

How to get the maximum usable image output from your high-volume scanning solution.



By taking a holistic view of the entire scanning process and considering all of the aspects involved, you will be better enabled to evaluate how your scanner choice will impact your operation's actual productivity.

For the best solution, think outside the scanner.

It's best to begin a discussion of scanning by considering your endpoint. Namely, usable images delivered to the host system. Outputting the most images per hour at the least cost are the business drivers for any high-volume scanning operation. Customer service, time-to-money, and total cost of operation all depend on real productivity.

When your operators are handling thousands of documents a day, subtle differences between how scanning solutions perform in the real world matter a lot. At the numbers you're processing, seconds per batch and fractions of cents per page can add up quickly. With that in mind, it's important to recognize that scanning is not just a scanner; it's a process—with multiple, interdependent steps. You want every step to be as efficient as possible.

Follow the path from paper to posting.

Generally, a scanning process will include the following steps:

- Document preparation—paperclips and staples are removed; documents are rough- and fine-sorted into batches as required.
- Scanner operation—an operator inserts and/or stacks batches of documents into the scanner's feeder mechanism. The operator makes adjustments, starts, and stops the machine. Calibration and maintenance may be required on a periodic basis. The transport mechanism of the scanner moves documents past the camera and into an output area for removal by the operator.
- Image capture—inside the scanner, illumination, optics, sensor technology, and electronic processing technology create a digital copy of each document.
- Image processing—a variety of technologies can come into play to optimize the quality of the raw electronic image.
- Output preparation—image editing and manipulation put images in the correct orientation and file format(s), and any necessary QC/QA and indexing are performed before images are uploaded to server storage.

The features and capabilities of the scanner can impact each of these steps.

Check for horsepower and traction to avoid spinning your wheels.

With the process clearly in mind, you can easily see how scanner specifications shouldn't stand alone in your evaluation.

Take speed for example. What good is a higher speed rating if the scanner's feeding mechanism isn't flexible and reliable? A given scanner may require a more or less homogenous mix of document weights and sizes to maintain that speed. As a result, your process will only chew up more time in document preparation.

For real efficiency, you'll want to look for both speed and feeding flexibility. Kodak recommends testing any scanner with a carton of real documents from your operation. Include examples of the good, the bad, and the ugly. Think of how much less labor is required when you can mix everything from onionskin to cardstock within the same batch and let the scanner capture hundreds of pages in unattended mode.

Being user-friendly to your operators will make you happy, too.

When you test drive a scanner, put yourself in the operator's seat. Check the reach to the most-used controls. Are the controls laid out logically and their functions easy to understand? Is it easy to load documents and add to a stack in the feeder? How "forgiving" are the feeder guides and pickup rollers to imperfectly jogged documents? Is the feeder truly autofeeding or does the operator need to nudge the stack every once in awhile to keep things flowing? Can documents be removed from the exit hopper and filed without excessive reaching or reordering? How easy is it to perform routine cleaning and replace parts, such as feeder rollers?

Ergonomic issues aside, you'll get more usable image output per hour the easier a scanner is to operate. The best scanner operators are good multi-taskers. The best scanners will support this by running in an unattended mode, enabling the operator to focus on loading and unloading documents. In the best-case scenario, an operator can serve multiple scanners at once. So get out of the chair and consider how easy it would be to maneuver around the workspace with one or two or more scanners and operate the controls and load and unload documents while standing.



Last, but not least, there's the scanner's software user interface. This too, should be as understandable and easy to use as possible. You want one that will enable all scanner functions without any complication. It should be easy to store and retrieve setup parameters. The icons and menu logic should present the most used functions without requiring excessive memorization or searching. A good user interface will reduce errors and limit the time the scanner is sitting idle, waiting for operator input.

Ergonomics that work for you.

Operators are most productive when scanner features are conveniently positioned. For instance, the feeder platform of the **Kodak i1860 Scanner** pictured here adjusts to the user's height, sitting or standing.

When image quality is automatic, so is throughput optimization.

The computing world gave us the expression “garbage in equals garbage out.” It may seem obvious to offer up an imaging corollary: “optimized capture equals optimized output.” The better job the scanner does, the less work (and time) required for image processing and output preparation. As a bonus, better image quality will minimize error rates from post-process text recognition engines and PDF conversions.

A host of scientific papers have been written about image capture. For our purposes we can simplify what happens inside the scanner to the basic elements of illumination, optics, a sensor, and processing. The sensor “sees” the light that’s bounced off the document and focused through the optics. The sensor outputs a stream of digital information which is converted to usable data by dedicated image processing software.

In a well-designed scanner, all of these elements will be matched to each other and work in perfect harmony. DPI resolution becomes a non-issue because image processing can output excellent images at a lower sensor sampling rate. And host applications deliver image fidelity with lower-dpi output, reducing the load your high-volume operations place on bandwidth and storage space.

Let a “smarter” scanner do more of the work for you.

If you glance back at our scanning process summary, you’ll see that time and labor are major components of the process outside of image capture. Here’s the best news yet: a scanner with sophisticated image processing capabilities can increase usable output per hour by reducing human involvement in the process.

For instance, which of the following sounds more efficient to you?

- A scanner that will rotate all document images within a landscape-fed batch at 100+ pages per minute.
- A post-scanning step in which an operator must “tell” editing software when and how to rotate images.

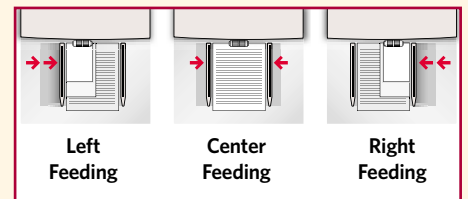
Obviously, the scanner wins. And when the scanner can detect color and switch modes accordingly, remove black borders, and perform electronic color drop out, all without an operator touching a button, your process is more efficient. When processing forms, the scanner load can be further reduced by scanning only a selected area. The latest Perfect Page autorotation technology from Kodak will detect document orientation based on page content. When the front of a document is portrait mode and the back is a landscape mode chart or spreadsheet, for instance, the technology will “fix” the images so that both are output as right reading.

Some **Kodak** Scanners will automatically calibrate themselves while scanning to maintain uniform white levels and consistent color output. Others will simultaneously output bitonal and color or bitonal and grayscale images to further reduce the need for presorting or scanning a second time to capture photographic content. The bottom line is that by reducing the number of times an operator needs to “touch” documents or make an adjustment, advanced scanner capabilities can rev up your process.



Simplicity and speed go together.

A touch screen operator control panel frees the user from a computer console. Menus and features can be selected with the touch of a finger to streamline operation of the scanner.



Feeding flexibility to match your workflow.

Ideally, your operator should be able to load a large stack of documents and step away to do other tasks, such as batch preparation. Moveable feeder guides and intelligently placed pickup rollers help this process.

Find the right balance for yourself.

In the end, it's up to you to decide what mix of scanner speed, duty cycle rating, and features best supports your scanning process and your high-volume document imaging applications. Purchase price should not be a prime consideration, as it's likely to be less of a factor overall than the ongoing expense of labor. Better you should reduce the labor, training, and skill level required to maintain your desired output levels.

Scalability is another issue to consider. Some customers have found that one operator managing multiple **Kodak** i800 Scanners in parallel makes more sense than using a single, higher-cost scanner. The effective page-per-minute rate is based on three feeding systems instead of one. Information is available to mission-critical applications sooner. This configuration also provides built-in redundancy in case of stoppages, albeit at a reduced rate.

And that brings up one more issue to include in your consideration set: scanner service and support. In a high-volume, production environment, even the most robust, reliable scanners will require attention from time to time. You'll want to make certain that your solution is backed by a responsive, global organization with the depth to help you keep scanner uptime at its peak. After all, your scanning process and usable output levels depend on it.

For more information about document imaging for enterprise content management or to learn more about **Kodak** Document Imaging Products and Services, contact your Authorized Reseller of **Kodak** Products, call 1-800-944-6171, or log on to www.kodak.com/go/docimaging.



Everything within reach.

A well-organized workspace also contributes to producing the maximum output per hour. In the example shown here, the operator can prepare batches, run the scanner, and manage output without leaving her seat.

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