A LETRASET WHITE PAPER:

THE NEW GENERATION OF ELECTRONIC TOOLS
FOR GRAPHIC ARTS PROFESSIONALS

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Until recently, most graphic arts professionals shied away from using computers in their work. Their reluctance was less from timidity or "computerphobia" than from a legitimate concern that the quality of their work would suffer. Graphic designers and production artists have a keen sense of aesthetics and craftsmanship. Moreover, their clients typically accept only the highest quality work. Thus for computers to win favor in the graphic arts world, they had to perform as a tool that would enhance—not compromise--the graphic arts professional's craft.

For graphic design applications, all but the most expensive computers--costing upwards of several hundred thousand dollars--have traditionally fallen short on several counts. Their graphic displays were crude in both resolution and color. Their underpowered microprocessors were inadequate for manipulating complex images. The few available design software products--typically meant for CAD/CAM engineers or corporate desktop publishers--had little relevance to the specialized needs of graphic artists. The difficulty of learning and using most computers blocked any real gains in productivity and creativity. Small wonder that graphic designers and production personnel have elected to stick with their traditional arsenal of pens, T-squares, knives and airbushes.

Now, with the arrival of powerful desktop computers--most notably the Macintosh II--affordable solutions are available for sophisticated design, page make-up, and prepress production work. These computers, teamed with the appropriate software, provide designers with a rich set of interactive tools for experimenting with ideas, developing concepts, and testing different approaches.

Production artists have a way to speed and simplify layout, paste-up, type manipulation and image assembly. And much of the work of prepress production personnel is streamlined by easy-to-use tools for such tasks as color correction, color separations, photo retouching, image processing, and cropping, scaling and positioning photos. At all stages of the production process, the new desktop computers promote effective, aesthetic designs by providing unlimited flexibility to modify them.

As a result, the graphic arts community is beginning to welcome these new tools. Users will include graphic artists and designers, creative directors, production artists and prepress operators in diverse fields: advertising, magazine publishing, TV/video and multimedia, fashion, corporate communications, product labeling and packaging, industrial design and architecture.

The total potential market is enormous, consisting of more than 300,000 potential businesses and nearly one million individual users in the U.S. alone. According to market researcher Mills Davis (Washington, D.C.) the proportion of sites using computerized graphic arts systems will soar from less than 20 percent of the potential market in 1989 to 50 percent by 1995. This migration to computerized graphic arts systems reflects the confidence that graphic arts professionals are beginning to have in computers as tools for enhancing their creativity and output.

Better software

"The software coming out four years ago failed to provide the subtlety and control that graphic designers need," says Wendy Richmond of W. Richmond & Associates, a Cambridge, Mass. based consulting firm. She points out that graphic designers have grown familiar with traditional tools by working with them day-in, day-out throughout their career. When considering a software package purporting to do the same thing, they saw it as a foreign solution to a familiar problem--and a limited one at that.

With good reason. Desktop publishing software is designed for a different set of users: corporate publishers, entrepreneurs, consultants, and business communicators. These users may know how to select between 10 point and 14 point type, and between Times Roman and Gothic. They may, if they're good, be able to import a scanned image and manipulate it on the page, generate a chart program and import it into the document, or adjust the leading on a caption so that it's easier to read. But none of them is trained to be, or even pretends to be, a graphics professional.

Desktop publishing software is then, by definition, comparatively easy to use, and limited in the number of options it presents to the user. But graphics professionals can never have enough options. To experiment freely, they need the widest possible variety of colors, grayscale imaging capabilities, typefaces, and tools for manipulating them to create special effects with precision and nuance. Software designed for this group must be uncompromising in this respect, and it will have to be developed by companies that fully understand the needs of the graphic arts community.

Professional graphic arts software must include:

- **Full color control.** By 1992, according to Davis, Inc., 75 percent of all professional graphic arts systems sold will be color, up from only 20 percent today. A professional graphic arts system should provide users with several color models: i.e., PANTONE*®, CMYK (cyan, yellow, magenta, black), and HSV (hue, saturation and value). It should take full advantage of advanced 24-bit color displays to create true color images, provide color separation, and be able to output to a production system for both final proofing and printing.

- **Image manipulation.** Professional software provides a high degree of control over the image. The package must be capable of displaying an image on-screen that matches the final printed page. It must be possible to manipulate all screen elements easily, including freehand rotation and distribution. And there should be sophisticated features for creating special effects; for example, Letraset's ColorStudio package provides users with full 8 - bit density masking to blend color images.

* Pantone, Inc.'s check-standard trademark for color reproduction and color reproduction materials. PANTONE Computer Video Simulation used in this product may not match PANTONE-identified color standards. Use current PANTONE Color Reference Manuals for accurate color.

- **Page design.** A professional page layout program will give designers creative flexibility in their natural working environment, in experimenting with design elements, and in achieving special effects. Ideally, users will have the option of working with the most suitable layout tools. These might include grids, guides, or customized rulers. An electronic pasteboard allows users to easily add, delete and move text, display type, illustrations and other objects around on the screen as desired. It should also be possible to interactively rotate fonts, illustrations and other objects at any angle. These capabilities give designers unlimited ability to experiment with layout concepts, and to modify the positioning of objects in fine-tuning a design.

- **Display type libraries.** Graphic designers need a broad library of high-resolution display fonts, as well as facilities for customizing them. A good professional package should provide users with a large and growing library of fonts digitized to the highest typographical standards. Letraset, for example, creates from 15 to 40 new typefaces each year for the LetraFont Type Library™. The typefaces, in the form of electronic font outlines, reflect the latest trends in the design industry. These fonts can be set as-is in headlines created with another package called LetraStudio™, or they can be creatively modified with any of LetraStudio's facilities.

- **Typographic control.** All page layout packages can arrange type in columns and headlines. But professional packages should also provide extremely precise interactive leading, kerning and tracking, a flexible baseline, and other special effects for the creation of logos, advertising headlines, and other graphic elements.

This is a tall order, one that is unlikely to be filled by a single package. Instead, the trend in professional graphic arts software is toward a suite of highly specialized packages that provides a complete portfolio of tools which can be further tailored by users for their specific needs.

Letraset's ColorStudio™ package, for example, provides sophisticated color image manipulation, photo retouching, and special effects such as masking for photocompositions and montages. Another package, LetraStudio, provides a way to create and modify display type for headlines, film titling, and other applications. The capabilities of the two packages are distinct, and there are many users who would need one feature set but not the other. Yet the two products are fully compatible, and they can be used by a designer in conjunction with one another to create a sophisticated color image with innovative display fonts.

Better hardware

Even if the perfect professional graphics software had been conceived of years ago, only the most expensive computers could have run it. Only recently have low-cost computers emerged that can serve as professional graphic arts tools.

"There are many reasons why desktop publishing failed to grab the graphics marketplace, but the most compelling was the limitations of desktop computers," says Terry Wellman, vice president of marketing and sales for Optronics, a manufacturer of high quality imagesetters and color separators. "Graphics professionals weren't lured by systems whose hardcopy output was only 300 dots per inch, 64 shades of gray, with little or no color."

But hardware manufacturers have made enormous strides over the last several years. Most of these advances are embodied in the Macintosh II, which has become the desktop computer of choice for the graphics industry.

First of all, the Mac II, like other advanced computers, is much more powerful than its predecessors. It has a 32-bit processor which delivers power once found only on large mainframe and minicomputers--the power needed to create a smooth and natural graphics environment.

In addition to sheer processing power, the Macintosh II outpaces earlier desktop systems in terms of memory, both in the form of disk space and internal random access memory (RAM). Both are required to deal with space-consuming high-resolution graphic images. To get an idea of just how much memory storage is required, consider that a single 3.5 x 5-inch, full-color, high-resolution image alone can consume four to six megabytes of memory. Only recently have 40-megabyte disk drives become widely available. And until the arrival of the Macintosh, which today provides up to eight megabytes of RAM, most desktop computers were woefully inadequate in their internal memory; the IBM PC, for example, provided a maximum of only 640 kilobytes.

From the designer's standpoint, one of the most visible improvements in desktop computers is in their ability to display color. The earliest IBM PCs displayed either in monochrome, or used a very rudimentary color scheme providing only 256 colors. The early Macintoshes represented no improvement in this respect, since they were monochrome machines.

Color display has improved gradually over the years, but the real breakthrough has come in the form of 24-bit color technology, which can in theory produce some 16 million colors on the screen. This is more than enough to meet the requirements of the most demanding design professional.

Finally, computers have grown easier to use. Here the Macintosh, with its icons and other graphical on-screen devices, has a clear advantage over most other computers.

Tools for the entire industry

The arrival of affordable, high-quality computer tools for graphic design and other tasks signals a revolution in the graphic arts industry. At the leading edge in this area, the Letraset Studio line of software products provides designers, artists and production personnel with a portfolio of integrated electronic tools for page design, color image creation and enhancement, grayscale images and illustration, display typography, and typeface and logo design. With these tools, graphic arts firms and

departments of all sizes now have a way to generate more ideas quickly and reduce the cost of taking virtually any concept from design to finished product. By simplifying the design process, enhancing creative flexibility, and increasing productivity, the new generation of electronic tools will serve as a catalyst for a new era in the graphic arts.

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