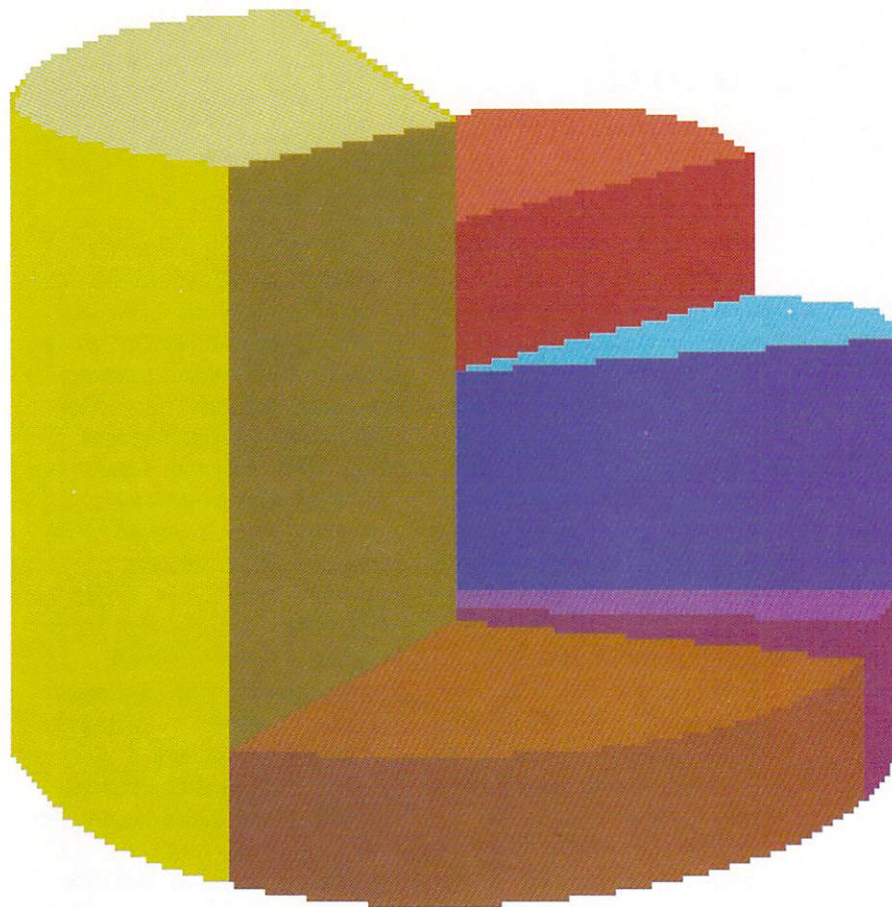# Business Graphics

By Matthew Leeds

Graphics-design software can be used by businesses to create useful, inexpensive charts, graphs and illustrations, enhancing communication and decision making.

Presentation graphics are big business. The production of charts, graphs, overhead transparencies and slide shows has boomed in the last eighteen months. Over $80 million was spent in 1985 on the production of 100 million finished images for use in corporate communications, in-house brochures, training materials and annual reports.

The Intro

Until recently, art for business was produced by hand using straight edges, pens, typesetting machines and all the other paraphernalia of the illustrator. Several years ago, a division of GE came out with a system known as Genegraphics. This was a line of high-end computer graphics hardware specifically for the presentation graphics market. They changed the way corporations created computer graphics. These systems had entry costs in excess of $100,000 and produced finished art with resolutions greater than 2,000 lines.

As time went by, the cost of hardware began to fall, and the power that could be packed into a system went up. Prices went from below $50,000 to under $25,000, and finally PC-based systems hit the $10,000 mark. None of these, however, can approach the $2,000 price of an Amiga.

The Pluses and Minuses

The ability to produce professional-quality graphics on a personal computer frees businesses from the traditional separation between those who need the finished artwork and those who produce it. Communication between an art department and a sales department may not always produce the desired results; unnecessary revisions may take weeks, deadlines may be missed. These problems can be avoided with the use of low-cost PC-based business graphics systems. Chargebacks can become virtually unknown, and concerns about data security can be brought within manageable limits. Managers no longer need to worry that the competition may be presented with a bar chart of sales quotas before their own bosses see it. Many companies do business with the government, and have to follow strict guidelines on control of access to sensitive information; by bringing the production in-house, security checks can be kept at a minimum.

Another important benefit comes through the reduction in costs. The production of display graphics has previously been an expensive proposition: a single bar

chart or pie chart could cost in excess of twenty dollars, 35mm slides could go as high as one hundred dollars. The investment involved in bringing production in-house can often be recouped in less than six months.

Some drawbacks to this trend exist, however. Many of the people who will now suddenly have access to art production equipment will have had no art training. Mauve-on-green bar charts, cluttered overhead transparencies, thirteen different fonts on a single title slide, and other "creative" applications are often the pride and joy of a novice, and it may be hard to dissuade the boss from using his or her first creations at a presentation to the board. Choosing the proper media and medium is only part of the process in designing a presentation. Decisions regarding the type of audience, objectives of the presentation and depth of information to be presented need to be worked out before any production is started.

Another consideration is the fact that once the production of presentation graphics becomes accessible to more people, and the ease of that production becomes understood, the demand for graphics increases dramatically. This could result in certain people finding an increased workload with no concomitant increase in salary. The trade-off of more end-user power is more end-user responsibility.

The Final Presentation

By far the most common type of output being used today in business is the paper hard copy. Interestingly, plotters seem to be used more than printers. The main reason appears to be the higher quality of the finished product. Plotters are also used in the production of overhead transparencies. Drawing directly on acetate sheets, plotters can produce high-quality graphics, but they are not known for their speed. Dot-matrix printers are fine for some limited uses, but their poor resolution of arcs and circles, and problems with custom typefaces has relegated many dot-matrix printers to proof-copy machines.

Laser printers capable of graphics have found a much wider acceptance for paper hard-copy production. The minimum standard seems to be around 300 dots per inch for a full page of printout; this takes a full megabyte of memory in the printer. The only printer currently available with that much memory on board is the Apple LaserWriter. The Hewlett-Packard Laserjet Plus has ½ MB of memory, sufficient for a page of half text and half graphics. Several manufacturers have addressed this problem for the PC environment by producing add-on boards to increase the memory available to the printer. These boards are added to the computer, not the printer, and act as printer drivers. It should be possible to use add-on RAM in the Amiga in the same fashion, allowing access to several different laser printers. By the end of this year, color laser printers should be available.

Another popular form of hard copy is 35mm film. Shooting an image from screen is a crude but effective means of producing a finished image. The use of a film recorder, however, will give you results with much higher resolution. A film recorder is a device that accepts a video output signal from the computer, displays it on a self-contained, high-resolution monochrome monitor, and uses an additive exposure technique to make three consecutive exposures through red, green and blue filters. The internal monitor has a flat screen that eliminates distortion and linear curvature. Most systems can accept several types of video input: color composite, RGB digital and RGB analog. They also have the controls for adjusting the color balance for a particular film emulsion, and can often calculate the correct exposure automatically. Some will accept larger film formats, or instant-developing films. Some recorders are capable of interfacing to the computer through custom software to create a final image with a resolution greater than that of the host computer. Prices for film recorders start at around $1,500.

If the finished image is going to be reproduced in quantity, color separations may be necessary. ImageSet Corp. of Sunnyvale, California can produce color separations, or black-and-white text on a digital typesetter, directly from disk files created on an Amiga.

The Amiga is the first computer in its price range that can output a high-quality signal directly to a video recorder. This has given rise to several new types of business applications. Videotapes of slideshows created on the Amiga can be produced by someone with no special training, and more sophisticated users can add titles, overlays and special effects. Corporate produc-

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◄ tions can be accomplished with lower costs and shorter turnaround times than ever before. The VCR has become another device for producing hard copy, for moving images or sequential displays of stills.

The Means of Production

Two types of software exist for the production of business graphics: paint programs and drawing programs. Paint programs address the screen pixel by pixel, while drawing programs create objects and place them on the screen. Once you have drawn an object with a drawing program, you can pick it up, move it around, save and reuse it. Paint programs allow you to create objects also, but once they have been placed on a screen, they become part of the entire screen pixel map and are therefore no longer discrete objects. You can save a paint program object before you use it; however, once it is placed on a screen, it loses its separate identity. Paint programs are usually faster to work with in the sense that you can draw on the screen easier than creating each object separately, then switch to a separate edit mode and place them in their places. Some programs combine features of each type. Generally, paint programs are preferred for full-screen hand-drawn images, and drawing programs are more suited for the production of charts and graphs.
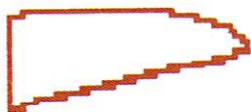
The Illustrated Examples

An excellent example of a paint program is Deluxe Paint from Electronic Arts. It has just about all of the features you could want in a paint program, including the ability to draw lines and geometric shapes, a large color palette, full support of the Amiga's system fonts, a magnify feature, custom brush creation, fills, grids and many other useful features. Its user interface is one of the best I have seen, allowing command selection by keyboard, mouse or any combination thereof. This allows the experienced user to work much faster than with the mouse alone. Electronic Arts will be releasing an accessory disk for Deluxe Paint with clip art, full-screen paintings and several utilities. A program to convert DPaint files to three bit-plane files, for use in other programs (Deluxe Print, etc.), and a slide show program for the viewing and displaying of files created with DPaint will also be released. The slide show program will be transferrable to any disk, allowing for the creation of stand-alone display disks.

Impact from Aegis Development is a structured drawing program, designed specifically for the production of business graphics. It runs in the 640×200 mode, and is an object-oriented program. It is used to create three types of images: Slides, which can be thought of as pictures; Frames, which are text screens; and Icons, which are symbols (not to be confused with the icons in Workbench). Slides are created by inputting data for a chart, then selecting what type of chart you wish to create. Pie, bubble, line and scatter charts are all menu items selectable with the mouse. Just select the type and Impact will do all of the calculations and create the chart automatically. An edit mode gives you access to some features found in a paint program: freehand drawing, lines, arcs, cut and paste, etc. The frame mode is used for the creation of text. All of the Amiga system fonts are supported, as well as what Aegis calls stroke fonts.

Stroke fonts are vector-described fonts, as opposed to the Amiga's bit-mapped fonts. By describing a font as a set of vectors, it is much easier to scale text to any size. The frame mode, among other things, allows you to define an area, then enter text using a mini word processor and tell the program to fit the text to the area allowed—a very powerful feature. Fonts can be displayed as normal, outlined, drop shadowed or multicolored. The icon mode is used to create 32-pixel square symbols for use in either of the other two modes. These objects can be picked up and placed anywhere, or can be used as symbols in bar charts, stacked one on top of the other.

All modes work interactively, and finished slides can be resized and combined, with up to four in a single new slide. Also included is a powerful slide-show program. Once all of your slides are finished, the program will call a directory of your slide files and display their file names. You select the order in which you want them to be displayed, how they are to appear, how long each will be displayed and how they will disappear. Options include several different wipes: spiral, pop in, random and fade. The wipe in and out times can also be controlled. Since Aegis does not copy protect their software, you can create stand-alone slide shows.

Impact will also accept standard DIF files. This will allow you, for example, to import data from your spreadsheet program directly to Impact, and therefore greatly ease the creation of charts to support or explain results on the bottom line.

Since Impact stores images as a series of objects, its files are not directly compatible with other paint programs that use standard IFF format for full-screen images. Aegis has included an export option that will convert files to standard IFF format, but there is no way to do the reverse. An IFF file is a bit map, and does not include any information on discrete objects, so there is no way to import picture files from other programs that create bit maps.

The Clincher

The use of graphic-design software can simplify the process of creating useful, inexpensive and yet powerful business graphics. Graphics can make communication clearer and quicker, and improve the decision-making process. Rather than trying to understand and juggle a series of numbers with information about the relationship between separate sets of data, a single and sometimes simple chart or graph can quickly convey the total picture. Business graphics can make business easier. ■