

The Future of Ownership: A Review of “*The End of Ownership: Personal Property in the Digital Economy*”

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Abstract: This paper reviews the book *The End of Ownership: Personal Property in the Digital Economy*. Against the backdrop of rapid digital technology development, intellectual property holders are strengthening control over intellectual products through technical means such as digital rights management and end-user license agreements, while consumers' dominion over their purchased products continues to weaken. With the rise of cloud storage and streaming services, the trend of ownership shifting to usage rights has become irreversible. The advent of the Internet of Things era has further deepened the binding of software and hardware, with consumer use of products being preset and restricted. This paper analyzes the causes, processes, and impacts of the end of ownership, explores legal responses to this situation, and points out that digital technology has not only changed the logic of personal property operation but also profoundly altered relationships between people and things, and between people themselves. The paper argues that striving to restore people's autonomy over things and themselves is a collective appeal of this era, and maintaining a clear understanding of digital technology while preserving independent personality among the general public is an urgent new enlightenment needed today.

Keywords: Ownership, Digital Technology, Intellectual Property, Digital Rights Management, Consumer Rights, Personal Autonomy.

1. INTRODUCTION

The phrase "the end of ownership" initially sends shockwaves through one's mind, creating a sense that the world around us is collapsing and nothing remains reliable. This is precisely the powerful message that authors Aaron Perzanowski and Jason Schultz convey as they reveal the profound tension between digital technology, intellectual property, and personal property rights. Against the backdrop of the internet's vigorous development, intellectual property holders can and are using various digital technologies to define how consumers use products and their boundaries. Consumers' control over intellectual property products and even tangible goods is rapidly declining, and personal property ownership faces unprecedented challenges. In this context, the authors express concerns about the end of ownership and further raise and strive to answer the crucial questions of our time: how to protect personal property rights, especially those of consumers, in the digital age, and how to coordinate digital technology with personal property rights.

2. WHOSE OWNERSHIP HAS ENDED?

The book begins with the topic of copyright, where the most severe crisis facing the copyright system in the digital age is the survival of reproduction rights. Given the importance of controlling copies, reproduction rights have always held a fundamental position in the copyright system. In the Gutenberg era, reproduction required considerable demands on venues, equipment, and personnel, but digital technology has made reproduction no longer dependent on tangible carriers of the hard copy era. It can be completed with simple computer operations, with reproduction costs decreasing geometrically while reproduction speed and opportunities increase geometrically, making it increasingly difficult for copyright holders to monitor reproduction.

Copyright holders first thought of countermeasures targeting copy production itself, namely setting up obstacles to copying through technical means. The software industry was the first to apply license technology to control legitimate software installation on a limited number of hardware devices. Software copyright holders eventually evolved licenses into the sole source of rights for software installation and use, and subsequently, such technical measures were further extended to digital books, movies, and music. Upgraded digital rights management technology further restricts the hardware matching digital products, which not only limits the number of copies but also defines how digital products are used. Various vendors have successfully bundled specific hardware products through digital rights management technology, promoting the synchronized use and sales of software and hardware, which in turn has consolidated the market position and discourse advantage of intellectual property holders. For example, Sony applied for a patent to lock personal game discs with specific users or game consoles, and Apple iTunes' digital rights management content stipulates that users have the right to use iTunes products on five iTunes-authorized devices. However, the incompatibility of digital rights management technology products caused market fragmentation, forming isolated islands that brought many inconveniences to consumers. Unsurprisingly, digital rights management technology and license technology together faced user opposition and were continuously cracked. "More restrictions lead to more counterattacks," and facts have proven that all technical measures can be cracked, with the time needed for cracking becoming shorter and shorter. "Ubisoft's digital rights management didn't even survive a day." This pure technical game easily forms a tug-of-war situation, with huge costs but not necessarily good results.

If perfect technical control over digital copy reproduction remains impossible, then the only option is to eliminate copies. With the rise of cloud storage (a storage method where users don't need to download copies to local hard drives) and corresponding streaming playback methods (playback using data streams), intellectual property holders creatively developed streaming services and initiated end-user license agreements (EULA), successfully switching from product transfer to licensed use, opening the path to eliminating copies. Intellectual property holders have maximized the breadth, convenience, and speed of licensed use, eliminating consumers' need to copy. For example, subscription services are extremely attractive in terms of price, choice, and flexibility. Consumers can complete reading and appreciation of works online, saving the download process and local hard drive storage space. What consumers immediately purchase, although appearing to be digital products on the surface, has actually been secretly transformed into digital product services. When intellectual property holders only provide services, all copies formed after cracking technical measures face accusations of infringement.

When the Internet of Things era arrived, the binding of software and hardware developed to a new height. Internet of Things products are pre-equipped with embedded software, location detection sensors, network connections, and other software applications, allowing consumer use of products to be preset and limited, and ultimately controlled by the parent company through the internet. Intellectual property holders hidden behind Internet of Things products manage consumers' personal property, no longer treating products as unchanging items to realize one-time sales value, but as platforms for various upgrades and value-added services as well as important big data sources. The products purchased by consumers may use consumer data and other information more than consumers use the products. Moreover, due to highly personalized software and hardware, Internet of Things products form independent product ecosystems. Even if software is copied, there is nowhere to apply it, and consumers don't even think about software copying issues when using Internet of Things products. This is how intellectual property holders continuously strengthen their control over intellectual products and their attached tangible property by setting up obstacles to copy reproduction and eliminating the feasibility and necessity of copy reproduction.

Radical intellectual property laws, restrictive contract terms, and technical lockdown have greatly weakened end users' control over purchased digital products. However, the end of ownership is not the end of intellectual property holders' ownership. Compared to when intellectual property was first created, intellectual property holders' rights have been unprecedentedly strengthened, but consumers' personal property rights are retreating step by step in the face of digital technology. However, intellectual property holders shouldn't be too optimistic, as even they are ordinary consumers most of the time, so the label of ownership's end should be attached to consumers but actually points to everyone. The book's authors seem to see history repeating itself, suggesting that looking back at the early days of intellectual property when copyright holders often pleaded with the public to show more respect for intellectual products' property rights, they should now try to adopt their own advice from back then.

3. HOW DID OWNERSHIP END?

The non-exclusivity and non-rivalry of intellectual property products are basic factual premises, and the progress of digital technology has infinitely amplified these characteristics of intellectual property, to the extent that intellectual property holders ultimately turned to providing services rather than copies through new technology. A general view holds that technology is neutral, which is certainly correct from the perspective of technology's unconsciousness and non-subjectivity (under the premise that artificial intelligence has not yet developed subject consciousness). However, looking back at the history of technological development, technological progress has never achieved uniform benefits for the masses, and each technological revolution has been a reconstruction of the interest pattern and the rights and obligations relationship between parties. Technology is an extension of individual capabilities, helping individuals manage property, such as fingerprint locks and password locks surpassing traditional locks, but more importantly, technology objectively helps people control other people. The industrial revolution's factory production lines gathered workers from all directions, and factory owners formed personal control over workers, fundamentally changing the production relations of the agricultural age. If the factory owners' control over workers during the industrial revolution was mainly through tangible means such as workshops and production lines, then in the digital age, digital technology allows intellectual property holders to remotely control their intellectual products and further limit consumers' scope and methods of using intellectual products and tangible products, ultimately forming control over consumers. Therefore, digital technology has inherited traditional technological innovation's reshaping of social relations, only this time existing in invisible networks in a more hidden way.

Regarding various parties' technology-based demands, the law continuously identifies, screens, confirms some, and enforces them with coercive force as backing. In the process of legislation discovering, responding to, and fixing social subjects' demands, recent explicit beneficiaries often tend to be more active, while long-term implicit beneficiaries tend to be more passive, because long-term interests are still in the distant future. Compared to individual consumers, intellectual property holder groups, due to their organizational nature, stability, and significant related interests, are more motivated to promote legislative changes to maintain their own interests in the long term. The Digital Millennium Copyright Act (DMCA) is quite representative. After long-term advocacy and efforts by intellectual property holder groups, the DMCA finally recognized and protected intellectual property holders' technical measures for works at the legal level, in other words, recognizing intellectual property holders' restrictions on consumers' use of intellectual products, effectively weakening the dominance relationship between consumers and their property. Although the DMCA also lists some exemptions for destroying technical measures, compared to the content protecting technical measures, it can be said to be a drop in the bucket. The DMCA reshaped the rights and obligations of copyright-related parties and has had a profound impact on copyright legislation and modification worldwide.

The judiciary has two tasks: in the absence of legislation, based on the principle of not refusing to judge, it needs to judge new cases, directly facing the challenges of technology to personal property rights; in the presence of legislation, it still needs to reasonably interpret and apply the latest provisions. When judgment standards have not reached broad consensus, different courts make different judgments. For example, courts in different periods have varying views on whether rights holders' setting conditions for consumers to resell or otherwise dispose of goods violates the principle of rights exhaustion, or whether it belongs to valid sales conditions that rights holders can freely set. Various judgments demonstrate their respective logical argumentation processes. Upon examination, when facing new cases and newly established legal provisions, which way the scales of justice tilt depends on judges' value judgments and choices, but in fact, some courts or decision-makers are inevitably guided by intellectual property holder groups onto the path of continuously reducing consumer rights at certain times, although some courts and decision-makers express the need to think thrice. The U.S. Supreme Court explained in an individual case, "Creative work is to be encouraged and rewarded, but private motivation must ultimately serve the cause of promoting broad public availability of literature, music, and the arts," indicating that the fundamental purpose of intellectual property is not to consider intellectual property holders' economic interests, but the innovation and popularization of literature and art. However, it now appears that judgment from the intellectual property perspective alone is still insufficient. Today's popularization of streaming playback methods has made the popularization of literature and art a reality, but still faces the risk and questioning of the end of ownership. The internal tension between intellectual property systems and ownership systems is highlighted again. The intellectual property system is mainly about letting more people create and access more new intellectual property products, but it cannot solve the problem of letting consumers truly own relevant products. Streaming playback is undoubtedly the most beneficial way for intellectual property holders and is actually beneficial for the widespread popularization of intellectual products, except that consumers cannot actually "own" them.

It's hard to say consumers are completely innocent; at least, consumers have jointly participated in forming the current end of ownership outcome. "The era when ownership is no longer valued is not only inevitable but has already arrived." Market laws tell us that where there is demand, there will be supply, and consumer market demand and market choices have important significance for restructuring the property system. We are currently unsure whether the streaming playback model was developed based on market demand or if digital technology happened to develop to this point. However, looking at the results, streaming playback has not been rejected by consumers; on the contrary, it is widely welcomed by consumers. The streaming playback model showed its convenient and efficient characteristics from the beginning, and if the significance of videos, music, and e-books lies in the process of use, then the streaming method has already met the needs of use, and copies are no longer an issue at this time. Therefore, when we attribute the responsibility for the end of ownership to intellectual property holders, we also need to see that while consumers may have been dissatisfied with licenses and digital rights management, today's cloud services and streaming have filled consumer needs. Although there may be some dissatisfaction when music, videos, and books are deleted from the list, substitutes can be quickly found, and consumers might say, isn't this just how streaming works? Therefore, the development of digital technology aligns with human nature's pursuit of convenience and efficiency, especially in such a fast-paced era, people can no longer have leisure time to poetically pause and wait. Even if consumers know they cannot obtain ownership, they will probably still choose this kind of service that would have been impossible to provide under the traditional ownership model due to huge costs. When copies themselves are no longer important, can the ownership system still function as before? Undoubtedly, its position in the property rights system will definitely undergo some displacement.

4. WHAT HAS THE END OF OWNERSHIP CHANGED?

Consumers are losing control over their property, and the concept and legal framework of ownership face deconstruction. Traditional ownership indicates that owners have complete uninterrupted dominion over property, fully enjoying the rights to possess, use, benefit from, and dispose of it. Various technical measures have rewritten the ownership system. As digital rights management technology increasingly develops, consumers' use of their property depends on intellectual products, with the software deciding whether consumers can use, where, when, and how to use, and whether they can dispose of and how to dispose of it. Consumers must also pray that software operators maintain long-term prosperity; if operators go bankrupt or cease operations, related property may become waste. In October 2023, after WM Motor applied for bankruptcy reorganization, some WM car owners reported that the "WM Smart" and "Small WM Follow" software could not be used normally, Bluetooth keys and remote car control functions could not be used, and some car machine functions could not be used, "smart cars becoming retarded cars." Some netizens sighed, "Is this the outcome of smart car companies going bankrupt?" This is a vivid example of consumers losing complete control over their property, or never having complete control over such products.

When a unilaterally formulated end-user license agreement is deemed valid and actually takes effect, intellectual property holders' "power" to control consumers becomes stronger, consumers' autonomy is greatly weakened, and the balance of rights and obligations between the parties becomes severely tilted. Intellectual property holders can arbitrarily set the scope of consumer rights through end-user license agreements, with those unfair terms that exempt their own responsibilities, increase their own rights, and restrict consumer rights lying brazenly in the dense agreement terms—those format terms that consumers won't read, don't have time to read, don't understand, or can't change even if they read them. Contract law reflects a deep moral intuition—people should be responsible for their promises, but keeping promises only makes sense when consumers understand the terms and have fully negotiated. Those agreement signing methods of agreeing by accessing or checking boxes have long deviated from the basic principles of contract law; consumers can either accept or reject, with no room for negotiation. Whether digital product transactions transfer ownership or license use is decided only by rights holders; as long as rights holders continue to chant the mantra "it's a license, not a sale," the result will come true, and all costs are borne by consumers while rights holders enjoy all benefits.

When rights and obligations rules are unclear and not simple, consumers would rather give up those troublesome rights. If the vast majority of consumers rationally choose not to check user agreements, then intellectual property holders will have no motivation to provide more favorable terms for consumers, leaving consumers with only unfavorable terms. The view that market competition would incentivize user agreement terms more favorable to consumers ignores the unilateral nature of end-user license agreements. This unilateral characteristic has led intellectual property holders to compete in squeezing out consumers' last bit of rights, and that optimistic predicted result has not appeared. In the view of liberals,

freedom is the cornerstone of all development, but consumers are being deprived of the right to decide how to live their own lives, their personal non-commercial emotions and ideas must rely on intellectual property holders' arrangements, and with further technological development, this dependence will become increasingly severe, while a few institutions have gained unprecedented monopolistic control capabilities.

With the popularization of digital technology and licensed services, user privacy and anonymity have also become impossible. Licensed services mainly provide online services through networks, and networks have memory, which means personal data and information will permanently remain in networks. The current large number of cyber crimes, telecom fraud, human flesh search, and other behaviors show that personal information security is extremely severe. Network reading and playback records will also indicate personal thought trends, private morals, and position choices and other information, and these contents belonging to reading freedom and freedom of thought will be easily recorded, obtained, and monitored by digital technology. Adobe software can even record which page readers read and how long they stayed on a certain page. Represented by the General Data Protection Regulation (GDPR), although various countries' personal information protection laws stipulate rights such as personal information deletion rights, deletion on the network is ultimately difficult to be thorough due to the infinity of digital copies. In traditional times, we could still count on libraries to act as gatekeepers for borrowing records, but now libraries themselves are also in severe crisis.

For public welfare organizations such as libraries, the widespread use of digital rights management technology is obviously not good news. Libraries are archives of our cultural heritage, meeting places and learning spaces for community members, and managers of professional collections. For many people, the library borrowing model is an iconic achievement in education and an important way for the public to access knowledge. In the past, libraries had incomparable advantages in popularizing public reading and providing intellectual property product resources. However, in the digital age, due to the prevalence of end-user license agreements, libraries may not own their own electronic copies but only sign license agreements with intellectual product suppliers. When libraries agree to lend to readers, suppliers may need to provide electronic copies directly to readers, which may also require cooperating with suppliers to provide various information and complete various cumbersome operations on the network, or as major publisher Harper Collins announced in 2011, after libraries lend out e-books 26 times, the usage rights for that book will be forcibly terminated, with the reason being that the book's self-destruction time is calculated based on the physical wear rate of physical copies. However, in any case, libraries have lost free control and complete disposal of electronic copies, which means that the final decision-maker of whether readers can borrow a book is no longer the library, but the supplier hidden behind it. Supplier credit, equipment configuration completeness, transmission technology stability, and other factors add variables to book lending. One can imagine that one day, readers might receive a message like this: "Dear reader, our library has agreed to your borrowing of XX book, but due to internal disputes with the supplier, we are temporarily unable to send you this book, please understand." Readers' reading records face the fate of going online, and libraries can no longer independently control reader information, but rather share data with relevant subjects such as original publishers, digital rights management suppliers, and e-reader application manufacturers. When libraries no longer own and control books and their lending process, and must protect reader privacy through negotiation, such protection will undoubtedly be significantly weakened, leading to the gradual decline of libraries' traditional-era function of protecting reader information. Additionally, libraries have always been responsible for preserving rare books and collections. In the current prevalence of copy elimination practices, libraries may not only be unable to obtain physical copies but may not even truly possess electronic copies. While things are fine when suppliers operate normally, if suppliers go bankrupt, cease operations, or lose contact, it will affect the preservation of rare books and collections and the inheritance of culture.

5. WHAT CAN LAW DO?

Under such circumstances, we can't help but ask, does the ownership system still have a future? The book mentions using various methods to rebuild the ownership system, such as avoiding false ownership promises, limiting unfair terms in format contracts, liberating owners from digital rights management, reviving the principle of rights exhaustion, reshaping copyright law, and even using blockchain technology to fix digital goods ownership. These suggestions are all very constructive, but some also have issues of insufficient self-consistency or difficulty in coordination.

In the digital environment, operational models like streaming have technological and practical inevitability, and the trend of commodity ownership transfer shifting to digital services has become irreversible. Even if the "Buy Now" button changes to "Purchase Service" content, it cannot change people's adaptation and habits to this method; people seem to

have generally accepted that "Buy Now" popular on the network itself expresses the connotation of providing services. In comparison, restricting format contracts has significant practical significance. Even for streaming services, consumers' personal lists represent their will and choices and have formed personal private spaces. Consumers should also have corresponding disposal rights over the content in personal lists, and operators should not arbitrarily change, delete, or stop services. Currently widespread terms allowing arbitrary intrusion, interference, and destruction of consumer consumption content are obviously unfair and need to be restricted. Liberating owners from digital rights management is very necessary, especially if the use of tangible goods is restricted due to digital rights management, which is completely improper infringement of personal property rights, so anti-circumvention provisions in the law should be limited. Reviving the principle of rights exhaustion is obviously beneficial to consumers, which can be linked to the suggestion of canceling reproduction rights in the copyright system mentioned in reshaping copyright law. In fact, if the traditional principle of rights exhaustion is adopted in the digital field, it will effectively cancel copyright holders' reproduction rights in the digital field. Looking at the current situation, under the streaming playback method, copyright holders' reproduction rights are already vastly different from before, which also indicates from another perspective that when the cost of preventing an action is too high or even impossible, a different approach should be taken for guidance. It can be said that the invention of streaming playback methods is an effective alternative remedial method for copyright holders' reproduction rights in the digital environment, with effects far superior to spending great efforts to prohibit copying. As for using blockchain technology to fix digital goods ownership, against the background of the global cooling of the NFT collection market, whether digital collections truly have unique value, or are just the last rescue attempt for reproduction rights' defeat in the digital field, there is no conclusion yet. However, it is an undisputed fact that the unique reproduction form in the digital environment has substantial differences from the reproduction of tangible objects, and collections in virtual space, due to their virtuality, can hardly truly compete with tangible collections.

The development of digital technology has changed the operation mode of the intellectual property system and even fundamentally rewritten the ownership system, causing a huge gap between the actual situation and the presupposition of traditional legal systems. This is the application dilemma of traditional ownership systems and intellectual property systems in the face of digital technology in the internet era. Obviously, the decision-making power of digital affairs cannot be completely handed over to the market. The practice of complete self-governance by market entities will amplify the disparity in their respective strengths, thus forming new inequality and injustice. The role of law in this should be the art of weighing and balancing, maintaining basic fairness and justice, on the basis of which various parties negotiate to determine their respective rights and obligations boundaries. And it has always been technology first and law later, with law always chasing technology, lagging behind new technology and new business models. Therefore, legal norms are generally formulated, adapted, and corrected afterward to adapt to existing technology, seeking and establishing appropriate technological ethics standards to properly guide and regulate technology, and promoting the embedding of matching moral requirements in the technology research and development process. Thinking back to when Dolly the cloned sheep was born in 1996, it triggered worldwide discussion, and human basic ethics faced subversive challenges, finally ending with the adoption of a political declaration by the Legal Committee of the 59th UN General Assembly, declaring that countries should prohibit any form of human cloning that violates human dignity. Unlike cloning directly posing obvious threats to human ethics, digital technology's impact on human ethics is sometimes hidden, sometimes visible, sometimes strong, sometimes weak. It brings us significant convenience and occasionally makes us reflect. Law cannot be as decisive as it was with Dolly the sheep in this process, but rather looks around, striving to take care of everything. In this process, some people are bound to suffer unfair treatment, which can be considered an inevitable cost of technological development, but we need to offer enough legal attention to those unnamed individuals, which may include ourselves.

6. CONCLUSION: WHAT SHOULD WE DO?

Fundamentally speaking, digital technology has changed not only the logic of personal property operation but also the relationship between people and things, between people and people, changed the way humans interact with others and themselves, that is, our human existence state. Whether we agree or not, our deep connection with property in the traditional sense is weakening, replaced by the fact that our relationship with digital technology and the operators behind it is strengthening. Sartre said existence precedes essence; the current alienation between people and things will inevitably cause alienation between people and the world, between people and people, and even between people and themselves. This mode of alienated existence will ultimately define the essence of "human." Therefore, those efforts made for the

revival of ownership, especially establishing ownership of digital goods, can be seen as efforts to resist technological control made under the complex of missing the traditional ownership system. The most significant meaning lies in changing, correcting, and overcoming technology's control over people and the control that technology holders exercise over others. The most important value contained in the traditional ownership system lies in people being able to enjoy autonomy over what they own, and thereby enjoy autonomy over their own development. This autonomy has an indispensable underlying value for people's free and comprehensive development.

When marketing experts propose customer "lifetime value" to emphasize the superiority of shifting from product orientation to usage rights orientation, each of us can hardly escape becoming a target of the market, moving further and further away from the ideal of being an end in itself. American scholar Jeremy Rifkin prophetically proposed in his book *The Age of Access: The New Culture of Hypercapitalism Where All of Life is a Paid-for Experience* that the contemporary era has entered the age of access rights, where in an economy where change is the only constant, owning, holding, and accumulating become increasingly meaningless. Some scholars have also vividly named the philosophical pattern opened by the 21st century as the "age of experience" according to the historical thread of the *Philosophical Mentor Series*. Various evidence shows that the wheels of history have undisputedly driven into the age of access rights, but the endowment effect points out that we give greater value to things we own because we own them. Hegel also said that a person's personality always exists in the things they possess. Therefore, striving to restore people's autonomy over things and themselves is the collective appeal of this era. People should at least have true autonomy over whether they enjoy autonomy.

Su Dongpo once sighed, "Long have I resented this body not being my own, when will I forget this busy seeking?" When we only use products like passersby and cannot truly own products, can we still throw ourselves wholeheartedly into our lives? Will we also treat ourselves and this world with a passerby mentality? Zhuangzi advocated through Gengsang Zi's mouth more than two thousand years ago, "Keep your body complete, keep your mind complete, don't let your thoughts and concerns be busy." ultimately returning to inner peace, abundance, and stability. Although the alienation leading to loss of control due to technology may be an inevitable era, making the general public maintain a clear understanding of digital technology and constantly remind themselves to maintain independent personality should be the urgent new enlightenment of our era, which may be exactly where the significance of this book lies.



Figure 1: The Cover Page of *The End of Ownership: Personal Property in the Digital Economy*

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