ACCESS

There are three major aspects to access: searching, display, and printing.

Searching

Ideally, searching for images using a library or archive's patron access catalog should be possible. Not only does that ability provide a powerful searching tool for searching by author, title, subject, series, keyword, and other index terms, but it does so using a command language with which the user is likely to be familiar. Further, the ability makes searching across materials types, including print and digital images in a single search, possible.

Many vendors of automated library system not only support MARC, but also Dublin Core and EAD, so they expand the data elements that can be indexed and searched.

Almost all vendors of automated library system support the linking of a bibliographic record with an image using the 856 tag. The link can be direct or through the Internet as the 856 field can store a URL.

Almost all automated library systems support the Z39.50 protocol, thus permitting you to search one or more other automated library systems using the search commands with which you are familiar. If the system on which the search is initiated supports broadcast searching, several target systems can be searched at the same time and a unified search result returned. Theoretically, you could search for all images of a particular person, building, or event on several systems.

Although a minority of automated library system vendors offer imaging modules, most of those that do offer imaging modules also offer products that can be interfaced with the automated library system of another vendor, so you don't necessarily have to purchase both from the same vendor.

Unfortunately, Z39.50 is supported only by vendors that focus on the library and archives markets, so the selection of a system from a vendor that focuses on the business and government markets means patrons can't search multiple systems using a familiar user interface.

Some libraries and archives with image collections make these available from the Web server, but not from the patron access catalog. Adding an icon for the image server on the opening screen of the patron access catalog and other patron and staff workstations is a simple matter. Libraries and archives that have done so have found more users launch an image search from the patron access catalog than from the Web server.

The ability to search image databases based on purely visual characteristics is still in the experimental stage. The Query By Image Content (QBIC) system attempts to find images like the one chosen as an example or matching a pattern drawn by a searcher. Other systems seek to match on pattern, texture, and image outline.

Display

Except for the monitors, the PCs used in most libraries to access the Internet are suitable for the display of images. Most monitors in libraries do not support the resolution and dynamic color range required for the proper display of images. A good monitor should have a large screen size, high resolution, and must support adequate video RAM to create images that are a true representation of the original.

A 19- or 21-inch monitor, 8 Mb of video RAM, and 1,600-by-1,200-line resolution are highly desirable. A high refresh rate that is flicker free is important to prevent eyestrain. The minimum refresh rate to prevent flickering is 66Hz; the optimal is 75Hz.

Brightness is also an important consideration, especially in well-lit environments as are common in most libraries and archives where print materials and manuscripts are also being read. Under most fluorescent lights, a monitor projecting 20 to 23 footlamberts—the standard measurement for brightness—is sufficient for most people. In some brightly lit libraries, however, installing monitors that project 25 to 28 footlamberts is desirable.

Most large-screen monitors uses CRTs (cathode-ray tubes). CRTs create images on the screen by using a gun to shoot a beam of electrons at red, green, and blue phosphors painted on the back of the screen, thus creating the range of colors you see on the screen. This means the color is represented as three additive values of red, green, and blue. The most widely installed SVGA (Super Video Graphics Array) monitors only support 8-bit color because they are limited by the amount of video memory installed on the system. This means they are limited to the display of 16 simultaneous colors, which is no better than older generation VGA monitors.

All SVGA standards support a palette of 16 million colors, but the number of colors that can be displayed simultaneously is limited by the video memory. An SVGA monitor rated at 800 by 600 dpi usually supports only 16 simultaneous colors; one rated at 1,024 by 768, 1,280 by 1,024 or 1,600 by 1,200 supports 256 simultaneous colors.

Differently calibrated monitors render the same image differently. Color management systems are being developed to standardize calibration, but they are not yet widely available. Most laboratory tests include ratings of color fidelity.

CRTs come in two types: shadow mask and aperture grille. A shadow-mask monitor aligns the beams of electrons as they pass through a sheet of metal riddled with tiny holes; aperture-grille monitors align the beams using an array of thin wires. Fewer electrons are able to pass through the shadow-mask structure than through an aperture-grille one, therefore shadow-mask monitors do not offer as sharp an image and rich colors as aperture-grille monitors.

Most CRTs have a slightly curved screen, which can introduce subtle image distortions. There are a few flat-screen monitors. They offer a better-looking image and are less prone to glare, but they continue to be substantially more costly than CRT monitors.

Laboratory tests conducted in the second quarter of 2000 by *PC Magazine, PC Computing,* and others determined that 21-inch monitors costing $1,500 offered the best overall quality at that time. Prices are expected to drop at least 20% by the second quarter of 2001. A year later it may be possible to purchase 19-inch flat-screen monitors for that price.

A library or archive should also consider providing for group viewing of images. There are now many reasonably priced digital projectors suitable for use in a large well-lit room. Among them are the Mitsusbishi LVPX 300, a 2,000 lumens projector, at $5,999; the Viewsonic PJ1060, a 2,000 lumens projector at $5,199; the Hitachi CP-X960W, an 1,800 lumens projector, at $5,190; the Mitsubishi X200, a 1,200 lumens projector, at $3,495; and the Sanyo PLC-SU20N, a 1,200 lumens projector at $3,449.

For more information go to the manufacturers' Web sites:
www.mitsubishi.com
www.viewsonic.com
www.hitachi.com
www.sanyo.com

Printing

Printing technology for monochrome images has made much progress in the past few years. Desktop laser printers operating at 600 dots per inch are now commonplace and inexpensive—typically $400 to $500. Faster printers offering a resolution of 1,200 dpi cost $700 to $2,500. Color laser printers offering 600-dpi resolution cost $2,400 to $4,700.

Inkjet color printers offering a resolution of 600 dpi cost as little as $100. If high quality is desired, an ink jet printer offering 2,400 by 1,200 dpi can be purchased for $500 to $1,000. The most popular model is the HP Deskjet 2500Cxi, a printer that produces nine pages in color every minute. It is priced at just under $1,000. It is the most widely used by libraries and archives that sell copies of images.