

This is a section of [doi:10.7551/mitpress/10524.001.0001](https://doi.org/10.7551/mitpress/10524.001.0001)

The End of Ownership

Personal Property in the Digital Economy

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Citation:

The End of Ownership: Personal Property in the Digital Economy

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DOI: 10.7551/mitpress/10524.001.0001

ISBN (electronic): 9780262335959

Publisher: The MIT Press

Published: 2018

OA Funding Provided By:

The open access edition of this book was made possible by generous funding from Arcadia—a charitable fund of Lisbet Rausing and Peter Baldwin.



The MIT Press

1 Introduction

Chances are, you are reading this book in one of two ways. Either you are holding a bound set of printed pages—a traditional analog book—or you are holding an electronic device displaying a digital file—an ebook. Whether the page is physical or virtual, the words are the same. But the seemingly simple choice between these two ways of delivering text offers a window into a broader set of questions about the emerging digital economy and our place within it. In the courts, in the marketplace, and in our homes, we find mounting evidence that our rights to own, control, repair, and use the products we buy depend, in large part, on whether those goods are analog or digital. This looming rift between buyers of analog and digital goods is the byproduct of a number of relatively recent legal, technological, and marketplace developments. And those shifts implicate not only media content like books, music, and movies, but also nearly every software-enabled device we encounter, from phones, cars, and coffeemakers to medical devices like pacemakers and insulin pumps.

An example may help illustrate the problem. In George Orwell's dystopian classic *1984*, the Ministry of Truth, at the behest of Big Brother, destroyed documents by casting them into the memory hole, a massive network of tubes leading to an incinerator. Amazon, the world's largest bookseller, sells *1984*—along with millions of other titles—both in print and in its Kindle ebook store. Assuming they had a chance to read the book first, Kindle users were no doubt struck by the irony of Amazon's decision to remotely delete their purchased copies of *1984* in response to a dispute with a publisher.¹ These customers went to bed one night thinking they owned a copy of Orwell's cautionary tale and woke up the next morning to find their book had been confiscated. In its place, they received a refund and an object lesson in the risks of digital reading.

In the world of printed books, this scenario would be unthinkable. Your local bookseller cannot creep into your home in the middle of the night

and reclaim the contents of your bookshelf. But Amazon exercises a very different kind of practical power over your digital library. Your Kindle runs software written by Amazon, and it features a persistent network connection. That means Amazon can send it instructions—to delete a book or even replace it with a new version—without any intervention from you.

But it's not just the technology that sets analog and digital books apart. The legal terrain looks very different as well. If you bought a printed copy of this book, it became your personal property. Like your favorite pair of shoes, or your toothbrush, you own it. Ownership of this book means you can do lots of things with it. You can keep it forever; you can read it as many times as you like; you can lend it to a friend;² you can resell it or give it away; you can leave it to a loved one in your will. We don't encourage it, but you can even burn it if you feel like it. Because of the demands of copyright law, you generally cannot make copies of this book without permission. But otherwise, if you own it, it is yours to do with as you choose. This may seem obvious; the same basic rules of personal property have applied to books and other movable property for hundreds of years.

And you might expect digital books to work much the same as their printed counterparts. They contain the same text and are often sold by the very same retailers for comparable prices. Indeed, a 2012 study showed that nearly a third of bestselling ebooks were more expensive than their hardcover counterparts.³ But according to publishers and retailers, ebooks play by a distinct sets of rules. For print, we rely on the familiar rules of personal property. But do you actually own your ebooks? Most readers have probably never paused to ask this question. After all, you clicked the "Buy Now" button and paid the price demanded by your favorite ebook retailer. Why wouldn't you own the thing you bought?

Despite the common sense appeal of that view, digital retailers insist that ownership depends on the terms of an end user license agreement ("EULA")—that incomprehensible slew of legalese you reflexively click "I agree" to dismiss. Those terms—negotiated by lawyers working for retailers and publishers—determine your rights, not the default entitlements of personal property. And buried within those thousands of words that we all ignore is one consistent message: you don't own the books you bought; you merely license them. That is to say, you have permission to read them. Until one day, you don't.

The 1984 incident is hardly the only case of readers losing access to their purchases. Linn Nygaard, a Norwegian Kindle customer, lost dozens of ebooks she bought from Amazon. They simply vanished without notice when Amazon erased her Kindle, citing unspecified "abuse of [its]

policies.”⁴ Our best guess is that Nygaard ran afoul of those policies because she lived in Norway, a territory in which Amazon had not yet launched its Kindle Store. But we can’t say for sure, since Amazon never bothered to tell her. To be clear, she didn’t pay with a stolen credit card; she didn’t hack Amazon’s servers to get her ebooks for free; she simply made her purchases from the wrong country. After a worldwide spate of critical news coverage, Amazon relented and restored Nygaard’s purchases. But Amazon’s technical ability and legal authority to take away your ebooks remain unchanged.

Other retailers have caused ebook purchases to vanish without even the pretense of wrongdoing on the part of readers. Scholastic, the publisher of children’s educational books, launched its Storia ebook platform in 2012, promising that purchases could be shared with up to ten students. But just two years later, Scholastic announced a change of plans. It would be offering ebooks exclusively through a streaming model. And its new subscription service required an active Internet connection. No Wi-Fi—the reality in too many of the underfunded schools across the United States—means no reading.⁵ Subscription services are not inherently bad. They can offer those of us interested in temporary access real value, but Scholastic’s approach retroactively converted what students and educators thought were purchases into rentals—from permanent possession to conditional permission. As the publisher explained, “The switch to streaming means that eBooks you’ve previously purchased may soon no longer be accessible.”⁶

The chapters that follow will illustrate that this problem goes well beyond ebooks. Digital distribution of music has already largely displaced CD sales. And digital movie distribution is projected to overtake DVD and Blu-ray within the next few years. Software and video game sales are trending toward digital models as well. In each of these sectors, the same story about ownership plays out. Gamers who buy titles on discs can lend them to friends and resell them. Those who download their games through Xbox Live or the PlayStation Network can do neither, even though they pay the same price. The rights that we have come to expect when we buy music, movies, and other content are at best uncertain and at worst absent in the digital marketplace.

So how did our rights in media goods become so unstable and insecure? Part of the answer is technology. Cheap remote storage, high-speed mobile network connections, and nearly ubiquitous computing devices like tablets and smartphones have facilitated new ways of distributing media. Digital downloads, cloud storage, and streaming services offer convenience, instant accessibility, and lower prices to consumers. But they also physically separate us from the books we read, the music we play, and the movies we

watch. That content doesn't live on our shelves anymore. It's in a server farm in some distant and unknown city.

At the same time, aggressive intellectual property laws, restrictive contractual provisions, and technological locks have weakened end user control over the digital goods we acquire. We will tackle each of these developments in detail later, but the terms of use for the Kindle Store offer a brief glimpse into one chief cause of the instability consumers confront in the digital marketplace. As Amazon explains in the EULA you've likely never read, "Kindle Content is licensed, not sold, to you."⁷ In other words, you don't own the ebooks that you buy. What's more, "if you fail to comply with any term of this Agreement, ... Amazon may immediately revoke your access to ... Kindle Content without refund."⁸ So if you break Amazon's rules by, for example, posting a "threatening, defamatory, ... or objectionable" product review, your books can be confiscated.⁹ Your rights are defined by a nonnegotiable agreement you've never read, one that—as we will show—runs counter to what most of us think we can do with the products we buy.

Beyond these contractual restrictions, many products today incorporate technology that restricts how you can use them. Digital rights management (DRM) builds these restrictions into the very design of the products we buy. If you've ever found yourself unable to watch a movie because you've authorized too many devices, you've been the victim of DRM. But DRM isn't limited to digital media. Today, we see it in all manner of products, where it plays much the same role, officiously telling you what you can and can't do with the stuff you buy. When Keurig released version 2.0 of its home coffee machine in 2014, for example, it incorporated DRM to prop up sales of its coffee. Customers who tried to brew cheaper, off-brand ground coffee were greeted by a message on the device's display that politely refused to make their cup of coffee, instructing them to buy Keurig-brand coffee instead.

The traitorous coffee maker is not an isolated example. The same trends that threaten to undermine ownership of intangible digital media have made their way into the world of tangible objects. Smartphones, televisions, cars, household appliances, and wearable technology like the Apple Watch and Fitbit—to name just a few—feature embedded software and network connectivity that control how we use the things we buy. And like Kindle ebooks, the agreements that accompany these products typically insist that buyers are merely licensed to use them and expressly prohibit lending, resale, modification, and even repair.

You might find this vision of the future troubling. But the anemic understanding of consumer rights that manufacturers and retailers are pushing is only one side of the story. Ownership is a contested question, and the

digital marketplace is a contested space. As we will argue, there are good reasons to resist these efforts to redefine our relationship to the media and devices that shape so much of our interaction with the world. And while some courts and policymakers have been led down the path of ever-diminishing consumer rights, others have signaled an unwillingness to jettison those rights without carefully considering the consequences.¹⁰ Perhaps more importantly, readers, listeners, and tinkerers—everyday people—are expressing their own reluctance to accept ownership as an artifact of some bygone predigital era. The questions we address in this book are complex, and there are no easy answers. Our goal is to explain the current state of our relationship with the products we buy, how we arrived at this pivotal moment in ownership's history, and to begin what we hope is an open and ongoing conversation about where we might go from here.

Of course, any discussion of our digital future has to acknowledge the benefits of new technologies and the business models they enable. Many of us—including the authors of this book—embrace the digital marketplace. Just consider how the Kindle revolutionized the experience of reading. Today's devices can store thousands of books in a package smaller and lighter than the average paperback. They allow readers to search, bookmark, and annotate, to share favorite passages with a community of friends, and to instantly define unfamiliar words. And new books are a mere click away thanks to wireless connectivity and integrated shopping platforms. Even those of us who prefer the reassuring heft of a hardcover, the smell of ink on paper, and afternoons wandering the aisles of the Strand, Powell's, or John K. King can at least recognize the appeal of digital books.

Beyond books, many of us happily store our collections of digital artifacts in the cloud. Or we opt for no permanent collections at all, instead dipping into the streams of all-you-can-eat subscription content available from Netflix, Spotify, and the like. As the popularity of these streaming services makes clear, lots of us are content to sacrifice ownership and permanence if it means a wider selection, more portability, greater convenience, and lower prices. Advocates of licensing models say they enable a degree of flexibility that sales simply can't. If customers can license the precise rights that meet their needs—to read a book, but not lend it, or to watch a movie on your smartphone, but not on your TV—they can pay accordingly, and everyone wins. We will return to price discrimination—the notion of charging different customers different prices depending on their specific preferences and willingness to pay. For now, it's enough to say that we agree that certain forms of price discrimination increase consumer choice in valuable

ways. But we think the benefits of price discrimination are often overstated, and that it can do more harm than good if unrestrained.

Today, we operate in a market that—for the most part—affords a choice between ownership and more conditional, impermanent access to digital and physical goods. Those choices are neither right nor wrong. But they have consequences, both for individuals and society more broadly. There are things we gain and things we lose. And if we know what those trade-offs are, we can make more informed, more meaningful choices—not only about the products we buy, but also about the laws and policies that govern the marketplace.

So what is at stake when we make these choices? The most immediate consequence of nonownership is the long list of substantive rights we lose. The prohibitions found in most EULAs and enforced by most DRM contrast starkly with the default rules of private property. You can't resell a product you don't own. You can't lend it, give it away, or donate it. You can't read, watch, or listen on unapproved devices. You can't modify or repair the devices you use. There might be good reasons to give up those rights. But the evidence we will present strongly suggests that most consumers are poorly informed about the disparities between ownership and licensing.

Nor is the impact of the shift from ownership to licensing limited to individuals; our educational and cultural institutions are dealing with the fallout as well. When a library buys a printed book, for example, it can lend it to as many patrons as it chooses, without asking the publisher for permission or paying any additional fees. Library books can remain in circulation for decades, serving the needs of hundreds of readers. But when libraries acquire ebooks, licensing terms and software code often impose hard ceilings on lending. HarperCollins ebooks, for example, can be lent out twenty-six times, which translates to a single year of borrowing, after which they essentially self-destruct.¹¹ Patrons cannot borrow that title again until the library ponies up an additional fee to the publisher. So despite the claims by publishers like Random House—who claim that libraries “own” their ebooks—libraries don't own their digital collections any more than you own the movies on your Netflix queue.¹²

Digital consumers sacrifice stability and permanence too. As the 1984 episode shows, purchases can be deleted or disabled without warning or explanation for any number of reasons. Perhaps you unknowingly violated some provisions of a site's terms of service. Perhaps the retailer adopted a new business model that left existing customers in the cold. Google, Major League Baseball, MSN Music, Sony, Virgin Digital, Walmart, and Yahoo all

pulled variants of this move when they decided to shut down the servers that customers needed to access the media they purchased.¹³ Some customers were given the chance to convert to other services, but many were told to burn their purchases to CDs or lose them forever. In other cases, retailers have simply gone out of business altogether. Although you might lament your local bookstore closing up shop, you'd at least keep your books. But when HDGiants, a purveyor of high-quality audio and video files went bankrupt, its servers went dark and its paying customers were left with nothing.¹⁴

Privacy presents another concern.¹⁵ For analog media, we have strong privacy protections that limit access to information about what books you check out from the local library and what movies you rent from your local Redbox. Putting the law aside, practical barriers ensured that governments, publishers, and retailers could not easily track who bought, owned, resold, or enjoyed analog copies of banned and confiscated works like *Tropic of Cancer*,¹⁶ *As Nasty As They Wanna Be*,¹⁷ or *The Tin Drum*.¹⁸ Digital transactions make this kind of tracking far easier. First, digital purchases are almost always tied to a unique user account, linking your purchase history to your identity. Second, the architecture of online media allows unprecedented surveillance of consumer behavior. Adobe, for example, recently came under fire when researchers discovered that its popular ebook platform, Digital Editions, reported back not only the titles of every book in a reader's library, but also when they were read and even what pages were viewed. Even more troubling, this information was sent over the Internet unencrypted, meaning that any mildly sophisticated hacker could learn all there is to know about your reading habits.¹⁹ And then of course, there is the risk of government surveillance by the National Security Agency (NSA) and others.²⁰

The transition from owning to licensing causes another, more widespread problem. Because their terms can vary so widely, licenses lead to uncertainty about what rights we actually acquire. When it comes to ownership, centuries of practice—reinforced by clear legal rules—mean that when a reader walks into a store and exchanges cash for a book, they know with a fair degree of certainty what they are getting.²¹ That clarity disappears when rights are defined by the variable and often incomprehensible text of a license agreement. Licenses vary—from retailer to retailer, from publisher to publisher, from product to product. Close study of the license accompanying an Amazon ebook tells you very little about one you might buy from Apple. And it tells you almost nothing about the license for your coffeemaker. Licenses are driven by the concerns of manufacturers, retailers,

and publishers—and the negotiations among them. As a result, licenses are often idiosyncratic and subject to change, sometimes even after your purchase. The rights you acquire are therefore less clear and less predictable than the rights associated with ownership.

Beyond its impact on individuals, this erosion of clarity poses a risk of broader social harms. One advantage of clear, reliable property rights is that they make it easier for people to navigate the marketplace. Replacing clear property rules with complicated and uncertain contractual ones makes life harder for all of us and impairs the functioning of the economy as a whole.

In the language of economists, property rights increase efficiency by lowering transaction costs. Transaction costs are all of the costs aside from the sticker price that we incur when we buy a product or engage in some transaction.²² Let's say you want to buy a newly released bestseller. The retail price for the book is \$25. But that price doesn't take into account all of the relevant costs of acquiring the book. You have to drive to the bookstore; you have to spend time looking for the book on the shelf; in some cultures, you may have to haggle over the price. These are all transaction costs. Even information about the book comes at a cost. We have to investigate products to determine their quality and characteristics before deciding to buy them. How many reviews, for example, did you read before deciding to buy this book?

Clear property rights help keep these costs low.²³ Without stable and reliable rules about what rights we acquire when we buy a product, information costs go up. On the one hand, when you see the price tag on a book, you understand that if you pay the \$25, you own it. And most of us have a solid understanding of what ownership entails. On the other hand, in a world where some books were owned, some could be read only once, others had to be returned after a month, and still others could be read in the bathtub but not on the beach, you'd need to carefully investigate each purchase. You'd have to ask the sales associate lots of questions or scour the terms that accompany each book to figure out precisely what rights you acquire, for what period of time, and what restrictions apply.

This information cost problem leads to what economists call an externality—a cost created by a transaction that isn't borne by the parties striking the deal. Pollution is a classic example.²⁴ A factory makes widgets and sells them to the public. In the process, the factory emits pollution that lowers air quality. The price of the resulting widgets is a function of a number of factors—the cost of labor, materials, research and development, and advertising, among others. But the cost of pollution isn't one of them. Widget buyers don't pay for it, and in the absence of some environmental

regulation, the factory doesn't either. So pollution is a cost created by the sale of the widget that neither the buyer nor the seller has to take into account.

Information costs can work the same way. Let's say your neighbor loves to read at the beach, but prefers a quiet glass of bourbon in the bathtub. So they are enthusiastic about the prospect of saving a dollar on their next book by paying for the beach-but-no-bathtub license. You, on the other hand, prefer to own your books. When your neighbor and others like them opt for the licensed book—assuming they are fully informed about their choice—they may be getting precisely what they want. As between buyer and seller, this deal looks like a success. But there is a cost they are both ignoring. The next time you go to the bookstore, you'll have to keep a careful eye out for licensed books, lest you end up drawing a bath only to find out you are prohibited from reading. So information costs for you and other would-be book owners increase. The fact that some books come with idiosyncratic rules imposes a cost on all book shoppers, regardless of their preferences.

This isn't the only externality created by the shift away from ownership. There are other costs that go unnoticed in our calculations. One benefit of ownership is preservation. Valuable cultural works disappear for all sorts of reasons. Government censorship can remove works from the market; books and records go out of print when they are deemed commercially unviable; films—from *The Interview* to Disney's *Song of the South*—are hidden from view for reasons that range from political controversies to pure marketing ploys.²⁵ Works can also be lost to accidents, natural disasters, and plain old inattention. Ownership helps guard against those losses. When we own our copies, we have greater incentives to make efforts to preserve them, and it's harder for publishers and government actors to erase them. And when works are distributed widely on secondary markets through resale and lending, the risk of loss is reduced. Even though we all benefit from the preservation of our shared cultural heritage, outside of the small circle of archivists and cultural historians, few of us give it much thought. So when we choose to license rather than own, we are—in admittedly small increments—chipping away at preservation efforts.

Ownership can also spur innovation. When the used goods we buy can be resold, those secondary markets create an incentive for new and improved products. We see new features on our cars and phones, remastered music, and behind-the-scenes features for movies, in part because ownership and transferability increase competitive pressure. This trend is perhaps most visible in the video game industry where publishers frequently release “Game

of the Year” or other special editions loaded with extra content as a way to compete with cheaper used copies. Ownership also enables user innovation from those who modify and improve the products they buy.²⁶ This innovation is valuable. To the extent licensing reduces incentives and opportunities for innovation, it imposes costs on society that are not reflected in the lower price of licensed goods. Precisely because these costs are not felt acutely by individuals, we might doubt whether consumer choice alone—even if informed—can fully solve the problems licensing creates around information costs, preservation, and innovation.

Competition can also get a boost from individual ownership because it helps lower the costs of switching from one format, device, or platform to another. Lower switching costs open the market up to new entrants with potentially superior products. Imagine you are a loyal Microsoft Xbox enthusiast with thousands of dollars invested in hardware and software. But you’re considering switching sides and buying a Sony PlayStation. If you own your Xbox, you can sell it along with your collection of games on Craigslist or eBay. But if Microsoft could stop you from reselling your device and games—as it currently does for digital games purchased through its Xbox Live service—you’d be less inclined to switch, and the market would be less competitive as a result.

But the most fundamental value at stake in the choice between ownership and licensing is autonomy—the sense of self-direction, that our behaviors reflect our own preferences and choices rather than the dictates of some external authority. If we own our purchases, we are free to make whatever lawful use of them we choose. If you own your books, you can give them away. If you own your records, you can lend one to a friend. If you own your iPhone, you can use the mobile carrier and install the apps of your choice. If you own your PlayStation, you can replace its operating system and use it as a low-cost computer. If you own your Ferrari, you can customize it as you see fit. And if you own your Keurig coffeemaker, you can brew whatever brand of coffee you prefer. What ties these disparate behaviors together is that they don’t depend on permission. You don’t have to ask Amazon or Apple or Sony. You are free to act on your own accord, even over their objections.

That’s one reason we find efforts to recreate resale, lending, and other rights through licensing unsatisfying. Amazon created a program, for example, that allows readers to “lend” an ebook to a friend. But that program has strings attached. An ebook can only be lent a total of one time and only for fourteen days. Most crucially, lending depends on permission from the book’s publisher. As a result, only a small fraction of ebook titles

allows lending. Your hardcovers, on the other hand, can be lent to as many friends, relatives, or strangers as you choose whether the publisher likes it or not. So while Amazon has recreated some aspects of the lending culture we have grown accustomed to for print books, digital lending remains an imperfect simulacrum, in large part because it hinges on choices other than our own.

Of course even with ownership, we don't enjoy total freedom. There are limits on what we can do with the things we own. But those limits are generally defined by law. And under our system, law is created through a process—imperfect in many respects—that is ultimately responsive to our input. But a future defined by licensing is one where control over how we interact with the world around us and with each other is increasingly concentrated in the hands of a small coterie of powerful private actors. In that future, the limits on our autonomy will flow from a EULA rather than collective self-government. It doesn't have to be this way. Technology can constrain our freedom, but it can also empower us.

In 1984, the U.S. Supreme Court weighed the fate of the VCR. Movie studios sued Sony, alleging that TV viewers used its Betamax player to unlawfully record broadcast programs. Ultimately, the Court rejected this effort to dictate how new technologies were designed and used by their owners. Key testimony in the case came from an unlikely source, Fred Rogers—host of the PBS mainstay *Mister Rogers' Neighborhood*. In characteristically simple and powerful language, he explained the value of the VCR in terms of personal autonomy: "I have always felt that with the advent of all of this new technology that allows people to tape the *Neighborhood* off-the-air ... they then become much more active in the programming of their family's television life. Very frankly, I am opposed to people being programmed by others. My whole approach in broadcasting has always been 'You are an important person just the way you are. You can make healthy decisions.' ... Anything that allows a person to be more active in the control of his or her life, in a healthy way, is important."²⁷ Ownership facilitates the sort of active participation that Mister Rogers had in mind. And the licensing model puts it at risk.

So far, we've focused on how ownership affects the average person. But there is another set of interests at stake in this debate. Much of the effort to displace ownership has been undertaken in the name of strengthening the intellectual property (IP) rights of creators. Intellectual property is generally understood as a way for the law to provide economic incentives for the creation of new inventions and works of expression. By protecting inventors and authors from copying, IP law boosts their chances of financial success.

And if the theory behind IP protection is correct, we see more creativity as a result.

IP rights holders—from publishers to carmakers—are attracted to the increased control licensing promises them. They can eliminate secondary markets like used book stores; they can reduce competition for complementary products like coffee or ink cartridges; and they can corner the market for repair and other related services. All of which, they argue, increases their incentives to invest in new and better products. Moreover, rights holders argue that digital goods are fundamentally different from analog ones. They can be copied perfectly and distributed at no cost. Unlike a paperback that falls apart after a handful of readings, an ebook can be passed around to infinite readers. We agree that analog and digital goods are not perfect substitutes, though we think the differences between them are often overstated. Still, we acknowledge that the rules of digital ownership can't simply copy and paste from the analog world. But we shouldn't simply scrap ownership either.

If greater IP protection comes at the cost of personal property rights, a licensing-only strategy may well backfire. Today, most commercially valuable copyrighted works are available for free somewhere online, with or without the copyright holder's permission. The challenge facing copyright law—and with the introduction of 3D printing, soon patent law too—is figuring out how to convince the public to pay for things it can get for free. One way the law does that is through the stick of infringement liability. And that stick is a big one. The Copyright Act allows for damages of up to \$150,000 for unlawfully downloading a single song.²⁸ But copyright holders, despite their best efforts, cannot locate and sue each and every downloader on the Pirate Bay.²⁹ And the probability of a lawsuit is too low to deter many of them.

If we want to persuade people to pay for these products rather than download them illegally, the carrot can be just as important as the stick. People pay for things that offer them good value for their money. And ownership is a major component of that value. Property rights mean that buyers have assurances about their ability to use and enjoy the products they buy. A book, movie, or video game that the law recognizes as your personal property is more valuable than one in which you have no recognized rights. And as a result, personal property rights provide a strong reason to buy lawful copies. But when copies lack the rights and freedoms we expect, they are less desirable and harder to distinguish from free, infringing ones.

The risk is that creators, publishers, and digital retailers are unwittingly reducing incentives to buy their own products through aggressive efforts to

control how readers, listeners, and viewers use them. If after learning about the restrictions they impose, people are not convinced that digital products present a good value proposition, we can expect a number of responses. Some will revert back to analog copies, if they can. Others will decide to spend their money on subscription services like Spotify and Netflix, which are arguably less profitable for copyright holders than sales-based business models. Some will choose to download content illegally. And some will decide to spend their disposable income elsewhere, on a vacation or personal trainer, for example. Tampering with ownership is likely to have major consequences, and perhaps not the ones creators expect.

That's our argument for why these issues—and this book—matter. Here is how the remaining chapters will proceed. First, we outline some basic principles of personal and intellectual property law—in particular, the notion of exhaustion of rights—to lay the conceptual groundwork for the rest of the book. Next, we trace two key developments in the erosion of ownership—the technologies of digital distribution and the rise of the license agreement. Then, we explore the mismatch between the fine print of EULAs and the claims about “buying” and “owning” that are so prevalent in the digital marketplace. We will demonstrate that those claims mislead consumers about the fundamental nature of digital transactions. From there, we turn our attention from individuals to the implications of the licensing model for an important group of institutional actors, public libraries. Next, we look at how the licensing model, which was largely confined to digital media for decades, has been exported to the world of physical goods. That transition starts with DRM technology and the laws that protect it. But with the emergence of the Internet of Things, the question of our relationship with the devices around us—and sometimes in us—is more pressing than ever. Then we explore another legal avenue for exerting control over how we use the objects we buy—the patent system—and how the ongoing fight over so-called post-sale restrictions threatens ownership. Finally, we will outline an agenda to reconcile stable, reliable personal property rights with our inevitably digital future.

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This book was set in Stone Sans and Stone Serif by Toppan Best-set Premedia Limited. Printed and bound in the United States of America.

Library of Congress Cataloging-in-Publication Data

Names: Perzanowski, Aaron, author. | Schultz, Jason M., author.

Title: The end of ownership : personal property in the digital economy / Aaron Perzanowski and Jason Schultz.

Description: Cambridge, MA : The MIT Press, 2016. | Series: The information society series | Includes bibliographical references and index.

Identifiers: LCCN 2016013180 | ISBN 9780262035019 (hardcover : alk. paper)

Subjects: LCSH: Personal property. | Internet—Law and legislation. | Electronic commerce—Law and legislation. | Intellectual property.

Classification: LCC K783 .P47 2016 | DDC 346.04/8—dc23 LC record available at <http://lccn.loc.gov/2016013180>

10 9 8 7 6 5 4 3 2 1