

■ Dedicated Scanners

Are you overrun with paper? Do you want to finally get organized and free up some space in your office or home? Digital scanners are still an integral part of moving towards a paperless environment. If you've been dreaming of the day when you can see the top of your desk, this newsletter will point you in the right direction.

Scanners convert text and images on paper or film into a digital format that can be stored on a PC or on external media (such as a portable hard drive or flash drive). Scanners not only reduce physical storage needs, they also reduce labor associated with manually entering the data into a computer and aid in disaster recovery especially if the data is kept off-site in multiple locations.

■ Tip of the Month

Portable Scanners

If you travel frequently or do most of your work in your car, you know how difficult it is keeping track of invoices, receipts, notes, and business cards. While dedicated scanners are fine for the office, they are generally too big for most people to carry around.

Portable scanners, on the other hand, are petite; you can easily fit them in a briefcase and weigh between 10 oz - 2 lbs. With some, you feed paper through an ADF (roller mechanism) while others work by holding the scanner in your hand and moving it down the page.

The biggest differences between models are the scan speed and document management software (i.e., creating searchable PDFs, managing business cards, invoices and receipts, and improving image capture). Although portable scanners aren't cheap (on par with many dedicated scanners), many find the convenience well worth the price.

As we mentioned in last month's newsletter, multi-function printers (MFPs) offer scanning capabilities as well as printing and faxing functions. While these devices are adequate for simple, infrequent jobs (such as scanning a few bills, a page in a book every couple of months, and your children's artwork now and then), if you have more robust needs, there are dedicated scanners that will offer more features specifically geared for scanning requirements.

Overview

There are two types of scanners - Flatbed and Sheetfed. Flatbed scanners have a large, glass plate upon which documents can be placed. Sheetfed scanners have an Automatic Document Feeder (ADF) that paper is placed in and feeds automatically. Some models incorporate both types which increases your productivity.

Most will scan in black & white and color and will automatically produce output files in PDF, JPG, and TIFF. Some mid- to high-end scanners include Optical Character Recognition (OCR) software that allows for the creation of searchable PDFs - a handy feature if you need to scan long documents and search for key words and phrases. They may also include image processing software like Kofax VRS, that works to improve your images whether they be text, color line drawings, or photos.

Scanner pricing is highly variable between manufacturers and models; anywhere from \$50 to \$5,000 or higher depending on the features and the quality of the hardware components. Most notable brands of scanners include Fujitsu, Canon and Epson.

■ Websites Worth Watching

1. www.nps.gov/findapark/feefreeparks.htm - 100 national parks will waive the entrance fee on August 14-15, September 25 and November 11. Check this website for the eligible parks around the country; 14 are in PA, MD and NJ.

Flatbed Scanners

There are several types of flatbed scanners; some have a flatbed plus an Automatic Document Feeder (ADF) allowing you to scan a stack of papers as well as books and magazines; some are small and inexpensive used mostly for the occasional scanned image; and some are specifically geared for scanning photos and film. Costs range from less than a hundred to thousands of dollars.

One of the benefits to all flatbed scanners is that the flat screen area allows you to scan bound material like books and magazines as well as artwork and any other bulky item. Documents that are stapled or have paperclips do not need to be disassembled which adds to the convenience.

Flatbed scanners are most commonly seen on Multi-Function Printers (MFPs) that combine printing, copying, scanning and faxing. These machines are useful for offices that put a premium on space and budget concerns. If you already have a mid- to high-end digital copier/printer in your office like one of the Canon imageRunner or the Xerox WorkCentre series, many of these machines can serve as network scanners. You may just need to enable this feature. Give our office a call if you'd like to explore this option.

For those that are looking to purchase a new device, there are a handful of dedicated flatbed scanners on the market right now that are in the same price range as low- to mid-end MFPs but will give you more scanning features in a smaller footprint.

The Epson GT-2500 (*Figure 1*), is a robust scanner with features that include: 27ppm (page per minute) for black text - 11ppm for color, 50 sheet ADF plus automatic duplex scanning, 1200 dpi for vivid color documents and sharp text, optional Network Interface Card and robust OCR software for post-output handling. With a retail price of \$500, this scanner is suitable for most small businesses with light scanning needs.



Figure 1. Epson GT-2500 Color Scanner

Another option is the recently released Canon ImageFormula DR-2020U (*Figure 2*). Features include: 20 ppm (simplex) and single-pass duplexing (40 ipm [images per minute] black&white, 20 ipm color), ability to scan bound material, text documents, photos, and business cards, and excellent software for manipulating the output.



Figure 2. Canon ImageFormula DR-2020U

Another type of flatbed scanner is used predominantly to convert photos and negatives to digital images although it can also be used to scan text documents. Although film and photo scanners used to be niche products that cost a pretty penny, newer consumer film scanners have received rave reviews for image quality.

Notably, the Canon CanoScan 9000F (*Figure 3*), retails for less than \$250 and offers many high end features usually found on professional equipment. This scanner includes special plates that allow you to scan 35mm and 120mm film, has 9600 x 9600 dpi (film), software that automatically corrects dust and scratches, adjusts color, and even removes the gutter shadow in the spine of an opened book. The primary light source comes from LEDs which enables this scanner to be ENERGY STAR certified.



Figure 3. Canon CanoScan 9000F

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Sheetfed Scanners

Sheetfed scanners (*Figure 4*) are generally smaller than flatbeds and work best with standard to legal size paper and even smaller pieces of paper like individual receipts. They work especially well for offices that need to scan large quantities of non-bound manuals, invoices, legal documents and more. They will not accommodate pages in books or magazine articles unless you rip them out. You'll also need to remove staples and paperclips to avoid damage.

Some sheetfed scanners, like certain flatbed ADFs, have a duplexing option allowing you to scan both sides of the page without having to manually rotate – a real timesaver especially since many duplexing sheetfed scanners scan both sides at the same time effectively doubling the output speed.

Some higher end sheetfed scanners can be installed on a network. If your needs require you to have more than one scanner, a networkable option will reduce the equipment footprint in your office and increase worker productivity.

One drawback to sheetfed scanners is that since the page being scanned is moving, you may notice skewing (the output may not appear entirely straight on the page) or double feeds (scanner feeds more than one piece of paper at a time). This occurs most frequently with smaller pieces of paper like receipts either fed through individually or taped to another piece of paper.

Workgroup Scanners

At the higher end of dedicated scanners are Departmental and Production models. These larger size scanners can cost thousands of dollars but with 60+ ppm scans, 5,000+ daily scan volumes, paper input trays of 100-500 sheets, and professional document management software and features, these scanners are true workhorses.

Networking is optional enabling many people in the office to access the scanner quickly and efficiently. As with lower end models, these production models offer both sheetfed and flatbed options for increased efficiency.

The Fujitsu fi-6140 (*Figure 5*), in particular, is a notable



Figure 4. Fujitsu ScanSnap S1500 - highly rated sheetfed scanner that excels at documents up to legal size - scans 20 ppm, duplexing, converts docs to searchable PDFs. The top and bottom close for a neat condensed package, similar in size to a loaf of bread.

If this is a concern, look for scanners that have special roller feed mechanisms and software that can detect and fix skewed images and prevent double-feeds. If cost is an issue though and linearity is crucial, a flatbed scanner may be a better investment.

For both sheetfed and flatbed scanners, the pre- and post production software has made great improvements over the years. You can now scan directly into Microsoft Word for editing or import directly into MS Outlook or MS Excel. Features such as auto page size detection, auto de-skew, auto rotation, and auto color or grayscale detection increase the ease of use and reduce operator interventions.

scanner for its speed, paper handling and supporting software. It can achieve 60 pages or 120 images per minute (duplex) and offers numerous features for ensuring accurate and efficient output such as multifeed alerts, auto de-skew, auto color recognition and much more.



Figure 5. Fujitsu fi-6140 Color Duplex Departmental Scanner

Scanner Terms Explained

CCD – Charge Coupled Device – refers to the type of element that produces the scans. CCD sensors have been around since the 1970s and are considered tried and true. They are used in digital cameras, video cameras, telescopes and more.

CMOS – complementary metal oxide semiconductor – an image sensor used in scanners as well as digital cameras and other devices. CMOS has been around since the 1960s like CCD sensors but is now just becoming cost effective.

CIS – contact image sensor – another image sensor used in lower quality scanners. Purchase a CCD or CMOS scanner for the best quality.

DPI – dots per inch – this value indicates the resolution

of the scanned image. For instance, a scanner that produces 1200 dpi will produce a better image than one at 300 dpi because more information is included in the scan. An industry average is 600 dpi although much depends on what you are scanning. Scanning text works fine at 300 dpi while scanning a full color image may require 1200 dpi or higher to capture shadows and fine details. Look for scanners that list optical resolution rather than digital.

OCR – Optical Character Recognition – this is the software that converts the original image or text to a digital version that can be saved on a PC, Mac, or other device.

ppm / ipm – pages per minute / images per minute. ppm refers to simplex (one-sided scanning); ipm refers to duplex (two sided scanning).

Features to look for in a Dedicated Scanner

- Software to create searchable PDFs
- Minimum 300 dpi (text); 600 dpi (color); 1200 dpi (photos)
- Ability to eliminate blank pages (when using ADF), three hole punch marks and black specks
- Paper Feed Detection – Auto-rotate and straighten; auto adjust for color and b&w pages
- Quick scan options – scan-to-email, scan-to-Word, scan-to-print, scan-to-folder, etc.
- Robust software package for managing output files; Better options include: ABBYY FineReader (OCR), Adobe Acrobat (PDF creation/editing), OmniPage (OCR), and Kofax VRS (image processing)
- Duplex scanning (scans both sides simultaneously); distinguish from Duplex ADF which will automatically scan one side then the other side.
- Networkable - found on mid- to high-end scanners

Conclusion

A dedicated scanner is a worthwhile investment if you have large or frequent scanning needs or you need more robust features than a Multi-Function Printer can provide. Both flatbed and sheetfed scanners are appropriate for consumers and businesses alike; the choice lies with the types of documents you need to scan and the features you desire.

Flatbed scanners allow you to scan books, magazines and other bulky items in addition to photos and film. Most have an 8.5" x 11" glass plate but some have an 11" x 17" plate (expensive). Sheetfed scanners have an ADF and work with single sheet paper only (usually up to legal size paper but some will accommodate longer lengths). Many flatbed scanners also include an ADF which gives you the best features of both.

When researching, look at the optical resolution, speed and paper handling, and the bundled software including document management (remove blank pages, remove dark spots, de-skewing, etc.) as well as post production work. Some scanners will include specialized, professional OCR and image editing programs while others will include simple software that can only handle light duty tasks.

With the variety on the market, you should be able to find a dedicated scanner that fits in your budget.

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