Dynamsoft™

Using Webcams for Document Scanning

10+ Years of Experience in TWAIN SDKs
and Version Control Solutions

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In certain offices, such as banks, passport processing centers, tax and accounting businesses, etc., staff there often have the need to scan IDs, forms, and other documents. Sometimes, they might also need to take a picture of customers' faces. For digitization of various kinds of documents, the most commonly used devices are scanners or document cameras. However, a simple webcam might also be good to add. This is a device many customers have at home. So, your services could be extended to letting customers submit documents from their homes too.

With the webcam market continuing to grow in use for the foreseeable future, developers can take advantage of their use for such purposes. It can add a convenient alternative as an image capture solution.

There are many webcam options available. Below is a quick comparison chart:

	Scanners	Document cameras	Common webcams
Idea for	Scan a bunch of pages at a time	Scan several pages at a time; scan identifications, etc.	Headshot
Price	$150 ~ $400	$150 ~ $400	$50 ~ $150
Image quality	Good	Good; pixels at 3 million, 5 million, 8 million or even 10 to 16 million	OK; one or two million pixels in general
Paper jam	Possible	N/A	N/A
Maintenance costs	Scanner cartridge replacement can beexpensive.	Low	Low
Compatibility with various paper thickness, hardness, size	★★★☆☆	★★★★★	★★★★★
Capture portraits and documents with just one device	No	Yes	No

Going by the comparison chart, the document camera is a winner if you only scan a small number of pages at a time, which is the case at many offices. A staff member simply puts the document on the flatbed, and the document will be automatically photographed, in about a second.

Problem with document cameras

But document cameras alone are usually not enough to integrate into common workflow scenarios. Your developers need to customize the features based on your business rules. It will not be easy.

First, some document cameras don't provide a software development kit. Document camera vendors that do offer a kit usually only provide an ActiveX control. The beauty of this technology is that Internet Explorer is better supported. But, it does not support any other more modern browsers, such as Chrome, Firefox, Edge, and more. So, typically this means it will not provide cross-browser support.

Another drawback is that the development kit features and capabilities vary for different document cameras. If we use more than one type of devices, we need to customize the code for each model.

Product's design

To quickly develop a high-quality electronic imaging system, assuming your budget allows it, you may try a third-party image acquisition development kit. Take the Dynamsoft Camera SDK as an example. It offers a JavaScript API that captures images from webcams and document cameras using a web browser. The web-based development control enables live streaming of video clips and photo capture using just a few lines of JavaScript code.

It supports a variety of server-side programming technologies and deployment environments, including ASP, JSP, PHP, ASP.NET and other common server-side programming languages. It also provides cross- browser support.

Advanced functions

Dynamsoft Camera SDK comes with advanced image processing functions. This includes automatic document border detection, perspective correction, auto crop, and artifact reductions.

The feature set provided makes the SDK ideal for SMB to enterprise-grade document management application managers that want to enable document capture from mobile devices. Image enhancement features include the cleanup of most noise, shadows, distortions and other photo artifacts. In addition, users can be given image processing options for rotating, cropping and converting to grayscale.

Camera resolution requirement

For ideal image quality, we recommend cameras with a pixel resolution of at least 5 MB. Good image quality is important for various reasons. Clear and easy to read text leads to higher accuracy in applying optical character recognition (OCR) technology. It improves overall recognition accuracy and speed, which in turn does the same for your workflow.

One of the most significant ways to take advantage of content capture is to use OCR. This technology extracts text that is part of an image to be converted into content that can be edited ore used elsewhere. For example, someone can scan an ID to automatically populate a person's name or address into an application or database.

Dynamsoft has other useful features in its Camera SDK and complementary SDKs that work great alongside the Dynamsoft Camera SDK.

Automatic border detection, perspective correction, auto crop
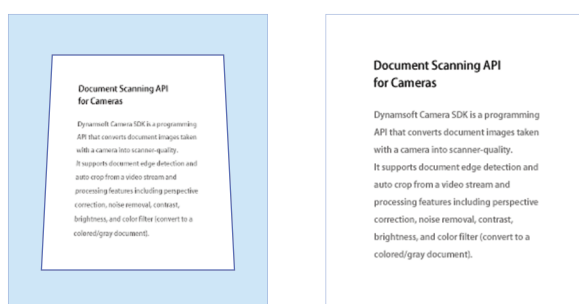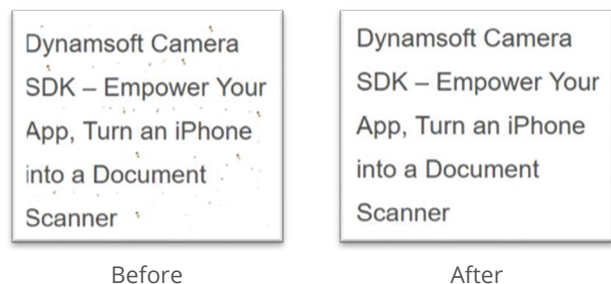

Before   After

Despeckle

Despeckle is used to remove small defects due to dust, or scratches, on a scanned image, and also moiré effects on an image. It removes noise from images without blurring edges.

| Before | After |

Sharpen the text

Sharpening makes the text more distinguishable from the background. This not only makes text more legible, it helps make OCR more accurate.

Auto brightness and contrast adjustment

Image enhancement is used to process a given image so that the result is more suitable for human reading. Brightness and contrast are important factors in image quality.

Shadow removal

This removes a color cast such as a shadow on part of a document.

PDF generation module

With this module being part of the SDK, images can be saved as PDFs for storage. Dynamsoft Camera SDK also employs image compression techniques to reduce the exported file size.

Text recognition module

Dynamsoft also offers an OCR SDK which can be used to extract text from the scanned images. In today's typical office, just capturing a document to digitize it is usually not enough. In most cases, data extraction from images is important.

The OCR feature supports text detection and recognition within your images, along with automatic language identification. Developers can build, test, and deploy applications for desktop, web, and backend solutions. You can also use it for iOS, Android, and other mobile APPs.

Conclusion

With the right hardware and software, the workflow and collaboration efficiency of your office can be s improved compared to a paper-based office. Expanding your applications' reach to include more hardware, such as webcams, can also help you serve more customers and make things more convenient for them. Combining this with other useful technology, such as an OCR SDK, can truly take your content capture capabilities to new heights. Ultimately, it will let you offer your customers a more enjoyable and faster service experience.