation, though with local modifications that can create coordination challenges for estates with assets spanning multiple jurisdictions (Aliyu, Abd Wahab and Kamis, 2025).

European Union: Balancing Privacy and Inheritance

The EU context is shaped by stringent privacy rules under the GDPR. While the regulation does not explicitly govern post-mortem data rights, many providers err on the side of caution, refusing to disclose deceased users' data out of fear of legal liability. Individual Member States have adopted diverse positions. France's *"Loi pour une République numérique"* includes limited provisions for digital accounts after death, and Germany's Federal Court of Justice 2018 ruling recognised Facebook accounts as inheritable under the analogy of diaries and letters (Dominicé and Haux, 2020). However, the lack of a comprehensive EU-wide directive fosters uncertainty, as national approaches differ in scope and interpretation (Vučković and Kanceljak, 2019).

The French model is particularly noteworthy for its "opt-out" approach to digital inheritance. Under the Digital Republic Act, individuals must explicitly state if they do not wish their digital heirs to access their accounts; otherwise, contractual terms prohibiting posthumous access can be overridden (Harbinja, 2019). This contrasts with the Revised Uniform Fiduciary Access to Digital Assets Act's "opt-in" system and represents a fundamentally different balance between testamentary freedom and contractual autonomy.

The 2018 German Federal Court case (III ZR 183/17) marked a watershed moment in European digital inheritance jurisprudence. The court held that a Facebook account should be accessible to heirs on the same basis as physical letters and diaries, effectively

establishing that social media accounts form part of the deceased's estate, regardless of the platform's terms of service. This decision has influenced legal thinking throughout the EU, though its implementation remains inconsistent across member states (Buitelaar, 2017).

China and Russia: Emerging Regulatory Recognition

China's Civil Code acknowledges that digital property can be inherited (Akramov et al., 2024). However, detailed regulations on procedures are incomplete, leaving it unclear whether intangible assets, especially those on foreign or global platforms, can be transferred smoothly. Russia similarly recognises digital rights under Article 141.1 of the Civil Code, but real-world inheritance processes for cryptocurrencies or social media accounts remain underdeveloped. Neither legal system provides robust clarity on how to handle decentralised assets, cross-border data, or conflicting TOS.

The Chinese approach is particularly noteworthy for its attempts to integrate digital assets into a comprehensive civil code framework. Article 127 of the Civil Code recognises "network virtual property" as protected by law, though implementation guidelines remain forthcoming. This statutory recognition provides a foundation for digital inheritance rights, but practical challenges persist in enforcement, particularly for assets held on international platforms (Hu, 2024).

Russian legislation has taken steps toward recognising cryptocurrencies as inheritable property through the 2021 amendments to tax legislation, which explicitly address digital currencies as taxable property. However, the intersection between this tax recognition and inheritance law remains underdeveloped (Savelyev, 2017).

India: Lack of Direct Provisions

India's Information Technology Act (2000) does not address digital inheritance. Accordingly, if a platform's TOS precludes post-mortem transfers, heirs have limited legal recourse. The Indian legal community, like many others, calls for reforms to recognise intangible digital property within existing inheritance statutes or to promulgate new legislation aimed at bridging the gap (Sharma, 2024). The absence of clear statutory guidance has led to inconsistent judicial approaches, with courts struggling to apply traditional succession principles to digital assets (Gotardo and Rocha, 2025).

Despite this legislative gap, Indian courts have begun addressing digital assets in other contexts. In 2020, the Delhi High Court ruled that cryptocurrencies, while not legal tender, constitute intangible property that can be owned and transferred—a determination with potential implications for inheritance cases. Additionally, the Personal Data Protection Bill (in various iterations) has considered posthumous data rights, though comprehensive legislation remains pending (Rosadi, 2018).

Contractual conflicts and estate administration challenges

A hallmark of digital inheritance disputes is the direct clash between testamentary freedom, the right of individuals to distribute their estate according to their wishes, and the binding effect of private contracts. Classic property law dictates that a valid will supersedes earlier agreements about asset disposition, but modern digital platforms often limit user rights through TOS. This creates what is a "private ordering of succession", where corporations, rather than legislatures or courts, effectively determine inheritance outcomes (Kramer-Smyth, 2018).

The case of Justin Ellsworth versus Yahoo illustrates this conflict. The father of Justin Ellsworth, a U.S. Marine killed in action, sought access to his son's email account to preserve memories. Yahoo's TOS stipulated that accounts were non-transferable and subject to deletion upon the user's death. A court eventually ordered Yahoo to release the content, but did not require the platform to grant direct access to the account (Kneese, 2019). This partial remedy highlights the courts' reluctance to completely override platform policies while still acknowledging families' legitimate interests in accessing digital legacies.

Similar cases have emerged globally, including the landmark German Federal Court case involving Facebook access and the French case of Janloup Sieff, where heirs sought access to a deceased photographer's Apple account containing valuable professional works. These disputes underscore the limitations of current legal frameworks in balancing emotional, economic, and privacy interests in digital inheritance matters.

Such cases highlight the tension between contractual obligations and what many consider the moral or legal imperative to allow families to manage a decedent's data for emotional, administrative, or financial reasons. In several instances, courts have required partial disclosure

of data, a compromise that satisfies some emotional needs but may not fulfil broader estate management or property claims. Compromises often leave neither party fully satisfied, indicating the need for more comprehensive legislative solutions (Gordon, 2023).

Privacy protection and third-party interests

Privacy is a compelling reason to withhold digital assets from heirs. From chat histories to confidential documents stored in the cloud, decedents might not have intended their families or personal representatives to see sensitive information. In the absence of an unambiguous directive in the decedent's will or digital settings, service providers often assume that continued confidentiality is best aligned with privacy norms (Juhász, 2025).

Digital communications rarely involve only the decedent; emails, social media threads, or collaborative platforms contain data about living persons who may not consent to such disclosures. This may trigger a situation where granting heirs blanket access could violate the privacy or data protection rights of other parties. The 'relational' nature of digital assets, where one person's data is inextricably linked with that of others, creates complex multi-party privacy interests (Wieringa et al., 2021).

The right to be forgotten, a principle recognised in European law, raises additional questions in the context of inheritance. If a living person had requested deletion of communications with the deceased, should those communications nonetheless be available to heirs? The intersection of data deletion rights and inheritance principles creates novel legal puzzles that few jurisdictions have explicitly addressed (Edwards, 2004).

In some jurisdictions, courts have mandated that providers create a curated set of communications or data logs that are stripped of third-party identifying details before releasing them to heirs. However, such processes are time-consuming and may be incompatible with a site's privacy policies, resulting in a patchwork of partial remedies and ongoing legal battles. Technical difficulties in differentiating private conversations and retaining useful content contribute to such compromises (Toygar, Rohm and Zhu, 2013).

Islamic law perspective on digital inheritance

Islamic law introduces a new complexity to digital asset inheritance. Islamic inheritance law has established standard formulas for distributing material possessions, but digital properties

pose new challenges. According to Sharia principles, any asset with economic value and rightful possession should be inheritable under Islamic laws of succession. However, digital asset classification within Islamic property categories (*mal*) remains underdeveloped.

In Islamic law, possession and control typically establish ownership. With digital assets being secured with passwords or private keys, questions have been raised about whether such control can be considered actual ownership that can be transferred upon death according to predetermined Islamic inheritance shares. Moreover, Sharia issues regarding the permissibility (*halal*) of certain digital assets, such as cryptocurrencies or NFTs associated with illicit material, complicate digital inheritance in Islamic law.

Islamic jurisprudence councils and experts are only beginning to address such issues, and hence, divergent views exist regarding whether digital assets can be regarded as financial rights, intellectual property, or usufructuary rights. Such legal uncertainty is influencing Muslim societies worldwide as they strive to integrate their digital estates within the secular and religious laws of inheritance (Khalfaoui et al., 2024).

Institutions such as the Islamic Financial Services Board and national Sharia boards are beginning to release guidelines for cryptocurrencies, which can impact inheritance strategies. For instance, Malaysia's Securities Commission Shariah Advisory Council has approved trading in cryptocurrencies under specific conditions, with the potential to shape how digital assets are treated in inheritance (Bekiroğlu, El Amri and Mohammed, 2025). Similarly, researchers are debating whether digital assets should be subjected to zakat (mandatory charitable donation) and hence indirectly sanction their status as rightful property (Nabeel and Sumathy, 2023).

In Indonesia, the discourse on digital inheritance under Islamic law has gained significant attention. The transformation of inheritance law in the digital era, specifically addressing challenges, opportunities, and adaptive strategies for Indonesia's legal system. Their research emphasises the need for reconciling Islamic inheritance principles with modern digital asset concepts. The protection of heirs' rights to digital assets in Indonesia is becoming increasingly important as digital technology usage grows, requiring effective regulation within the existing legal framework to address access and control issues, an incomplete legal framework, and rapid technological advancements.

Additionally, the analysis of inheritance rights of inactive digital accounts from an Islamic legal perspective, utilising *qiyās*, analogical reasoning, to develop legal protection mechanisms (Mayasari et al., 2023; Ma'mun, 2011). They argue that inactive digital account assets should be treated as inheritable property, drawing parallels between digital accounts and the Islamic concept of *wadi'ah*, trusteeship, to establish legal rights for heirs. This approach provides a framework for integrating traditional Islamic jurisprudence with modern challenges related to digital asset inheritance. Furthermore, there is an urgent need to harmonise positive law and Islamic law to accommodate the unique characteristics of digital assets like cryptocurrencies, e-wallets, and NFTs, ensuring fair and transparent distribution among heirs in Indonesia's evolving digital economy (Ali, Salikin and Kosim, 2025).

These developments in Indonesian Islamic jurisprudence demonstrate how scholars are actively working to bridge the gap between traditional Islamic inheritance principles and modern digital asset realities, providing valuable insights for other Islamic jurisdictions facing similar challenges.

Technical barriers in cryptocurrency inheritance

Cryptocurrency, being a digital asset, poses inherently complex issues in inheritance, driven more by technological design rather than contractual or legal constraints. Ownership in blockchain-based systems, such as Bitcoin or Ethereum, is directly linked to possession of a private key (Hernando-Corrochano, Pastor-Vargas and Hernández-Berlinches, 2025). If the key is lost or if the decedent never shared it, no legal mechanism could override the cryptographic barrier. Consequently, estate planners must integrate instructions for securely storing private keys, or risk losing entire digital fortunes. This technical reality has resulted in the permanent loss of billions of dollars in cryptocurrency value due to the absence of adequate key succession planning (Cui, Gao and Wang, 2024) .

Heirs might have more success claiming assets from centralised exchanges, which control user wallets and could respond to valid court orders or probate documents (Artamkin, 2023). However, many crypto enthusiasts prefer self-custody for security or ideological reasons, meaning they alone hold the private keys. This impetus can inadvertently render the inheritance process precarious if no backup plan is set.

Several technical solutions are emerging to address the challenges of cryptocurrency inheritance. These include "dead man's switch" mechanisms that automatically transfer assets after periods of inactivity, multi-signature wallets requiring approval from multiple parties for transactions, and specialised cryptographic inheritance protocols (Katuk, Wahab and Kamis, 2023). Social recovery systems, where designated trusted contacts can collectively regain access, represent another promising approach; however, these systems remain in early developmental stages (Pedin, Siasi and Sameni, 2023).

Non-fungible tokens (NFTs) purport to convey unique ownership of digital art, music, or collectables. Yet the underlying media file may be stored off-chain on traditional servers, raising uncertainties about the legal effect of owning an NFT. Whether or not an NFT is fully inheritable depends on how the smart contract and associated licensing agreement define usage rights. The bifurcated nature of NFTs, with ownership records on blockchain but content often hosted elsewhere, creates complex inheritance scenarios where heirs might inherit the token without guaranteed access to the associated content (Schwiderowski et al., 2023).

Inheritance of tokens associated with decentralised autonomous organisations (DAOs) or rights to control in blockchain protocols introduces further complexities. Such holdings typically grant rights to vote or participate in digital communities, which are more closely aligned with membership interests than with traditional property (Zhuk, 2025).

Emerging solutions and best practices

Major companies are developing features that enable users to designate a person to manage their accounts in the event of their death. Facebook's Legacy Contact feature allows partial control over a memorialised account but excludes specific activities, such as accessing private messages, unless specifically permitted. Google's Inactive Account Manager enables data to be transferred to a specified contact following inactivity (AllahRakha, 2025a). Apple launched the Digital Legacy program in 2021, which allows users to name a maximum of five "Legacy Contacts" to access their Apple ID information in the event of death, although access to specific encrypted data is still out of reach (Holt et al., 2024).

These platform-specific tools represent a significant advancement but suffer from

several limitations. Users must configure each service separately, creating a fragmented approach to digital estate planning. Additionally, the features are often buried deep in settings menus, leading to low awareness and adoption rates. A study found that fewer than 10% of social media users had configured posthumous account settings, despite widespread concern about digital legacy issues (Harbinja, McVey and Edwards, 2024).

While such legacy tools represent a proactive shift, they still rely on the user's awareness and do not comprehensively address licensed content that is, by contract, non-transferable. Moreover, they do not necessarily override privacy constraints regarding personal communications.

Blockchain-based testamentary tools, sometimes referred to as "smart wills", can automatically transfer digital assets upon cryptographic proof of death. For instance, an oracle service might verify a registered death certificate, triggering the release of private keys to designated beneficiaries. Despite the conceptual promise, widespread adoption is hindered by the fact that most digital providers do not integrate with third-party smart contracts, and legal recognition of purely automated testamentary dispositions remains nascent.

Companies specialising in digital inheritance have emerged to fill the market gap. Services like Clocr, Everplans, and Dead Man's Switch offer digital estate planning tools that integrate with existing legal frameworks, addressing the technical complexities of transferring digital assets (Chowdhury, 2025). These third-party services attempt to provide a unified solution to the fragmented landscape of digital inheritance, though questions remain about their long-term viability and legal standing (Yang, 2025).

Some practitioners advocate for secure digital vaults managed by notaries or licensed custodians, where users can store credentials, private keys, or instructions accessible only upon proof of death. Such vaults, whether blockchain-based or reliant on traditional cryptographic security, can address the fundamental problem of losing access to intangible assets (Liu et al., 2025). This approach, however, introduces a trust dimension; users must be confident in the custodian's longevity, security protocols, and legal compliance.

Multiple legislators worldwide have proposed reforms to define digital assets as property for inheritance purposes, mandate inheritance-disposition tools for large digital

platforms, and develop partial disclosure regimes that enable account management while honouring third-party privacy interests (Wendehorst, 2023). While these proposals diverge in scope, they collectively signal a growing awareness of the need for statutory clarity that can outpace or supersede platform-specific TOS.

Conclusion

Digital inheritance represents a critical intersection between evolving technology and traditional legal frameworks that demands urgent legislative attention. This research reveals fundamental tensions between contractual restrictions imposed by digital platforms and established principles of testamentary freedom, creating unprecedented challenges for estate administration. The comparative analysis demonstrates that while jurisdictions like Germany and the United States have made progress through judicial decisions and legislative reforms, such as the Revised Uniform Fiduciary Access to Digital Assets Act, significant gaps remain in addressing the unique characteristics of digital assets, particularly cryptocurrencies and decentralised holdings.

The technical barriers inherent in blockchain-based assets, combined with privacy protection concerns under regulations like the General Data Protection Regulation, create complex, multi-layered obstacles that traditional probate law cannot adequately address. The international nature of digital assets further complicates inheritance processes, as assets may be governed by multiple jurisdictions with conflicting approaches to digital property rights.

The research identifies an urgent need for comprehensive legislative reforms that recognise digital assets as inheritable property while balancing privacy rights and contractual freedoms. Solutions must integrate technological innovations such as smart contracts and digital vaults with existing legal frameworks, supported by standardised estate planning tools and enhanced professional education. Without coordinated international efforts to harmonise digital inheritance laws, significant portions of digital wealth risk permanent inaccessibility upon death, undermining fundamental inheritance principles and creating inequitable outcomes for bereaved families seeking access to both economically valuable and sentimentally important digital legacies.

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