

# Mobile Document Capture: Scanner vs. Phone Camera



### A White Paper

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Despite the trend toward everything digital, paper has not gone away. And while we have great technology in our offices to capture, organize and share the information we possess in paper form, finding a solution for reliable document capture while on the road has been difficult.

A portable scanner is an attractive option with the functionality of being able to scan almost anything, anywhere that you have your laptop. But what if you don't have a laptop with you, or don't want to carry it? Or you do, but you are somewhere with no Internet connection and you desperately need to send your scanned file to someone else? You could take a picture with your cell phone, but is that really the best solution?

When given the choice to capture a document with a portable scanner or a phone camera, there are many issues to consider. And many people would simply say, "but, my phone is with me all the time, I'll just take a picture of the document, it's good enough." Maybe...

Portable scanners have taken a tremendous functional leap recently with the introduction of the Xerox® Mobile Scanner. This mobile scanner represents a new category of portable scanners that "talks" to mobile phones and pads. These battery-powered, cordless scanners don't need a computer to operate. They are simple to use, create a PDF or JPG file of your scanned page and store it on a USB stick or SD memory card. To make it even more impressive, the Xerox Mobile Scanner comes with a wireless SD card that transmits the scanned files to your computer, phone, pad or the cloud over any Wi-Fi network. So now it is possible to not only scan without a computer, but also transfer the files to your phone and share them anywhere. Let's consider the options and consequences of all this.

First, using a phone's camera alone to capture documents produces limited, low-quality results. Several things contribute to the poor results:

### Lighting

Your phone camera relies on reflecting light to the lens. You either get limited ambient light or harsh flash, hot spots on the page, glare on glossy photos or magazines, basically inconsistent and unpredictable lighting.

### **Focus**

The camera shot is often out of focus from trying to frame the document and getting too close.

### **Aspect**

The camera is rarely at the perfect top-down angle while the scanner positions the document perfectly flat and at the proper angle.

## Cropping

You have to crop your document as best you can with the phone camera and you'll still get more table top around the document than you want. The scanner auto-crops any size document from a business card to legal page.

### Quality

Overall, the image quality is superior on the scanner. Zoom in on a camera photo and the same page captured with a scanner and see which holds up better. Cameras do a great job at portraits & scenery, but not documents or photos of photos.

### File Size

The scanner's file size is less than half that of the camera photo, yet the scanner has better image quality.



Xerox Mobile scanner scans a document in 10 seconds and provides superior quality and detail while keeping the files sizes to a minimum.



There are some new apps for smartphones that are far more sophisticated at document capture than simply using your phone's camera. I've tried many of these and, I'll admit, they are an improvement over the camera alone, but that doesn't mean this solution is the one you should go with.

# **Phone Apps**

The Phone Capture Apps (PCAs) still rely on the camera and therefore are prone to problems:

- Glare and hot spots from the flash still make the document lighting inconsistent.
- Image Enhancement (sort of an Auto-Exposure) by the app helps to clean up some bad lighting, but it's not great. Results are not optimal or consistent.
- PCAs usually have a "bounding box" for you to crop and straighten the photographed
  document and it does its best to judge where the document ends, but you still have to manually
  stretch the bounding box to capture the entire document when the PCA's auto mode is not
  100% right.
- A page that's been folded introduces many problems, different focus levels, lighting and irregular edges. At best you need two hands to hold the document flat and another to take the photo.
- Capturing a single document might be convenient with a PCA, but I'm going to get very tired of using these PCAs if I have to scan 10 pages or receipts.

So, if I had only my phone, would I use one of these PCAs to capture a document? Absolutely. It's better than nothing and with a little luck, it would be adequate. But my mobile scanner will give me high quality results every time (better than any phone camera every time and better than any Phone Capture App every time).

### Test

I conducted an informal but very controlled test of a document that came in the mail today, the back of my 1099-HC Massachusetts Health Care Form. The original is a standard 8  $\frac{1}{2}$ " x 11" US Letter document, clean laser copy and folded to fit in a standard #10 business envelope. I compared an iPhone® 4 camera (high quality 5.1 MP) coupled with a free app called Genius Scan which many users have asked about as a substitute for a mobile scanner, against the Xerox Mobile Scanner with its free iPhone app, DocToMe.

Genius Scan first re-oriented the document image upside down so I had to rotate it 180°. The app does auto-cropping, image enhancement, and lets the user select PDF or JPG file format. It also allows the user to pick among small, medium, large and actual size when emailing the image. Being marginal quality, I opted for actual size to put image quality at its best and to fairly compare with the Xerox Mobile Scanner which also acquires the image at actual size.

My Xerox® Mobile Scanner was set for black and white PDF. It scanned the document in 10 seconds and wirelessly delivered the PDF image above instantly to the iPhone app, DocToMe.

### Conclusion

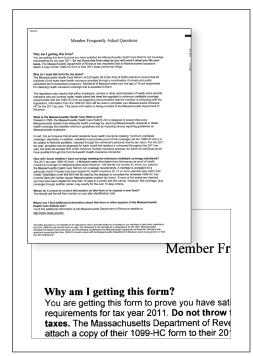
Quality clearly suffers with the phone camera and Genius Scan and it would be an act of last resort. If I want to capture documents with any regularity and quality is important, then the Xerox Mobile Scanner is my mobile scanner of choice, any scanner.

### **Consider this**

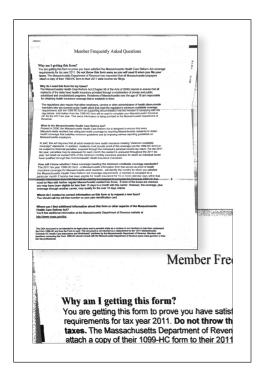
Would you use your phone's camera to shoot your vacation to Europe? Would you use your phone's GPS as your main GPS device in your car? Of course not. In a pinch, your phone's apps do an adequate job for both of these functions. But with any regularity, you want a full function device, one that was designed for this purpose because it has been optimized for quality, productivity, ease of use and compatibility.

Why do people buy Kindles instead of reading books with the Kindle app on their phone or computer? Jeff Bezos, Amazon CEO, explained, "People want a designated device, people want a purpose-filled device, where no trade offs have been made, where every single design decision [...] has been made to optimize for reading." Substitute "scanning" for "reading" in Jeff's quote and you have another well-stated reason why you should use scanners over a phone camera to capture documents.

For more information about the Xerox line of scanners, visit www.xeroxscanners.com



Scanned page and a detail zoom shown above scanned by the Xerox® Mobile Scanner as a B/W PDF at 300 dpi. The file size is 80 KB,



Picture of the same page and a detail zoom taken by the iPhone 4 Camera w/ Genius Scan app as a B/W PDF, 5.1 MP sensor. The file size is twenty times larger at 1.5 MB.

