5 Minute Guide ...

Scanners

What is a scanner?

A scanner captures 2 dimensional objects (like documents, photographs, or slides) and turns them into a digital format that can be viewed on a monitor. Digitized images can then be manipulated using software packages. There are different types of scanners depending upon what kind of material being scanned. Most commonly, Flatbed and Film scanners are used. A flatbed scanner is used for all non-transparent items (like letters and photographs), while a film scanner is used for the transparent items (like negatives and slides). It is possible to use a flatbed scanner for transparent items but the end image will not be as high in quality. A transparent media adapter (TMA) can be purchased for flatbed scanners. This will dramatically improve the quality of scanned transparent items over that of a flatbed scanner, but will not be as good as a film scanner.

Why are scanners useful?

Scanners are useful for digitization projects because they allow us to convert analog (non-digital) images into digital images. Without these, our projects could only have objects in them that were born digital, which would seriously limit the scope of our projects.

How do scanners work?

Similar to a photocopier, place the item on the glass plate. Inside the scanner there is a light that illuminates the item. The scan head (made up of mirrors, lens, filter and charge-coupled device (CCD) array) passes slowly over the document. The image is reflected from one mirror to another. Some scanners have two mirrors, others have three. The last mirror reflects the image onto a lens, which in turn reflects the image through three colour filters (red, green and blue) on the CCD array. Then, the scanner combines the information from these three filters into a single full-colour image.

Quality: resolution and depth?

Resolution and bit depth are key concepts in digitizing items. Resolution refers to the number of dots per inch (dpi) and determines the clarity and detail of the image. Bit depth refers to the richness of colour - the higher the bit depth the more colour values are used which results in better contrast between colours. The bit depth and resolution used depends on two things: what is being scanned and your budget. The minimum recommended resolution is 600 dpi. If scanning negatives, slides or film transparencies, the resolution should be even higher to make the clearest digital image. The minimum bit depth is 24 bits, but a minimum of 30 bits is recommended. An average flatbed scanner usually has a 24 bit depth. Currently, no matter the bit depth used, output from the scanner will be in 24 bit depth – these values can be modified, however, with image editing software like Adobe Photoshop.

What can be scanned?

While some items may need a professional company to do the scanning, like maps or other oversized objects, many objects that are suitable for scanning in house. These include photographs, letters, diaries, newspaper clippings, and postcards, for example (just be aware of copyright restrictions!). Digital images can easily be turned into websites and accessed by portals to bring your content to the internet user. By adding context to your images through commentary or stories, a more complete picture can be made available.

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did you know?

The first photo was telegraphed over wire in 1920!

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Scanner reviews

Canadian Heritage Information Network: Creating and Managing Digital Content:
Scanner Reviews:
www.chin.gc.ca/English/Digital_Content/Hardware_Software/scanners.html

CNET Reviews: Scanners:
reviews.cnet.com/scanners/?tag=leftColumnArea1.0

Consumer Search: Scanners: Reviews:
www.consumersearch.com/scanner-reviews

Colour management

Creative Pro
www.creativepro.com/article/out-of-gamut-getting-a-handle-on-color-management

International Color Consortium: ICC White Papers: Fundamentals: Digital Photography Color Management Basics
www.color.org/whitepapers.xalter

Web Hosting Database: Colour Resources: Color Management
http://whdb.com/2008/follow-the-rainbow-101-color-resources-for-web-designers

Imaging Software

About.com: Graphics Software
http://graphicssoft.about.com/od/productreviews/Reviews_of_Graphics_Software_and_Software_Books.htm

Digital Photos: Photo Editing software Reviews
www.digitalphotos101.com/photo-editing-software.htm

Copyright

Government of Canada: Canadian Intellectual Property Office: Copyrights
www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/h_wr00003.html

Creative Commons: Canadian Copyright Law
creativecommons.ca/index.php?p=cacopyright

Canadian Library Association: Copyright Information
www.cla.ca/AM/Template.cfm?Section=Copyright_Information&Template=/CM/HTMLDisplay.cfm&ContentID=5919