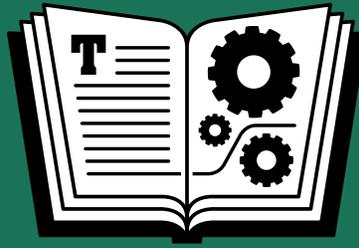


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TAKE CONTROL OF

YOUR PAPERLESS OFFICE

by **JOE KISSELL**

\$15

3RD
EDITION

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Read Me First

Welcome to *Take Control of Your Paperless Office, Third Edition*, version 3.0, published in March 2017 by TidBITS Publishing Inc. This book was written by Joe Kissell and edited by Michael E. Cohen.

This book guides you in the process of eliminating paper clutter, replacing many printed documents with digital versions—with special emphasis on the Mac-compatible hardware, software, and processes needed to efficiently scan documents and create searchable PDFs. It also helps you find clever ways to reduce incoming and outgoing office paper, and capture documents even when no scanner is available.

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Basics

To review background information that might help you understand this book better, such as finding System Preferences and working with files in the Finder, read Tonya Engst's free ebook [Read Me First: A Take Control Crash Course](#), available for free on the Web or as a standalone ebook in PDF, EPUB, and the Kindle's Mobipocket format.

One additional note: For the purpose of this book, a *desktop computer* is a computer running a conventional operating system such as macOS or Windows. A *mobile device* is a smartphone, tablet, e-reader, or other handheld computer-like device, such as an iPhone, iPad, Kindle, or Android phone or tablet.

What's New in the Third Edition

Since the previous version of this book was published, quite a few things have changed with regard to the hardware, software, and services used in paperless offices. This edition brings the book up to date with the latest technologies and advice. The most significant changes I made are as follows:

- Revised [What's New in the Paperless Office](#) to cover changes in scanners, OCR software (including Acrobat Pro DC), cloud services, and more
- Added a [Privacy and Scanned Documents in the Cloud](#) sidebar about security and privacy considerations for scanned documents, including encryption
- Expanded and updated descriptions of desktop, convertible, and portable scanners in [Pick a Mac-compatible Scanner](#), and added a new category: [Book Scanners](#)
- Updated [Pick a Mac OCR Package](#) to cover Acrobat Pro DC and Vuescan, as well as newer versions of Evernote, Neat, and Readiris

- Added a [Scan to Notes](#) sidebar about automatically adding scanned documents to Apple's Notes app
- Included a topic that outlines my own process for naming and saving scanned documents; see [How I Name and File Scans](#)
- Updated [Automate OCR](#), and the various AppleScripts it refers to, to cover Acrobat Pro DC, ABBYY FineReader Express, and newer versions of Readiris
- Added a sidebar, [Using Hazel in Place of Folder Action Scripts](#), about an alternative automation approach
- Offered additional workflow guidance in [Choose a Naming and Filing Strategy](#) and [Scan All Incoming Paper Immediately](#), and added a suggestion in the sidebar [What If You Can't Scan Something?](#)
- Updated recommendations for various categories of mobile apps in [Pick an iOS Scanning App](#), and removed coverage of BlackBerry and Windows Phone
- Updated the instructions in [Always Print to PDF When Possible](#) to cover more recent versions of iOS
- Completely overhauled the instructions to [Add a Signature with Acrobat Pro](#) to support Acrobat Pro DC
- Modified [Use a Modem for Incoming Faxes](#) and [Use a Modem for Outgoing Faxes](#) to address the fact that macOS 10.12 Sierra no longer directly supports fax modems
- Added several references to relevant Take Control books, including [Take Control of Your Digital Legacy](#) (which discusses scanning photos and other documents, as well as long-term archival storage strategies)

Introduction

My feelings about paper might best be described as ambivalent. As I write these words, I'm sitting in a library surrounded by books of the old-fashioned paper kind. I've written several such books myself, and I've often formed opinions about people based on how many books (and which ones) are in their homes. Had paper not been invented, I imagine many other characteristics of modern life as we know it would never have developed. Paper facilitated the recording of history, the dissemination of knowledge, the spread of literacy, and a great many other worthwhile things that I'm grateful for.

On the other hand, I've also written dozens of ebooks like the one you're now reading, and have shifted most of my professional and recreational reading to books in digital formats—an activity made considerably more enjoyable by the Retina displays on my iPad, iPhone, and MacBook Pro. I like the fact that I can search, annotate, and back up my books now, and that I can accumulate as many as I want without running out of shelf space, as often occurs in my home.

But I truly lose all tolerance for paper when it comes to office paperwork—letters, forms, invoices, bank statements, receipts, business cards, flyers, note cards, catalogs, handouts from meetings and trade shows, photocopies of library book pages, and anything else that might end up on my desk in printed form. I used to have several filing cabinets full of the stuff, and overflowing—and yet, despite what I thought was an intelligent filing system, it frequently took me a long time to find what I was looking for. And because every day more paper would appear (some of it coming from my own printer), it was difficult to keep on top of it. The clutter became unmanageable, and I found that I spent far too much of my time managing paper rather than accomplishing useful tasks.

Never is the scourge of paper clutter more apparent than when I move, which I tend to do every few years or so. I get tired just looking at all those paper files, and I find myself cursing all those paper books that

I love to surround myself with, because they're so heavy and bulky. But most of my struggle with paper, I'm happy to say, is in the past. For several years now I've been moving toward a paperless office. I now receive, and generate, only a tiny fraction of the paper I once did. And virtually every paper document that comes into my life is scanned, converted to a searchable format, and digitally archived—so I can find nearly any document I need with a few keystrokes. And, because everything is backed up, I don't worry about my papers being wiped out by a fire or other catastrophe.

In this book, I explain how to do what I do when it comes to paper. By examining where and how you use paper and looking for suitable digital alternatives, you'll find that your productivity and happiness increase, while clutter and stress decrease. You might even save some money and benefit the environment.

Tip: Wondering why all offices aren't paperless already? Cecil Adams offers some interesting perspective in [The Straight Dope](#).

What I describe is a multi-pronged approach to eliminating paper. Of course, even if you avoid generating your own paper clutter and reduce the paper other people send you, some paper will still find its way to you—and you may have many thousands of pages already. So one of the central features of the plan I discuss is scanning paper documents and processing them in a way that retains their physical appearance while letting you index, search, select, and copy their text. I also talk about using devices such as the iPad, iPhone, and Kindle (and even digital cameras) to maximum advantage—and doing clever things you may never have thought of, like paperless postal mail and fax.

Let me be clear, though: I'm not going to tell you to get rid of all your paper, or that resorting to paper for any reason is somehow a moral failure. Paper has many noble uses, and I wouldn't pretend otherwise. You may choose to adopt all my recommendations, or only a few—everyone's different, so by all means, do only what works for you.

The plan I cover is appropriate for a home office or small business. If you aspire to take a large corporation paperless, I applaud you—but that sort of project is beyond the scope of this ebook.

I also assume that you have at least one Mac at your disposal. While everything I discuss can be accomplished in a comparable fashion with other operating systems, in this ebook I focus on Mac-compatible hardware and software. Unless otherwise noted, everything in this book should work with 10.9 Mavericks or later. Although much of this material also applies to earlier versions of Mac OS X, I don't call out any specific issues or differences.

Paperless Office Quick Start

This book shows you how to reduce the use of paper in your home or office and use digital representations of documents instead (or in addition). You can learn about these topics in any order, but most of the chapters follow a logical progression, so I encourage you to read linearly.

In any case, I urge you to start with [Meet Your New Paperless Office](#), which provides useful background information.

Take preliminary steps:

- If you read an earlier version of this book and have already taken steps toward a paperless office, read [Reassess Your Paperless Office Strategy](#) first; it tells you what you might want to reconsider.
- Learn about the goal and the steps you'll take to reach it; see [Meet Your New Paperless Office](#).
- Stop the flood: [Head Off Most Paper Before It Reaches You](#).

Digitize and dispose of most incoming paper:

- Decide on the most important tool for creating a paperless office; read [Choose a Document Scanner](#).
- Learn what features you need in Mac software to accompany your scanner in [Choose OCR Software](#).
- [Configure Your Software](#) for optimal efficiency and quality.
- Figure out the most convenient way to process papers you receive in [Create a Workflow for Incoming Paper](#).
- Devise a plan to scan all those paper documents already in your files; read [Work Through a Backlog](#).
- Capture digital copies of documents even when you're away from your scanner; see [OCR on the Go](#).

Reduce the amount of paper you generate:

- Learn how to break a printing habit painlessly (at least sometimes) in [Avoid Common Printing Needs](#).
- Discover digital signatures; see [Sign Documents without Paper](#).
- Say goodbye to your fax machine and hello to another 300 square inches of desk space; see [Fax without Paper](#).

Reassess Your Paperless Office Strategy

If you're reading this book for the first time, you may not already have a paperless office strategy—in which case, feel free to skip this chapter for now. But I suggest returning to it in a year or two, by which time you may benefit from its recommendations. If you already have a paperless office strategy, read on to learn the best way to proceed.

Because hardware, software, and online services change regularly, there may be better alternatives to some of the tools and workflow you now employ. And, once you have some experience converting paper documents to digital form, you may realize you're not getting the optimal efficiency, accuracy, or file sizes with your scanning setup—or that your organizational scheme isn't quite cutting it. All those things are worth reexamining periodically.

I begin with a brief “state of the union” look at what has changed in the last couple of years (as I write this in early 2017), and then say a few words about [Factors to Reevaluate](#) as you reconsider your paperless office strategy, both now and in the future.

What's New in the Paperless Office

Since the second edition of this book was published, a number of things have changed that might affect the way you approach the paperless office. Here are a few examples.

New Scanners Appear

The number and variety of scanners suitable for document scanning have increased, and greater competition has led to somewhat lower pricing. Document scanners have become so common, in fact, that I've started to wonder when they'll overtake printers in popularity.

Surprisingly, the category in which I've seen the least change is conventional desktop document scanners. There are some new models, but none that strike me as dramatically better than the previous generation—and Fujitsu's popular ScanSnap series is still headlined by the venerable iX500, just as it was in 2014 when the second edition of this book was published.

On the other hand, portable scanners are multiplying like crazy. And some of them, like the [Epson WorkForce ES-300W](#), rival desktop models in speed, quality, and features, while being small enough to carry in your computer bag and powered by a battery or USB cable.

Both desktop and portable scanners are increasingly likely these days to offer Wi-Fi, which can be used either in place of USB when scanning to your computer or, in many cases, for sending scanned images directly to cloud services such as Dropbox and Evernote.

And finally, a new category of desktop scanner is emerging. [Book Scanners](#), sometimes called contactless scanners, usually consist of a camera and lights mounted on an arm that's positioned above a book, magazine, or other bound material. With some special software tricks to digitally remove page curl, these scanners let you create high-fidelity copies of printed items that would thwart ordinary flatbed or document scanners.

OCR Software Choices Expand

In this book's [online appendixes](#), I list more than 20 sample Mac apps that can perform OCR. Apps of this sort have been proliferating in recent years, to the point where I can't even pretend to offer a comprehensive list. If you open the App Store app on your Mac and search for OCR, you'll find more than 100 apps that offer OCR capabilities of some sort—and there are still more that aren't in the App Store.

The same is true in the iOS App Store. Not only have iOS apps that offer OCR been increasing in number and quality, but the cameras on iOS devices have also been improving to the point that a mobile photo "scan" can produce results nearly as impressive as what you can achieve with a Mac or PC and a conventional scanner (albeit with less

speed and convenience). One notable mobile OCR app is [Microsoft Office Lens](#), which can deskew and clean up images automatically—and then convert them to a searchable PDF, or to Word (.docx) or PowerPoint (.pptx) format.

Cloud Services Evolve

Cloud services for file storage, syncing, and backup have become more numerous, more powerful, and (on average) less expensive. If you want to keep copies of your scanned documents online—whether for your own convenience or to facilitate sharing them—it’s easier than ever to do so. There are also more options for syncing cloud-based files with mobile devices.

One notable and welcome change in the cloud storage world that occurred after the second edition of this book was Apple’s introduction of iCloud Drive, which replaces an earlier iCloud feature called Documents in the Cloud. Documents (such as searchable PDFs) that you place in iCloud Drive on your Mac or iOS device are synced to the cloud and become available on your other devices, and are much easier to access using a variety of apps than they would have been with Documents in the Cloud.

Tip: If you find cloud services confusing or overwhelming, read my ebook [Take Control of the Cloud](#), which explains the cloud in plain English and helps you make sense of the numerous competing cloud services.

Acrobat Pro Changes Again

In the previous edition of this book, I complained about how Acrobat Pro, in the transition from version 9 to version X, lost a great deal of scriptability—and then, in the transition from version X to XI, lost even more. The result was that I couldn’t recommend Acrobat XI Pro as an OCR tool, because it couldn’t be made to process incoming scans automatically, and it’s too tedious to individually open, process, and save every scanned document.

I expected that the trend would continue with the latest version of Acrobat, Acrobat Pro DC. But I was pleasantly surprised to find that Adobe had not only greatly improved the Acrobat Pro's scriptability, but had also given the app the capability to perform OCR automatically when opening documents (just the first page is recognized by default, though you can change it to recognize the whole document). Of course, this required me to spend many hours modifying all my AppleScripts, since Acrobat Pro DC does things in a completely new way, but I think the effort has been worth it. I say more about this later, in [Automate OCR](#).

That said, my testing has shown me that Acrobat Pro's OCR accuracy is poor compared to several other tools that are cheaper and far easier to use. Therefore, although I'm no longer actively recommending that you avoid Acrobat Pro completely (as long as you're using the DC version), I think there are better OCR choices for most people.

Factors to Reevaluate

The mere fact that technology evolves does not, by itself, mean you need to change anything about your paperless office system. If everything you set up previously continues to work perfectly now, it's entirely reasonable to leave well enough alone. However, you may be happier or more efficient if you make a few strategic changes.

Here are some key questions you might ask yourself:

- **Are you content with your file sizes?** After you scan hundreds or thousands of pages, it's worth reviewing the amount of disk space they're taking up. Depending on your settings for resolution, color mode, and compression, you might be looking at anywhere from less than 100 kilobytes to several megabytes per page; those factors can be adjusted to improve the trade-offs among file size, OCR accuracy, and visual fidelity. If you have tons of free disk space, file sizes may make no difference to you (except, perhaps, when it comes to backups or cloud storage). But larger-than-necessary scans might become a problem if your computer has a low-capacity

SSD or if you frequently sync documents to an iPhone, iPad, or other mobile device. Experimenting with new settings may save valuable space in the long run. Read [Choose Your Main Scanning Options](#) for more.

- **Is the accuracy of your OCR software adequate?** If you're using OCR strictly as a way of searching for documents by the text they contain, near-perfect accuracy may be unnecessary. But if you frequently have trouble finding documents because of OCR errors, or if you find irritating mistakes in text copied and pasted from searchable PDFs, you might want to switch to different OCR software, or at least adjust your settings for better accuracy. See the sidebar [A Few Words about OCR Accuracy](#).
- **Could your workflow be simplified?** My recommended strategy includes defining a clear path for every paper that comes into your office (see [Create a Workflow for Incoming Paper](#)) as well as for the digital files you get when you scan them (flip ahead to [Choose a Naming and Filing Strategy](#)). But both components of your workflow have numerous options. If you often find yourself falling behind with scanning or filing, or if document management seems too cumbersome, review those sections of this book to see whether an alternative workflow might suit your needs better.
- **Is cloud storage a better (or worse) option than before?** You can store scanned files on a local disk, in the cloud, or both. If you opted for local-only storage, perhaps it's worth revisiting that decision, since cloud storage offers not only the security of having your data in a second location, but also simplified syncing among multiple devices (see [Local vs. Cloud Storage](#)). On the other hand, if you find you're rarely accessing documents stored in the cloud, you might be better served by cloud *backup*; see [Back Up Scanned Data](#).
- **Is newer equipment enough better to be worth the expense?** This year's scanner models are probably only a bit faster, and have only slightly better features, than those available a few years ago. If your current scanner is still working well, it may not be

worth spending hundreds of dollars to upgrade. On the other hand, scanners (like all machines) have a finite lifespan, and even shorter warranties. Plus, you may find spiffy new scanner features such as Wi-Fi support to be worth the expense. To learn more about the latest scanners, consult the [online appendixes](#).

- **Is mobile scanning worth another look?** If you tried scanning apps for your smartphone or tablet a few years ago and found them wanting, it might be worth giving them another shot—there are lots of new or improved apps out there. Likewise, there are more and better choices in portable, battery- or USB-powered scanners. If you frequently find yourself collecting papers only to scan and recycle them once you get back to your home or office, you might be able to make your life easier with a mobile scanning solution. See [OCR on the Go](#) and the sidebar [OCR for Students and Researchers](#).
- **Have your sharing needs changed?** When I wrote the first edition of this book, nearly all the documents I scanned were things that only I had to use. But since then I've started a business with my wife, and there are now have lots of business documents that both of us need to access, so I've had to rethink the way I store and share those files. If you have a greater or lesser need to share files than when you first set up your paperless office, reread [Choose a Retrieval Method](#) and the sidebar [Sharing Scanners](#) for advice.

If none of these things seems to apply, you're in great shape. But make a note to come back to this chapter in a year or so to see if your strategy could use an upgrade then.

Meet Your New Paperless Office

The idea of a paperless office may sound enticing, or even inspiring. It may also sound intimidating. If you make the transition to a paperless lifestyle, what steps will you have to take—and what will you get in return? In this chapter I look at the advantages of a paperless office (ranging from obvious to novel), and then describe some of its crucial components. I also help you imagine what your paperless office will ultimately look like.

Learn the Benefits of Ditching Paper

If you're reading this book, chances are you already have a paper-related problem you're trying to solve. You know the ways in which paper is causing you pain, so it's apparent how a paperless office would be soothing. But, in fact, a paperless office can solve many problems simultaneously—including some you didn't even realize you had! Let's look what you can accomplish by moving from paper to digital:

- **Reduce clutter.** Clutter reduction is a recurring theme in this ebook. “Clutter” may refer to the untidy piles of papers that litter your desk and haphazard filing systems, but even a scrupulously organized collection of paper documents counts as clutter if it takes up too much physical space—or too much of your attention—for comfort. Scaling back on paper brings order back to your office, and also frees up space on your desk and in your brain.
- **Save time and effort.** Filing a single document may take just seconds, but the endless process of filing, searching for, retrieving, and replacing papers can add up to hours per week. You'll still file digital documents, but searching will take far less time and be less error-prone—plus there's nothing to put back when you're done.

- **Save money.** In a paperless office, you save a little bit of money on paper (hey, it's not that expensive in the first place), but when you add up the savings in printers, photocopiers, ink or toner cartridges, envelopes, file folders, filing cabinets, extra office space to hold all the filing cabinets, and so on, the amount becomes more interesting. Even better, you're saving time (the previous point), which means you can be more productive.
- **Search everything.** You already know that you can search the files on your Mac easily. Wouldn't it be great if an electronic search could also turn up documents you've received in the mail, your old school records, business cards you received years ago, posters you saw hanging at the supermarket, and any other piece of text that you've encountered? (How about this: It took me about 2 minutes to determine that my father got an F on his final French exam in 11th grade because I had scanned all his old report cards!)
- **Share documents easily.** Printing or photocopying documents—and then handing them or mailing them to other people—is so 20th century. I can share digital documents with nearly anyone in a few clicks, and why shouldn't that ease extend to paper documents?
- **Back up physical documents.** You back up your digital photos and business documents (don't you?), but what if your tax returns, insurance records, contracts, and other crucial papers were lost in a fire or other disaster? Create digital versions and you can back them up too. As a bonus, you can give yourself remote access to all your scanned documents—something that's tricky to pull off with paper!
- **Save the planet.** I like to think I'm as concerned about the environment as the next guy, but my interest in reducing paper consumption has nothing to do with saving trees, eliminating waste, shrinking my carbon footprint, or any such thing—although it does all that too! I do it because it makes me happier, and it just so happens that it's good for the planet (at least in a small way) as well.

Tip: To keep up with the latest in the world of paperless office news, visit Brooks Duncan's [DocumentSnap](#) site or subscribe to his blog.

Understand Searchable PDFs

Although a paperless office has many aspects, one central principle is that many documents that are currently on paper will end up on your computer—in a *single special format*. That format is officially called “PDF Searchable Image,” but most people refer to it using the less-cumbersome term “searchable PDF.” Because this one unique format is the magical key that makes the whole system work, I want to give you a quick overview of the most common PDF (portable document format) varieties so you can see where searchable PDFs fit.

The PDF files most of us encounter daily were created in an app like Pages or Microsoft Word—nearly any app that can produce printed output. Except instead of printing, the document is saved in PDF format, which is relatively compact and looks almost exactly the same on any platform. When an app “prints to PDF,” the new PDF automatically contains searchable text. (There are occasional exceptions for text treated as objects, such as Word’s Word Art and Excel tables embedded in a Word document.) That means, among other things, that you can select and copy text in these PDFs, and that search engines such as Spotlight index their contents. This sort of run-of-the-mill PDF is officially called “PDF Normal.”

Normal PDFs can include graphics—either vector artwork or bitmaps that originally came from a scanner or a digital camera. But the PDF format can also be used as a simple wrapper around plain bitmapped images (for example TIFFs and JPEGs) without any other content. This second sort of PDF is officially called “PDF Image Only.”

When you scan documents, your scanning software will probably save PDF Image Only files initially. But then a second process occurs: optical character recognition (OCR), which identifies letters and words in the image. Years ago, OCR produced a plain text file as output or, if you were lucky, an ugly Word file. But today the most popular way to handle the recognized text is to add it as an invisible layer above the bitmapped graphic, with the position of the live text corresponding to the position of the characters in the graphic. So, underneath you may

have a graphic with dots that look like the word “sandwich,” and on top of that image is the text of the same word, which you can select, copy, or search just like the text in any normal PDF. This is the PDF Searchable Image, or searchable PDF format.

Note: For reasons I’ve never understood, most descriptions of the searchable PDF format emphasize that the text layer is *below* or *behind* the graphic. But that makes no sense—if it were underneath the graphic, you’d be unable to select it. It’s better to think of it as being above or in front of the graphic, but invisible.

The enormous advantage of searchable PDF over plain-text OCR output is that you can still see exactly what the original document looked like. And, if you were to print it again, it would look almost identical to the source document. Because no OCR tool is perfect, this also lets you verify what the document actually says, even if the recognized text has some errors.

Note: Some OCR software lets you correct recognition errors on the fly or edit the hidden text layer after the fact, either of which can improve searching accuracy. However, I don’t generally recommend such manual intervention, because it makes the scanning process vastly more time-consuming.

Meanwhile, the advantage over plain bitmapped images is that you can index, search, and use the text as text—even if you’re not always diligent or accurate when it comes to naming the scanned files. With searchable PDFs you can, for example, type a restaurant name into your search field and instantly see the scanned receipts that mention it, and you won’t have to know filenames or dates in order to find them.

Searchable PDFs are a wonderful thing, and because they’re the only way I know of to get this dual-layer effect automatically from an OCR app, every document you create as a result of using the instructions in this book will be in that format.

Note: Some kinds of text, such as text in non-Latin languages, or even English text that uses advanced typography (ligatures, small caps, super/subscripts, etc.) may not be searchable when converted to PDF. If you are using such documents, check their searchability before moving entirely to this format.

Converting Scans to Microsoft Word Format

For most people and most documents, searchable PDFs are ideal because they look and function much like the original documents. For example, you can annotate a PDF using an app like Preview or PDFpen just as you can mark up a paper document (see [Review and Annotate Documents](#)), but in neither case can you (easily) change the underlying text.

However, on occasion you may find it useful to be able to modify scanned documents—edit the text freely, rearrange the layout, and so on. Luckily, many apps can convert PDFs to Word format when the need arises, and although the conversion may not be perfect, it should be close enough to be useful. (If you don't use Word, you can import the Word files into Pages or any of numerous other word processors.) If the software bundled with your scanner doesn't offer Word format as an option, try one of the following apps:

- ✦ Smile Software's [PDFpen](#) or [PDFpenPro](#)
- ✦ Nuance's [PDF Converter for Mac](#)
- ✦ Solid Documents' [Solid Converter Mac](#)
- ✦ VeryPDF's [PDF to Word Converter for Mac](#)
- ✦ Wondershare Software's [PDFelement for Mac](#)

Of these, I have personal experience only with PDFpenPro, but I've found its results to be excellent.

Consider Storage Options

If your paper files are in a filing cabinet, then whatever disadvantages paper may have, you can at least be certain that none of the files will spontaneously evaporate, or lose part of their contents, due to a filing cabinet malfunction. Unfortunately, the same is not true of digital

data. Digital files typically live on a hard disk or SSD (solid-state drive) somewhere. And digital storage, by its very nature, is subject to all sorts of problems ranging from random directory corruption to user error to theft, not to mention just plain wearing out over time (a bigger problem with mechanical hard drives than with SSDs). So before you begin committing your files to disk—and especially before you get rid of the originals—think about where and how you’ll store the digital files themselves and the physical media they rely on.

I recommend, in particular, taking a moment at the outset to think about three main factors: disk capacity, local versus cloud storage, and media longevity. (Later in the ebook, I talk in more detail about another essential consideration: backups. See [Back Up Scanned Data](#).)

Disk Capacity

If you follow the instructions in [Configure Your Software](#), you’ll end up with nicely compact PDF files, and you may be able to fit hundreds or even thousands of pages worth of scanned data in just a few gigabytes of disk space. However, keep in mind that your data storage needs will inevitably grow over time. And, if you have tens of thousands of sheets to scan—especially if many of them are in color—you’ll need plenty of room for your data to expand.

In these days when bare 4 TB drives can be found for under \$100, it doesn’t make sense to skimp on capacity. If your Mac’s internal disk still has loads of free space, then you may be all set, but if in doubt, you might want to consider upgrading it to a more capacious model, or supplementing it with an external drive.

Because there are so many hard drives and SSDs to choose from, I can’t begin to give recommendations for brands or models. But I can say that for storing your digital archives, it’s worth paying a bit extra for a longer warranty—7 years is the longest I’ve seen, while 3–5 years is more common. And, all things being equal, if you purchase an external drive, buy one with the fastest interface your Mac supports. For example, Thunderbolt 3 is faster than Thunderbolt 2, which is faster than Thunderbolt and USB 3.1 (Gen 2), which are faster than USB 3.0

and USB 3.1 (Gen 1), which are faster than FireWire 800, which is faster than FireWire 400, which is faster—in practice if not on paper—than USB 2.0. Although SSDs are far faster and more reliable than mechanical hard drives, they also come at a somewhat higher cost, so you'll have to factor that into your decision.

In any case, check to see which ports your Mac has, or which you can add by way of an adapter.

Tip: If you need even more capacity than the largest available hard drives, an easy way to combine drives is to use one of the many [Drobo](#) storage devices, which can be upgraded easily to hold more data at any time.

Local vs. Cloud Storage

Although hard disks are still, in 2017, the main medium used for storing digital data, those disks need not sit in your office. They might just as easily be attached to a server somewhere in the bowels of an anonymous data center halfway around the world. Companies that traffic in data storage and transfer (including Amazon.com, Google, and countless others) offer data storage in the cloud at reasonable rates—perhaps less per year than what it would cost you to buy a new hard drive.

Tip: To learn more about the cloud, including how to choose a cloud storage provider given the ever-changing array of options, read my book [Take Control of the Cloud](#).

The advantages of cloud storage for your formerly paper documents are many—for example:

- **Space savings:** Hard drives take up space in your office, so if they're not in your office, you have less clutter.
- **Accessibility:** With cloud-based storage, you can access your data from any computer in the world with an Internet connection, which may not be true of disks in your home or office. You can also more easily sync your files with other devices.

- **Redundancy:** Cloud storage providers generally use RAID along with automated backups to protect your data against drive failures and user error. And, when used in conjunction with local storage, cloud storage gives you a second, offsite copy of your data that provides extra insurance against hardware and software gremlins. (Cloud storage as such isn't necessarily the same as online backup, however; see [Back Up Scanned Data](#) for details on the latter.)
- **Maintenance:** If a hard drive in your office dies or runs out of space, you have to buy a new one and copy all your data from a backup—a lengthy and tedious process. Cloud storage providers have systems in place to keep their equipment up to date and in good working order, relieving you of that burden.

The biggest downside to cloud storage is that it's *much* slower to copy data to or from the cloud than to store it locally. Unless you work for a large company with an Internet connection that costs more than the CEO's annual salary, you'll get dramatically better speeds with local hard drives. If the amount of data you want to store in the cloud reaches the tens of gigabytes or more, expect it to take weeks to upload over a moderately fast broadband connection.

Note: For the moment, I'm talking strictly about saving searchable PDFs, created on your Mac, in the cloud. Some scanners let you save scanned images directly to a cloud service, but when you do, you almost never end up with a searchable PDF.

There are ways around this—for example, some online storage services let you fill a hard drive and send it to them via courier in order to *seed* your online space; then, you add files to your online space as you go, which is far quicker. Even so, other potential problems remain. What if your Internet connection goes down and you can't get at your files? What if the storage provider goes out of business? The potential perils of cloud-based storage are such that I wouldn't recommend it as the *sole* place to keep your valuable scanned documents. However, I think the cloud makes an excellent *secondary* location for such files (just as it does for backups).

Cloud storage providers are multiplying quickly, and I wouldn't even attempt to catalog all the options. However, I can call your attention to a few services that let you store a significant volume of files online at a reasonable cost, and sync them with your Mac and other devices so that you can simply save files in one location and have them automagically transported to the other as well. Some examples:

- [Amazon Drive](#): \$59.99 per year for unlimited storage.
- [Box](#): 10 GB free; paid plans start at \$5 per month for 100 GB.

Tip: Many cloud storage providers offer discounted rates if you pay for a year (or more) at a time. So, in some cases, the net price you pay will be lower per month than what I list here.

- [CloudMe](#): 3 GB free; paid plans start at €1 per month for 10 GB.
- [DollyDrive](#): No permanent free storage, but a 14-day trial is available. Plans start at \$10 per month for 250 GB and go up to 8 TB (for \$198 per month).
- [Dropbox](#): Dropbox offers excellent performance and compatibility, and I've become a big fan—so much so that I wrote a book about it: [Take Control of Dropbox](#). Anyone can store 2 GB for free; 1 TB of storage costs \$9.99 per month.
- [Google Drive](#): Along with Web-based editing of word processing, spreadsheet, and presentation documents, Google Drive lets you store files of any type. You get up to 15 GB of storage free; 100 GB costs \$1.99 per month, and higher-capacity plans are available all the way up to 30 TB for \$299.99 per month.
- [iCloud Drive](#): Part of Apple's iCloud service. Includes 5 GB of free storage (shared across iCloud apps); paid plans start at \$0.99 per month for 50 GB and go up to \$19.99 per month for 2 TB.
- [Microsoft OneDrive](#): Formerly known as SkyDrive. 5 GB free; paid plans start at \$1.99 per month for 50 GB.

- [SpiderOak One](#): Plans start at \$5 per month for 100 GB; a free 21-day, 250 GB trial is available.
- [SugarSync](#): Plans start at \$7.49 per month for 100 GB; a 30-day free trial is available.

Privacy and Scanned Documents in the Cloud

Whatever the virtues of cloud storage, the flip side is an increasing concern about the privacy of the information in the cloud. Although anyone may have reason to worry about privacy, some people have a legal obligation to be especially careful.

In the United States, the Health Insurance Portability and Accountability Act (HIPAA) has provisions governing the security and privacy of medical data. Similar regulations cover other professions in which the confidentiality of client data is crucial. I've heard it said that HIPAA rules out any sort of Internet storage or backup, but that is not the case. You just have to carefully follow the rules (for which, peruse [this handy 117-page PDF guide](#)).

One of the main stipulations is that all data must be encrypted at the source (that is, on your computer) in such a way that no unauthorized person can decrypt it. Some cloud providers use such an arrangement by default, some offer it as an option, and others don't do it at all. To take CrashPlan as an example, its default password setting would not be HIPAA-compliant, but you have the option to use a private password or custom key, either of which does meet the standard. As another example, Dropbox Business, Education, and Enterprise customers can go through a process to become [HIPAA-compliant](#), but individual users cannot.

You must also observe requirements about longevity of data storage, traceability of changes, disaster recovery planning, and a number of other issues. Ensuring HIPAA compliance with cloud storage and backups is not trivial, but it's absolutely possible. If you're bound by HIPAA or similar rules, be sure to check with your cloud provider to confirm that it offers the necessary features and that your account has been configured in a HIPAA-compliant manner.

Media Longevity

As I mentioned earlier, hard drives, like all mechanical devices, eventually wear out, so if you're using them to store documents that you need to keep indefinitely, you should make accommodations for the drives' likely life spans. (The same, of course, is true of any media—CDs, DVDs, and even solid-state storage degrade over time, although at least in those cases you need not worry about mechanical wear.)

Tip: In my book [*Take Control of Your Digital Legacy*](#), I go into quite a bit more detail about the types of storage media you might choose for (very) long-term archiving and how you can increase the odds that your data will survive media failures in the distant future.

Specifically, I suggest incorporating the following into your paperless office plan:

- **Replace your physical media every 3–5 years.** I begin to lose faith in hard drives after about 3 years of continuous use, and after 5 years or so, I don't trust them at all. (Of course, I generally upgrade all my computers every few years anyway, so new hard drives or SSDs are just part of the deal.) Conventional recordable CDs and DVDs tend to last longer—especially if they're not used frequently and are kept in a cool, dry, dark place. But for long-term storage, it's still a smart habit to copy all your files onto fresh new media every 3–5 years (and verify that all the files on the new media are intact).

Note: Cloud storage providers automatically upgrade their hard drives, migrating your data in the process, when needed to ensure data continuity.

- **When feasible, buy higher-quality media.** A name brand hard drive with a 5-year warranty isn't guaranteed to last longer than an off-brand model with a 1-year warranty, but the odds are in your favor. Similarly, it's possible to buy rather pricey archival CDs and DVDs, which the manufacturers claim will last much longer than ordinary optical media. That's not a guarantee, but it improves your chances.

- **Don't forget to back up!** Backing up is always essential, but never more so than when you choose to dispose of original paper copies. A backup can save you from worn-out media among dozens of other problems. See [Back Up Scanned Data](#) for details.

A Word about Screen Dependency

You may notice that in reducing your reliance on paper, you're increasing your reliance on digital displays (computer monitors, iPhones, iPads, or whatever). This fact may have unexpected consequences, so please consider doing the following:

- ✦ **Expand your screen real estate:** You can easily spread out dozens of pages on a table and see them all at once, but if your only means of looking at digital documents is a single 11-inch display, you can only see, at best, one less-than-full-size page at a time. Monitors are getting larger and less expensive all the time, so you may want to think about buying more and/or larger displays.
- ✦ **Think small, too:** Although my iPad's display has fewer pixels than my 27-inch iMac, it lets me view digital documents in a wider variety of locations—and makes an excellent supplemental screen when I'm at my desk. You, too, may benefit from one or more smaller displays.
- ✦ **Go Retina:** Retina displays (currently available on all new iOS devices and most Macs) have sharper images, which may make it feasible to display more pages at a smaller size.
- ✦ **Have a backup:** The more you depend on digital displays, the more important it is to have a Plan B if one of them dies. This might include buying the AppleCare Protection Plan for your Mac, iPhone, iPad, or iPod touch; making sure your homeowner's or renter's insurance covers theft or accidental damage to your displays; setting aside money for rapid replacements if needed; or keeping an inexpensive spare display on hand for emergencies.

Envision a Paperless Future

All right, you've seen the benefits of a paperless office and you know some of the details about where you're headed—document formats and storage media and so forth—but what does your future day-to-day work look like without all the paper? If you can picture it, you're more likely to make it happen.

When you get to the chapter [Create a Workflow for Incoming Paper](#) you can read all the details, but in the meantime, here's the overall vision I'd like you to aim for:

- **You enjoy a clean desktop.** Where once stood stacks of papers (not to mention magazines and books), you now have clear view of your actual desktop, which you may not have seen in years. You can use that space for a second monitor, or an iPad, or pictures of your kids. And as your filing cabinets begin to empty out, you think about putting a nice decorative ficus in their place.
- **You receive much less incoming paper.** You've taken measures to ensure that most of the documents coming your way do so electronically, so you're not spending hours a day scanning.
- **You use your scanner regularly.** You may still (or for the first time) have In and Out boxes, but they'll take on new meaning. In will contain papers you've *only just* received and will scan by the end of the day. Out will contain papers that have been scanned, and can be shredded, recycled, or filed. In between them sits a shiny scanner, which has become your new best friend. (I elaborate on the setup you might employ later, in [Create a Physical Paper Path](#).)
- **You practice good habits.** Scanning need not be labor-intensive at all; you can set things up (see [Configure Your Software](#)) such that you do nothing more than press a button and move on to the next document. However, you may choose to get in the habit of expending a wee bit more effort as you scan to make it easier to find documents later. In any case, you'll scan all incoming documents as soon as reasonably feasible after you receive them.

- **You find documents easily.** When you need a document you've scanned, you usually know exactly where to look on your Mac. Using either the Finder or any of numerous document-management tools, you do a quick search for anything whose location isn't obvious, and it appears on your screen in seconds.
- **You generate little or no outgoing paper.** Your printer may be used so seldom it gets lonely. It's still there for times when paper is obligatory, but you no longer print, photocopy, or mail paper as a matter of course.

Boogie Down

If you're serious about eliminating paper but you frequently need to jot notes to yourself or family members, there's now a digital replacement for the paper notepad. [Boogie Board](#) is a line of devices from IMPROV Electronics that use low-power monochrome LCD displays. You write on the paper-like surface with a stylus, press a button if you want to erase and start over, and...that's pretty much it. Some models let you save pages and sync them with a computer or mobile device; others don't.

Depending on screen size and features, you can have a Boogie Board for as little as \$19.99. That's a lot more than a piece of paper on a clipboard, but a tiny fraction of what you'd pay for an iPad or even a Kindle. Is it worth it? I have no idea, but it's an interesting concept.

Getting Others on Board

Intelligent and forward-thinking person that you are, you've grasped the value of switching from paper to digital, and you may be ready to tackle the transition with great vigor. However, less-enlightened coworkers or family members might put up resistance, especially if they worry that a paperless office will involve significant expense or force them to change long-held habits.

If you're going paperless purely for your own benefit, it might not matter whether others do likewise, but in a business setting, getting rid of paper could be disruptive and frustrating unless everyone involved buys in to the plan. And even at home, kicking the paper habit will be far easier if everyone shares your vision. Here are some tips to do just that:

- ✦ **Review the benefits:** Play up the factors listed in [Learn the Benefits of Ditching Paper](#) according to what's most important to your audience (money, efficiency, environment, etc.).
- ✦ **Lead by example:** Convert your own documents to digital and demonstrate your increased productivity and decreased clutter.
- ✦ **Display adaptability:** Be prepared to meet others halfway, to consider alternative proposals, and to bend on your top choices for hardware and software. Some change is better than none.
- ✦ **Promise them toys:** With certain people, this works wonders: "Cancel your paper magazine subscriptions and I'll buy you an iPad." Or: "I'll approve your request for a larger monitor if you agree to start using electronic invoices."
- ✦ **Think about the kids:** Young children tend to feel ignored when their parents are staring at screens. But it's less of a problem if the screens are smaller and handheld, because this lets you change your position and look at the kids more. And remember, Dr. Seuss iPad apps are great, but actual paper books, which your child can hold, throw around, and gnaw on, are better when a parent isn't supervising.

Head Off Most Paper Before It Reaches You

In the chapter after this one, we begin the process of selecting, setting up, and using a scanner to digitize your papers. Once that's done, you'll be able to discard (most of) the originals so they no longer clutter your office. That's great—but wouldn't it be better still if the paper never reached you in the first place?

Before we attack the current and future paper flow, it makes sense to find as many ways as possible to prevent paper from arriving at your desk at all (assuming, of course, that you can obtain suitable digital replacements). This chapter provides a few ideas along those lines.

Sign Up for Paperless Billing

Most banks, insurance companies, utilities, phone companies, periodicals, schools and colleges, tax offices, and other entities that expect money from you on a recurring basis offer some form of paperless billing (or statements) and payment. In fact, this practice is becoming so prevalent that some companies now charge extra for paper bills, while others no longer offer them at all. In a typical case, you set things up such that you receive bills or statements by email, and then pay either by credit card or by preauthorized bank withdrawal.

I'm a big fan of paperless billing, and I use it as much as I can. Without it, I have to contend with a paper check (and frequent checkbook refills), a payment stub, a stamp, and a return envelope. And after all that, I still have an outer envelope (into the recycling bin) and a paper bill I'll probably never look at again (into the filing cabinet).

On the other hand, with paperless billing I generally get a PDF copy of my statement that I file on my disk and the convenience of paying in a few clicks—or, in many cases, none at all. In the case of automatic

payments, I also get peace of mind knowing that a faulty memory, illness, or other distraction won't leave me in the dark or the cold.

So your first mission is to think about what sorts of recurring payments you make that require an exchange of paper, and see if the payee offers a paperless option. The easiest way is to look online every time a paper bill appears in your mailbox.

However, before you go crazy making everything paperless, spend a few moments pondering the following:

- **Is your email under control?** If you have such an overloaded Inbox, or a flaky spam filter, that you're likely to miss emailed payment notices, you might want to think twice. Also, you might want to read my Macworld article series [Empty your Inbox](#).
- **Do you have a fallback plan?** An emailed payment notice isn't much good if you're away from your email for a long time—if you're on vacation, sick, or otherwise incapacitated. Does your spouse or partner have a reliable way to check and pay your bills? If not, talk it over and devise a plan before committing yourself.

Tip: You're less likely to miss billing notices if you set up a special email address that you use only and always for bills, and make sure both you and another person check that account regularly.

- **Do you monitor balances and schedules carefully?** I check my bank balances several times per week, and I have reminders on my calendar about upcoming payments, so I can be certain there's enough money in the right accounts to pay bills when they come due. If you do too (or if you're willing to change your habits to check your balances regularly), paperless billing is a good fit for you.

As a corollary, keep in mind that sometimes things Just Don't Work. Random server or router outages, or other gremlins in the ether(net), might cause a notice not to arrive, or an alarm not to sound. If you depend utterly on something being "in your face" to remind you about important payments, take the occasional failings of technology into account.

Choose a Document Scanner

Although the suggestions in the previous chapter should help you to cut down on the volume of paper that comes into your life, they won't stop it altogether—and they won't eliminate the paper you've already accumulated, either. So we move on to the next phase, which is scanning your documents so you have searchable digital copies, after which you can (at your discretion) recycle, shred, or file the originals. To accomplish this task, you'll need a scanner—and not just any scanner. In this chapter I explain what makes an ideal scanner for this specific application, mention a few good candidates, and help you decide which one to buy.

I want to warn you up front that the type of scanner I recommend is not cheap—a \$50 model probably won't cut it. But if time is money, then you'll recoup your investment many times over.

Learn Why Document Scanners Are Different

Around 2001, when I first realized that I wanted a paperless office, I bought a scanner that, according to my research at the time, should have been just the ticket. It was a high-resolution flatbed scanner (the kind typically used for scanning photographs) that came with an automatic document feeder (ADF) attachment, so I could lay a stack of papers in the tray, push the button, and—in theory—end up with scanned copies of them a few minutes later. But after trying this a few times, I got so frustrated that I gave up entirely. I want you to avoid making the same mistake, so let me explain the problems with my earlier setup:

- **My scanner was *sloooooow*.** Admittedly, everything was slower in those days, and it wasn't the most powerful scanner money could buy. But even at lower resolutions, scanning a single page could

take minutes, and that was far too long. Part of the reason for this was that the scanner was designed for precision and fidelity—fantastic for photographs, but overkill for text documents.

- **It didn't do duplex scans.** The design of the scanner and ADF was such that it could scan only one side of a page at a time. For double-sided documents (as many of mine were), I had to scan one side of all the pages, flip over the stack, scan again, and then laboriously sort the images into the correct order. Yuck!
- **It had no OCR capability.** Because the scanner was designed mainly for photographs, it didn't include OCR software of its own, and I couldn't find an affordable third-party OCR package at the time.
- **It required a lot of fiddling.** I had to put a lot of thought and effort into selecting the right combination of settings for each document—the scanner wasn't smart enough to figure out whether a page was color or black-and-white, what size it was, how to straighten it if it was crooked, and so on. It took a lot of extra manual effort to process the scanned files.

So that experiment was a bust, but I learned a lesson: for document scanning, what you need is a *document scanner*—a device that's designed expressly for that task. And most flatbeds—even newer, faster ones with duplex ADF capabilities—are not the best tool for the job. (I'm not knocking flatbeds, by the way. They're fantastic for scanning photos, books, and large or irregular papers. But if you need to plow through thousands of letter/A4-sized sheets of mostly text, not so much.)

Typical desktop document scanners look somewhat like fax machines: you load the pages to be scanned in the top, and the scanner pulls them through *quickly* (often at a pace of 20 pages or more per minute), scanning *both sides at once*. (Compare this with duplex flatbed scanners and multifunction devices that require two passes to scan both sides of a page—even if the process is automated, it still takes twice as long.)

Choose OCR Software

One way or another, you need software to turn your raw scans into searchable PDFs. OCR software of some sort most likely came with your scanner, but if it didn't—or if you're not happy with its features or accuracy—you have oodles of other choices. This chapter provides an overview of major factors to consider when choosing Mac-compatible OCR software, along with a few specific suggestions for software to try (or avoid).

Determine Your Needs

I haven't tried every scanner and every OCR app out there, but I'm going to go out on a limb and suggest that almost any combination of scanner and software can be made to yield acceptable results for most users. If you don't want to agonize over the decision, the path of least resistance is to use whatever software came with your scanner.

However, you may be the sort of person who should look more deeply into the capabilities of OCR tools before jumping in if any of the following statements apply to you:

- **You need to scan in multiple languages.** All the OCR apps I discuss here support English text, and most support at least a few other languages too. If you have documents in more than one language (and especially if your documents mix more than one language on a page), you'll want OCR software that supports those languages, as I discuss in the next topic.
- **You want capabilities your existing OCR software lacks.** Perhaps you've tried the software that came with your scanner and found it to be too slow, too cumbersome to use, or missing features you wish it had. If so, by all means look for a replacement!
- **You need more-advanced PDF processing features.** Some of the OCR programs here do nothing but spit out a searchable

PDF file, whereas others let you manipulate PDFs to your heart's content. If you want fine-grained control over your searchable PDFs, look for such a program.

If you have none of those needs, feel free to skip to the next chapter, [Configure Your Software](#). Otherwise, continue reading to learn about features to consider when evaluating OCR software.

Consider Important OCR Features

Comparing OCR apps for macOS is less of a science than an art—and a messy one at that. The information available on developers' Web sites varies tremendously in scope and detail. Some have elaborate user manuals, while others have only a brief how-to guide. Many offer downloadable demo versions, but some don't. Developers use different terms to describe the same features, and have wildly divergent ideas about what constitutes a nicely usable interface. A feature that one developer considers too obvious to mention may be a main selling point for another. And although most of these apps claim to have outstanding OCR accuracy, objective measurements are notoriously difficult to come by.

In short, it's harder than one might imagine to evaluate OCR software without trying it out (and even then, results may be ambiguous). However, a few factors are worth looking for:

- **Accuracy:** No OCR software is 100 percent accurate, but it's been a long time since I used OCR software that didn't come close enough to meet my basic searching and archiving needs. (Remember, if all you need to do with your PDFs is *search* them, occasional OCR mistakes won't affect your results much.) Nevertheless, because so many factors influence OCR accuracy—not the least of which is the quality of the raw scans that your scanner produces—it's possible for two people to have dramatically different results with the same app and even the same document. So, my advice is to take developers' claims of accuracy with a teaspoon of salt.

Configure Your Software

The best OCR software in the world can still produce lousy results if you don't set it up just so and give it the best possible input material to work with. You're looking for a combination of settings that gives you the best balance of OCR accuracy, processing speed, image quality, and file size. I help you figure out what those are in this chapter. I also show you several ways to automate scanning so that it takes as little manual effort as possible, and provide guidance about how to file your scanned documents so you can find and use them quickly in the future.

Understand the Scanning Process

The fact that your scanner includes OCR software, or that you've purchased such software separately, doesn't necessarily mean that the process of creating a searchable PDF from a scanned document will be straightforward. It *might* be, but more often than not, it's necessary to think through a multi-stage process, which may involve configuring the settings in two or more pieces of software.

Every scanner comes with customized software that handles the low-level communication between the scanner and your computer. For example, if you have a Fujitsu ScanSnap, the scanner-specific software is called ScanSnap Manager; with a Canon imageFORMULA scanner you'd use Canon CaptureOnTouch; with an Epson scanner it would be Epson Scan; and so on. This software is responsible for taking the raw data your scanner produces and turning it into a bitmap image stored on your disk. As a result, this software always provides some means of setting preferences such as resolution, destination, and file format. The scanner's software may include many other capabilities, too, but for the moment, assume that its only purpose is to spit out a bitmap image, as shown in the top row of **Figure 1**.

If you were scanning photos, then the bitmap image would be all that you'd need. But for scanned documents, an additional step is generally

necessary (the bottom row in **Figure 1**)—another piece of software opens the bitmap image, performs OCR on it, and generates a searchable PDF file.

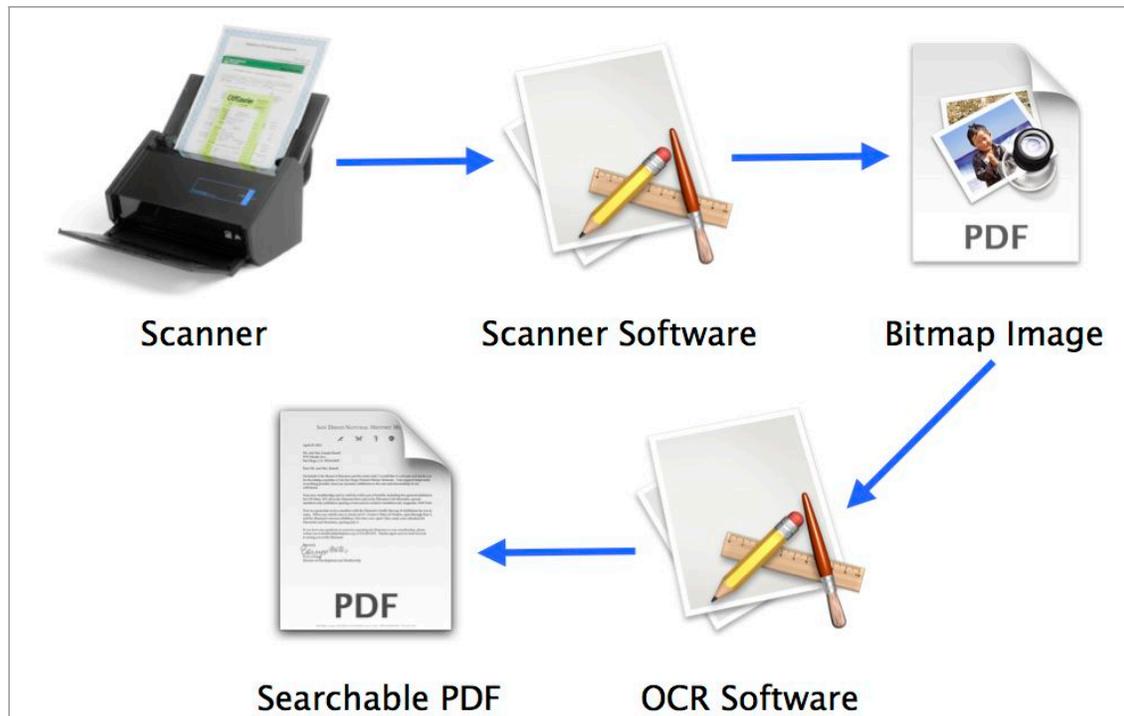


Figure 1: Produce searchable PDFs from paper documents with as little manual effort as possible—ideally, no more than a single button press.

Since you want to avoid manual effort whenever you scan, you may feel some concern about the fact that two or more apps may be involved. Fortunately, the process has several potential shortcuts:

- Some scanner software has built-in OCR capabilities, so you can skip the second app and go straight from scanner to searchable PDF without saving an intermediate bitmap file. Similarly, some document management software can do OCR, so you can pass it a bitmap image and let it do the rest.
- Most scanner software has an option to send bitmaps directly to an OCR (or other) app, so even though the file is saved somewhere on disk in the process, you need not do anything with it yourself.
- Most OCR and document management software can be configured such that, as soon as it opens a document, it automatically performs

Create a Workflow for Incoming Paper

Your scanner and software are now set up to process whatever you throw at them, and you've already thought about at least some elements of your workflow, such as what you'll name your searchable PDFs and where you'll store them. But to make your life even easier, you should take a moment to think through the physical path papers will take from the time they enter your office to the time they leave it (or get filed)—and how you'll find and use their contents once the originals are gone. This is the crux of the paperless office: the new workflow you'll follow, which will require you to adopt or modify some habits.

In this chapter I make sure you have a grip on the strategy for what you'll actually do when paper appears, and that you understand when and why to keep certain papers—and what you can dispose of.

Create a Physical Paper Path

If you're an organized, "everything-in-its-place" kind of person, what I'm about to say may seem obvious. But I've known few people who keep every piece of paper strictly under control, and many (including myself) who seem to have papers piled everywhere and, as a result, at least occasionally lose track of what's where, and what needs to happen to which papers. Since you're about to embark on a new system for dealing with papers, this is an excellent opportunity to figure out, definitively, what happens to all papers as soon as they come into your possession. Thus, I want to propose the following Life Principle:

Have a well-defined location for every stage of a paper's journey.

Let me explain what I mean and how you can make this happen.

Buy Some Boxes

I'm going to ask you to acquire at least two boxes, and maybe as many as six or eight (I explain why in a moment). When I say "box," I don't care if it's an actual box, a plastic or metal tray, a wall-mounted paper holder, a file folder, or a taped-off corner of a desk. However you want to think of a box, make sure you can clearly designate multiple geographical areas of at least 8.5 x 11 x 2 inches each to special uses.

Think about the traditional idea of an In box and an Out box—that is, two trays sitting on a desk, one for incoming correspondence and one for outgoing correspondence. This arrangement (which I confess I've never seen anyone use in real life) presumes that your In box is, in some sense, your to do list, and that someone else—perhaps a mail-room employee—is responsible for putting things there. You'll work through each item in that tray—reading it and doing whatever is required, whether that's writing a reply, filing it, making a phone call, or something else. Replies to incoming mail, along with new mail you generate from scratch, go into the Out box, where they're picked up periodically by the same person who puts things in your In box.

Now suppose you have an In box that you've designated solely for papers that will need to be scanned, and an Out box that's solely for papers that have already been scanned. Your setup looks like this:

In → Scanner → Out

In other words, you take something out of the In box, scan it, and as soon as it comes out of the scanner, it goes in the Out box. The path the paper follows is simple, obvious, and unambiguous. All you have to do is get in the habit of scanning the contents of the In box regularly—we'll return to that in a moment—and periodically emptying the Out box by filing, recycling, mailing, or otherwise disposing of its contents.

Such a setup may be adequate for people who receive relatively few pieces of paper and who are disciplined enough to move things from In, through the scanner, to Out, quite often. However, more complex needs may require some refinement.

Work Through a Backlog

Your scanner, OCR software, and paperless workflow may do a marvelous job of helping you deal with new paper as it comes in. But if you already have tens of thousands of pages in filing cabinets, you need to deal with all those existing documents too. It can feel overwhelming, but with the right approach you can work your way through even a substantial backlog in a reasonable period of time.

Prune Unnecessary Documents

I grew up in a family of packrats, so to some extent I feel a compulsion to save everything—not for any specific reason, but just in case it might be useful some day in the distant future. I try valiantly to fight it, but it always feels a bit painful to get rid of anything. That includes papers, of course, so for many years I accumulated box after box and drawer after drawer of papers, most of which I'll clearly never need to see again.

When I began my paperless office project, it was obvious that many of those papers could and would disappear, but a significant question was whether they should be scanned first. If I scanned everything, it could take months, and much of that time would be wasted, because the digital copies would do me as little good as the paper copies.

I readied a recycling bin, steeled myself, and adopted the most ruthless attitude I could muster—and then went through my papers, tossing as many as possible. Quite a few struck me as borderline, so I left them, but I repeated the process every six months or so, and each time found more papers I could live without having in physical *or* digital form.

If you have such a huge collection of papers that scanning them all would be inconceivable, consider doing the same thing. Everyone's different, but I can offer some general words of advice about pruning:

- **Start with the low-hanging fruit.** You *know* you can get rid of old junk mail, printouts of documents you have in digital form,

duplicates, unused reply envelopes, and numerous other items, so take an initial pass and toss the easy stuff.

- **Take your time.** You don't have to prune all the unnecessary stuff in one session. Do a quick pass now, then another one in a few weeks or months. Over time it gets easier!
- **Use logic.** For those of you who pay taxes in the United States, the IRS strongly recommends that you keep tax-related records for the last 3–7 years, depending on the type of document. Fine, but if (like me) you've saved every receipt and cancelled check back to the mid-1980s, your actions defy logic and serve no useful purpose. If you can't come up with a *plausible* scenario in which a document might someday be needed, out it goes.

To learn exactly what the IRS suggests in terms of preserving documentation, read the [Recordkeeping](#) topic. Of special note: the IRS accepts electronic copies of documents and even permits you to destroy paper originals, as long as certain criteria are met. For details, see [IRS Bulletin No. 1997–13](#) (PDF), specifically Revenue Procedure 97-22, which starts on page 9. (This information used to be much easier to find, and I wish it still were!) Obviously, this applies only to U.S. taxes—for other countries, check with your tax authorities.

- **Respect history and emotion.** In the interest of balance, I must admit that some papers have sentimental or historical value, even if they have no *practical* value. If those old love letters, high school papers, or other artifacts produce tears of nostalgia; if they might come in handy when writing your memoirs; or if you want to be able to show them to your grandchildren in physical form, then by all means keep them!

Note: I say much more about digitizing and saving photos, printed artifacts, and other memorabilia for future generations in my book [Take Control of Your Digital Legacy](#).

OCR on the Go

Perhaps you bought a portable scanner (see [Portable Scanners](#)) to take on business trips. That's great, but you can't always have your scanner with you. And even if you did, it wouldn't help with documents that won't fit in it—menus, posters, billboards, street signs, and so on. But all these and more are still fair game for capture and OCR. You just need a digital camera (which could be the one in your iPhone, iPad, or other mobile device) and an app to do the necessary processing. With the right mobile tools, you may find yourself scanning receipts and business cards on the spot.

Learn about Pocket-sized OCR Tools

Very likely you have a device in your pocket that includes a camera, a wireless network connection, and the capability of running third-party software. If so, you can do many of the same things you can do with a desktop or portable scanner and OCR software, and in fact you can do a few cool things more easily. For example:

- You can store photos of business cards, receipts, signs, posters, billboards, and the like in the cloud, and be able to search their text along with all your other notes and documents.
- You can photograph large or awkwardly shaped documents and perform OCR on them almost instantly.
- You can snap a picture of a menu at a French restaurant and, a few seconds later, get an English translation.
- You can capture an image of something containing text and have that text read to you by a synthesized voice. (Sometimes, you can even combine this with translation!)

These sorts of tools are great for travelers, especially those who spend time in places where they don't read the local language well. But

they're useful for anyone who, from time to time, wants to create a searchable record of something they can't put through a scanner.

I should mention that in many cases, apps that run on mobile devices don't produce searchable PDFs as such. The data may be stored in some other format, or you may need to use a proprietary system for searching it. Even so, such apps offer enormous advantages.

Pick an iOS Scanning App

In my household, all the mobile data gadgets are made by Apple, so I'm most familiar with apps that run under iOS. And there are hundreds upon hundreds of iOS apps that offer mobile scanning features of one sort or another.

However, not all mobile scanning apps are created equal. For example, some create PDFs but don't perform OCR to make them searchable; others do perform OCR but create only plain text files, not PDFs. Some work on both iPhones and iPads; others are iPhone-only. And some have special features that focus on business cards or receipts. So, be sure to read the fine print when considering which apps to buy.

Although I can't begin to do justice to the huge range of iOS apps in this category, here are a few representative examples out of many hundreds, divided into broad groups.

Business Card Scanner Apps

Dozens of apps let you snap a photo of a business card and extract the content to your Contacts app. Examples include:

- [Business Card Reader Plus](#)
- [SamCard](#)
- [ScanBizCards](#)

Avoid Common Printing Needs

Now that you've taken numerous steps to avoid receiving paper from others, and to get rid of the paper you still do receive, there remains another piece of the puzzle: how to stop generating more paper of your own. Kicking the printing habit can be hard, but in this chapter I help you to identify alternative ways in which you can achieve roughly the same end result.

Think (and Track) When You Print

You may hit Command-P dozens of times each day, out of habit or necessity. Sometimes printing truly is necessary—until all your business associates and family members join the paperless revolution, you'll be obligated to print certain things for their consumption. But countless pages are printed every day just because the documents' creators wanted to have copies “for their records” or “just in case.” Those printed pages are the ones you can most easily eliminate.

So, as an exercise, try this for a week. Put a piece of paper—yes, paper!—next to your printer, with three columns: Document, Pages, and Purpose. Every single time you pick up something from the printer, jot down the following information:

- **Document:** This could be the document's name, or just a word or two that reminds you what it was.
- **Pages:** The number of pages in that document.
- **Purpose:** Let's keep it simple, and make it one of F (for file), R (for review), or O (for other people). Things you print simply to put in a folder or filing cabinet get an F; things you print because you need to read them on the plane, or mark them up with comments, or otherwise review them, get an R; and things you print because

you have to give or send them to someone else get an O. (Feel free to expand or customize this list according to your needs.)

At the end of the week, review your list. You may be surprised at how many pages you've printed, and of those, how many are less than essential. Merely paying attention to what you print may help you be more conscious of how (un)necessary certain printouts are, and to cut back accordingly. But you may be able to go further. You're looking to eliminate as many of the "F" and "R" items as you can. I hope I've persuaded you in the course of this book that digital copies of files (which you already have, since you printed them) are just as useful as printed copies, and often more so—as long as they're diligently preserved, backed up, and accessible when you need them. Unless you're complying with rules set down by your employer, the government, or some other entity, the only thing forcing you to keep printing "F" items is habit. Try going without printing those items for a week or two (keeping in mind the other suggestions later in this chapter) and see how you feel.

And as for the "R" items...

Review and Annotate Documents

If you've spent years editing documents by hand, on paper, in red ink, it can feel unsettling to think about switching to a paperless method. I can't change how you feel, but I can tell you that paperless reviewing and annotation tools exist, are both powerful and easy to use, and offer numerous advantages over paper. I think they're well worth a try.

Many Mac apps that can open PDFs—including Preview (included with macOS), PDFpen, DEVONthink, and Acrobat Pro, among others—can also *annotate* them. Annotations are markings and notes that appear on a transparent "layer" above the document itself. Annotations don't alter the existing contents of the document, but they do add lines, shapes, sticky notes, comments, and in some cases traditional copy-editing marks. You can even use annotations to highlight text, in much the same way you could with a pen and highlighter. But, on a PDF,

Sign Documents without Paper

When a document requires a signature, it's natural to assume that it requires ink on paper. And sometimes it does, but in a great many situations, you can “sign” and electronically deliver a document, whether you originally received it in digital or physical form.

In this chapter I begin by talking about situations in which the recipient needs to see your handwritten signature. For many contracts, legal agreements, and other day-to-day business documents, you can substitute a scanned copy of your signature. Likewise, it's possible to collect someone else's handwritten signature on the go, typically using an iPad or other mobile device.

There's also another concept you should be aware of—a *digital signature*, which is a way of certifying that you, and you alone, are the sender of a message or the signatory of a document. I cover this sort of signature briefly toward the end of the chapter.

Determine When a Pseudo-signature Is Acceptable

When someone asks you to sign a document, simply ask this question:

Can I return this by fax or email, or is an original signature required?

You'd be surprised how often electronic transmission of a signature is considered perfectly valid. I've done this countless times myself—for example, when returning contracts for writing magazine articles and doing technical reviews for new books. If the other party is content with fax or email, I'm only happy to oblige. (And, as I explain shortly, you can send a fax by email, so it amounts to the same thing.) In cases where only an original signature is accepted, I send a piece of paper,

but in my recent experience that happens mainly in cases where the thing to be signed is of tremendous gravity (or a lot of money is involved). You'll probably need ink on paper for a lease, bank loan, or affidavit, but for run-of-the-mill contracts and agreements, an electronic signature should suffice.

I've heard that some financial institutions use software that flags signatures on faxes that appear to have been added digitally. Although I have no technical information on how this works and don't know which institutions use such a system, be aware that in rare cases you might get a phone call asking you to confirm a signature—even when the recipient accepts a fax.

Scan Your Signature

To be able to fax or email signed documents without generating more paper, the first thing you need is a good digital copy of your signature. To make one, follow these steps:

1. On a clean, white, unlined sheet of paper, sign your name in dark ink at a normal size. If your signature takes on multiple forms, put them all on the paper. For example, sometimes I sign my name “Joe Kissell,” sometimes “Joseph Kissell,” and sometimes “Joseph W. Kissell,” depending on the context; and occasionally, only my initials are required on certain pages.
2. Scan the page with your signature. If your scanner is normally set to reduce the resolutions of scans, bump it back up for this one—600 dpi is a good choice. And, even if you sign your name in black ink, do the scan in color. These extra tweaks will improve the quality of your scanned signature, which will in turn increase its perceived authenticity and the flexibility you have in using it later.
3. In your favorite image editing program (such as Preview, Photoshop Elements, or GraphicConverter), open the scanned image, crop it so only a few pixels of white appear around the outside, and confirm that the white truly is white. (If it's gray, or speckled, or otherwise

Fax without Paper

You may think of fax as an outmoded technology that was long ago supplanted by email, but countless people still send and receive faxes every day. In certain environments—notably medical and legal practices—it’s widely considered more reliable and more secure than email. If you can’t remember the last time you had to deal with faxing documents, feel free to skip this chapter. But if you do find a need to send or receive documents by fax, even if only occasionally, this final chapter explains how to do so without owning a fax machine or generating any paper.

Receive Incoming Faxes

I’m not shocked that people still send and receive faxes, but I am a bit baffled as to why anyone would want a *fax machine*, as such, in this day and age. Apart from the bulk of another device, there’s the infrastructure. Although a fax machine can sometimes share a landline with a telephone, doing so makes it more awkward for both the fax sender and the receiver—and if you give it a separate line, then that’s an extra monthly expense. Who needs all that bother?

Since you’re a Mac user, you have one or more excellent ways to receive faxes without having an extra box on your desk, and without generating extra paper. I’ll tell you about my favorite method first—the fax-to-email gateway—and then say a few words about using a modem.

Note: I’m largely ignoring multifunction devices (which combine printer, scanner, copier, and fax machine) from this discussion, because most of the arguments against using a stand-alone machine for receiving faxes apply equally to them, too. However, there are situations such devices may help to address, such as replacing fax modems in Sierra or later (as discussed later in this chapter).

Use a Fax-to-Email Gateway

A fax-to-email gateway works like this: You sign up with a provider and receive a private fax number. (Usually, you get to choose the area code—and sometimes the exchange too.) When a fax machine dials that number, a computer answers, receives the incoming fax, and saves the image as a digital file (perhaps a PDF or a multi-page TIFF). Then it sends you the file as an email attachment—or, in some cases, merely sends you an email notification and lets you download the image itself using a Web browser or desktop app.

Note: The eFax and Nextiva fax-to-email gateways let you keep your existing fax number (others may, too, but I have confirmed only those two). If lots of people already have your current number, using a service that requires you to switch to a different number may involve some inconvenience.

As far as the sender is concerned, the experience is identical to sending a fax to an ordinary fax machine—they'll never know that's not what they did. But from your point of view, receiving a fax is just like getting an email message. There's also a bonus: you can perform OCR on the incoming fax, just as you can on any scanned document (if the fax service provider doesn't already do this for you)—and then archive it along with all your other searchable PDFs.

Oodles of companies offer services like this, and pricing plans vary—you may pay a monthly fee, a per-fax or per-page fee, or a combination of these. But the prices are invariably less than what you'd pay for an extra phone line plus paper, toner, maintenance, and electricity for a stand-alone fax machine. Here are but a few examples:

- [eFax](#)
- [jConnect](#)
- [MyFax](#)
- [Nextiva](#)

I have no particular recommendations—my sense is that these services are more alike than different—but I'll just mention that I've been a satisfied jConnect customer myself for years.

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About the Author



Joe Kissell is the author of numerous books about technology, including [*Take Control of Your Digital Legacy*](#), [*Take Control of Your Online Privacy*](#), and [*Take Control of Dropbox*](#). He is also a contributing editor to TidBITS and a senior contributor to Macworld.

When not writing or speaking, Joe likes to travel, walk, cook, eat, and practice t'ai chi. He lives in San Diego with his wife, Morgen Jahnke; their sons, Soren and Devin; and their cat, Zora. To contact Joe about this book, [send him email](#) and *please* include [Take Control of Your Paperless Office](#) in the subject.

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