

COMPUTER GRAPHICS

The Right Program

The computer is the tool of choice for most publication design these days. Rapidly changing technology, tight budgets, and the relative ease of operation have turned departmental offices into art shops. But transferring the computer design to the printed page is not without its pitfalls. It is important to understand which applications or programs are best suited for particular tasks. A typical scenario for creating a publication design may include four kinds of programs: a word processing program, an illustrating program, a bitmap manipulation program, and a page-layout or pagination program.

Word processing programs such as Microsoft Word are used to create raw, unformatted text and check spelling and grammar. Text created in a word processing program should not be formatted. Often, word processing programs are used unsuccessfully to design complex multi-color publications with graphics and photos. These programs do not have certain critical prepress features needed to produce plate-ready output for printed publications. On the other hand, they do have superior tools for creating accurate text files that can be imported into a page layout program for formatting. When creating text in a word processing program, avoid centering and justification. Never put a hard return where it seems a sentence should break. Always let text automatically flow from line to line. Generally, use two hard returns between paragraphs. Set tabs in a page-layout program, not a word processing program.

Graphics Programs

Computers can manipulate basically two kinds of graphics: vector or object oriented, and bitmapped or raster. Vector based or object-oriented illustration programs such as Adobe Illustrator are used to create line-art diagrams, logos, and illustrations. Vector graphics are defined mathematically. This type of graphic takes full advantage of the resolution of the output device to which it is printed. A ten-inch circle looks as smooth as a one-inch circle. These graphics are generally saved as encapsulated Postscript (EPS)

files from their native illustration application and then imported into a page-layout program. EPS graphics cannot be changed once they have been imported. Although data-driven graphs and charts can be created in Adobe Illustrator, programs such as Microsoft Excel are often used to create these elements. Postscript fonts are also a type of vector graphics.

Bitmap manipulation programs such as Adobe Photoshop are used to enhance scans of photographs as well as create artwork. Bitmap graphics are comprised of an array of dots or pixels. A scanned photograph is a bitmapped graphic. If the scan is enlarged, the pixels become larger. If the enlargement is too much, the image starts to look rough or jagged. These graphics should generally be saved in tagged image file format (TIFF) files and then imported into a page-layout program.

Page-layout Programs

Page-layout programs such as Adobe InDesign bring all the elements created in the other three program types together into a publication layout for final output. Electronic layout grids can be set up in page-layout programs. A grid defines page size, number of columns, gutter width between columns, and margins to the edge of the page. This helps insure consistency in layout.

All text and graphic elements created in other programs can be imported into an electronic page layout. Text can be selected and formatted. Centering, justification, indents, tabs, kerning, font, size, and leading should all be set in the page-layout program. Scans and graphical elements created in illustration programs can be moved, sized, and rotated after importing.

Color in Publications

There are basically two types of color used in printing: spot color and process color. Spot color is printed on a printing press with pre-mixed inks of practically any color. Ink colors are chosen using standard color guides such as the Pantone Matching System which is one of the most widely used. This process is similar to choosing house paint. A designer looks at the Pantone color swatch book and picks a specific color,

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for example, Pantone 2945 U (the “U” indicates this is what it looks like on uncoated paper). A press operator can then use the same swatch book to determine how to mix the ink using standard Pantone-base inks. A typical two-color publication would be printed with black ink and one Pantone mixed ink.

Process color is also referred to as four color printing. In this kind of printing, all colors are “built” using a combination of tints or percentages of the four process colors: cyan, magenta, yellow, and black.

Color for multi-color publications can be set in page-layout programs. Custom or Pantone colors can be added to a color palette or menu. Text and graphical elements such as rules that are created in the page-layout program can be selected and changed to these colors. For a typical two-color publication, it is important to always use the same two colors when setting element colors. Colors of graphical elements that are imported from other programs must be set in the native application before importing. It is important to define and use colors in these programs that are named exactly (case and space specific) as the colors used to define elements in the page-layout program. For example, “BSU Red” is not the same color as “BSU red”.

Separating Publications It’s always a good idea to test separate your multi-color publications. In the

page-layout program, which spot color overlays to print are specified in the page setup and/or print menu depending on the program. The general idea is to tell the program which colors to output and to output these separations with crop marks and registration marks. All elements defined as a specific color in the page-layout program will print to a laser proof. A two-color publication should produce only two laser proofs per page. Laser separations are used to make plates that print specified colors on a printing press. If the page design is letter size and the maximum page size of the laser printer is letter, the document should be output at a reduction in order to get the crops and registrations.

This publication is only an overview of computer publishing concepts. There is no substitute for training that is specific to the programs of choice. For more information about computer publishing, please contact the Printing Department’s Computer Publishing Service at 285-8420

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