When image matters

Creating images, whether it be for the office newsletter or customer brochures, requires some special tools. Michael Palamountain from Enex TestLab puts you in the picture.

The software available nowadays to create, edit and manipulate images is dazzling. There is software dedicated to just about every facet of production and publishing—from print to the Web, the art of creating and publishing images has become highly specialised, so naturally the tools to do this have also become specialised.

There are applications available on the market from a range of vendors. Most can usually be purchased separately, but more commonly vendors are packaging related software together into suites. These will often contain tools angled at one publishing medium or another, and so the selection you might make will depend on what sorts of images you were working with, how you want to create or manipulate them and to where you want to publish them.

To bring some scope to this review we have assumed the position of a medium-sized business that, while outsourcing the bulk of its design and publishing operation, wants a software package that will provide a solid in-house capability for newsletters, reports, signage, and drafting their ideas for outsourcing.

In most image-related application suites the two core products will usually be one vector-orientated application and one bitmap-orientated one. These two programs form what would usually be the primary tools where most of the initial image design and editing is carried out.

What follows is a look at these key applications from some popular vendors such as Adobe, Corel, Macromedia and other open-source options. We test the capability of each to perform standard bitmap and vector image creation and editing that we feel represents the initial foray a company would make towards image creation products.

HOW WE TESTED

In order to try out the features and usability of these applications we carried out two similar operations in each. The first test was to produce a circle and fill it with a chosen colour—fairly simple.

The second test was to produce a seven-pointed star—using auto-shapes if possible—and fill the star with a graduated rainbow colour fill with a perpendicular transparency gradient.

This second task will employ both multi-stop gradients (ie, a gradient where colour and/or transparency changes from one value to another several times across a specified field eg, a gradual change from blue to red, then red to purple, then purple to black) and masking capability (a method of blocking part of an image

so as to protect it from change). Any decent graphics application will have these features, so we were concerned with how easy it would be to achieve the result. We also looked at the range of filters and other effects available for manipulating images.

ADOBE CREATIVE SUITE 2

Adobe currently offers a bundle of software called Creative Suite. This package features its two flagship products—Photoshop (for bitmaps) and Illustrator (for vectors).

Both are strictly graphics applications but the suite also includes tools geared more towards presenting your work, such as GoLive for Web publishing, InDesign for desktop publishing and Acrobat for PDF creation. Packed with features, this is one image creation suite with the lot for the serious professional user. Creative Suite is available for both Windows and Mac OS operating systems.

ILLUSTRATOR

Adobe's vector drawing application, Illustrator, contains 21 filters in four categories (colours, create, distort and stylise) as well as 69 other effects including 3D, path-finding and distortion. There does seem to be some overlap between filters and effects, and some Photoshop effects are also available in addition to 15 transparency filters.

Illustrator: star with graduated colour

The masking feature allows for extremely complex merging of image objects, including shaped transparency masks. At times, our tests showed that the package's immense flexibility came at the expense of the intuitiveness of the method.

Upon opening a new document it gives you the opportunity to choose a title and colour mode, as well as the page size and orientation. For the first test we were able to use the circle tool—dragging on the canvas sized the circle. We could then select from features such as transparency, line style, colour and thickness, and filling colour from the tool bar which appears whenever the circle object is

Product	Adobe Creative Suite 2 Premium
Vendor	Adobe
Phone	1300 550 205
Web	www.adobe.com.au
Warrranty	Complimentary phone support for installation and product defects; free access to online forums and FAQs, updates and patches.
Price	Full product: $1999 Upgrade from Photoshop: $1499 Upgrade from CS1: $999

Interoperability
Good range of major file formats.

Futureproofing
Provides for standard graphics plus good expansion into Web publishing.

ROI
Not overpriced but overkill for graphic design.

Service
Typical software support channels.

Rating ★★★½

Product	CorelDRAW Graphics Suite X3
Vendor	Corel
Phone	1800 658 850
Web	www.corel.com
Warrranty	One complimentary phone call, online support (e-mail and user groups), knowledgebase software, updates and patches.
Price	Full product: $749 Upgrade: $349 Academic: $189

Interoperability
Excellent range of formats.

Futureproofing
All the features needed for intricate graphic construction.

ROI
The right easy-to-use tools at a fair price.

Service
Typical software support channels.

Rating ★★★★

Product	FreeHand MX and Fireworks 8
Vendor	Adobe (formerly Macromedia)
Phone	1300 550 205
Web	www.adobe.com.au
Warrranty	Free online support (e-mail and knowledgebase) and forums.
Price	Freehand full: $605 Upgrade: $150 Studio 8 full: $1515 Upgrade: $605 Fireworks as separate full: $455 Upgrade: $230

Interoperability
Excellent range of formats.

Futureproofing
Good features for graphics and some Web development.

ROI
Reasonable price and features, overkill if full Studio suite.

Service
Typical software support channels.

Rating ★★★½

selected—all of the tasks in this test were easy to complete.

The next test took a little more learning time (with a assistance from the help files). To create our seven-pointed star Illustrator includes a dedicated star tool in its auto-shapes list, with additional variables such as the number of points and the inner and outer radii. Manipulation of multiple-stop colour and transparency gradients was simple and we were able to complete the process using a single mask.

An interesting component of Illustrator is Live Trace which can be used to convert bitmapped images into vector images. There are various options for this function which deal with the level of detail required and edge-detection methods. You will need to experiment a little to get the result you want but it can work very well. Illustrator is capable of exporting to a variety of file formats including AutoCAD, SVG and animated Flash files.

PHOTOSHOP

Obviously Photoshop is designed for photo manipulation but you can also create new bitmaps from scratch.

You are actually able to create and manipu-

TEST BENCH

Interoperability
What is the range of formats handled?

Futureproofing
What is the range of features and functions?

ROI
Cost versus the usability and features included.

Service
What sort of basic service options are included?

Product	GIMP 2.2
Vendor	GIMP
Phone	N/A
Web	www.gimp.org
Warrranty	Online forums
Price	Free (open source)

Interoperability ★★★½
Good range of major bitmap formats.

Futureproofing
A developing product, a bit "rough" and bitmaps only.

ROI ★½
Great price (free), but further product development is needed.

Service ½
Web forums.

Rating ★★½

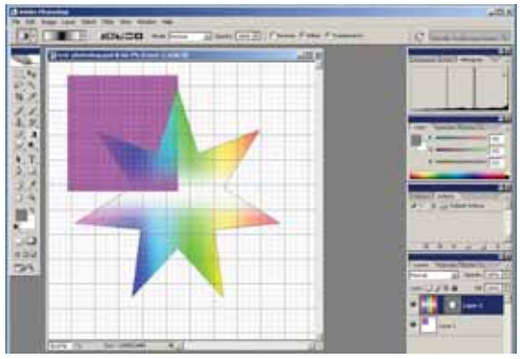
late a circle as a vector or a bitmap. Selecting the ellipse tool and dragging on the canvas creates the circle but the way you fill it with colour and move it about will depend on whether you've designated it a vector or a bitmap. We had to create a whole new layer in order to produce a new vector circle after the bitmap one. This may be lack of experience with the product, or something much more intuitive.

In a similar way, the star test took quite a while to learn the necessary steps. We eventually achieved a result by using one shape mask applied to a layer containing both the transparency gradient and the colour gradient. Creating a star was achieved by selecting the polygon tool—a star/polygon toggle was one of its options. Both these tasks were far easier to achieve in Illustrator, but to be fair these are not the core functions for a photo-editing application.

The colour and texture filters for photo manipulation do a very good job; we got some very interesting results applying these to images. Photoshop includes a wide range of highly customisable brush tips including some animated ones. It has about a hundred filters for adjusting colour and texture and simulating various art media.

You can save files in about two dozen formats including PNG for Web graphics. Tools may change their apparent behaviour for a given layer if a mask is present; masks are intended to hide or protect portions of an image from the editing process. Photoshop provides for both vector and bitmap masking. Colour and transparency gradient are possible but Illustrator was simpler to learn in this regard.

Summary. It is difficult to say anything negative about Adobe Creative suite. It is a very complete package—able to create, edit and deploy a range of image types. It is an excellent tool for top end graphic designers. Being such a complete package it is more expensive than other suites on the market—only fair for what you are getting. Smaller offices, particularly where the intent is not to produce magnificent Web content or sales brochures, may find that this all a bit much and part of determining value for money is knowing how much you really need. Undoubtedly this is the most powerful suite here and it is broad ranging in its tools but a working level of familiarity with the product will take some time—and time comes at a cost. How quickly do you need staff to start being productive after software deployment?

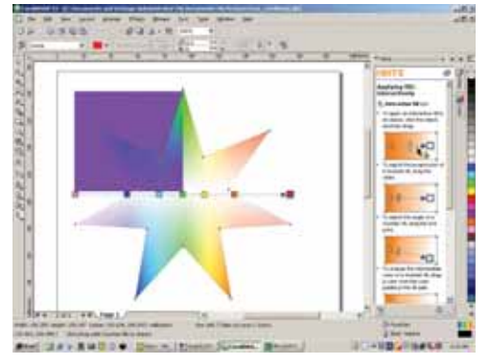


Photoshop: star with graduated colour

COREL

CorelDRAW Graphics suite X3 (which stands for version 13) contains CorelDRAW, Corel Photo-Paint, SB Profiler (for associated documents with users), Bitstream Font Navigator, Corel Capture (for screen captures) and Duplexing Wizard (for organising double-sided print runs).

Corel also sells Paint Shop Pro (formerly by Jasc Software) and Painter as separate packages; Painter is intended to simulate the use of artistic media during the actual process of creating the image. Painter can be mouse driven in



CorelDraw: star with graduated colour

Product	Inkscape 0.43
Vendor	Inkscape
Phone	N/A
Web	www.inkscape.org
Warrranty	Online forums
Price	Free (open source)

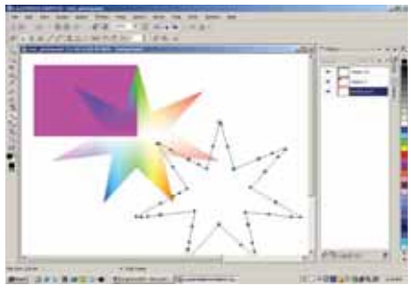
Interoperability ★★★
Exports mainly to "alternative" products

Futureproofing
A developing product, masking is needed and vectors only.

ROI ★½
Great price (free) but further product development is needed.

Service ½
Web forums.

Rating ★★½



Corel Photo-paint: star with graduated colour

theory but a graphics tablet would probably do more justice to this sort of software.

CORELDRAW

One of the first things we noticed when exploring this vector drawing application was the hints area on what Corel calls a "Docker", placed to the right of the drawing space. This is automatically updated with context-sensitive help whenever you choose a new tool to work with—very handy for new users. The Docker also carries other tool dialogs on separate tabs as required.

Transparencies can be applied with solid, gradient or pattern/bitmap formatting and CorelDRAW is adept at converting between bitmap and vector images in either direction. The bitmap-to-vector component, called PowerTRACE, is very effective. The application has a wide range of filters and artistic effects available.

We were surprised by the way colours are displayed in Corel as there are separate colour settings, optimised for either print or Web deployment of images—the default is for print optimisation.

For our first test we found drawing a circle was simple but a little different to many of the other programs—holding the shift key causes the drag manoeuvre to begin at the centre rather than the corner, while the control key enforces a circle. Shortcuts to the fill and line tools for basic colour and line formatting can be found at the lower right corner of the screen.

Like Illustrator, CorelDRAW has a dedicated star tool that lets you select the number of points you want. Drawing our star involved selecting the star tool, dragging on the canvas to create it, and then selecting the number of points on the upper tool bar. Creating the colour gradient was rather different—having used the gradient tool to form a basic two-colour gradient we couldn't find a way to add extra stops. We found the answer in the hints: just drag and drop new colours from the palette directly onto the gradient line shown on the canvas. These can then be dragged about and clicked to bring up a colour palette dialog.

The interactive transparency tool allowed the transparency gradient to be applied in exactly the same way as the colour gradient and there was no need to create a separate mask object to do so. The methods were also easy to discover.

PHOTO-PAINT

Photo-Paint supports animation and Visual Basic macro scripting. Images can be adjusted and preserved as multiple frames and stored as MOV files or animated GIFs. There is a specific tool for red-eye removal in photos. CorelDRAW's full range of filters and artistic effects are also available here for bitmap manipulation; these include blurs, colour filters, warps, and media including drawing, painting, stained-glass and needle-point.

The user interface for Photo-Paint is pleasingly close to that of CorelDRAW in terms of appearances and operation. It can preserve drawing elements as separate layer objects which provides extra editing flexibility. There are naturally some variations associated with the inherent differences between vector and bitmap graphics.

Drawing a circle is relatively simple but be sure that your object is selected before choosing to apply a flood fill or the entire region will be coloured. Size and positioning are controlled the same as in CorelDRAW.

Creating the star was harder than in CorelDRAW, mostly because we needed to learn and use masking. First we had to outline the star by hand with the path tool since there was no suitable auto-shape. Then we needed to stroke the path and convert it to a new object that we could paint. Having done this, we could apply the colour and transparency gradients just as we did in CorelDRAW.

Summary. Corel does not contain the range of applications found in Adobe Creative Suite but it is a very effective "pure" graphics suite. It offers powerful tools for creating and editing both vector and bitmap graphics. The software is well integrated and very user friendly and helpful hints are immediately on hand for most features. Personal experience proves that even those who are less than expert with drawing software can quickly gain a working knowledge of this product suite. Macintosh users

PNG, SVG to be standard

The World Wide Web consortium states it would like to see Portable Network Graphics (PNG) and Scalable Vector Graphics (SVG) become the standards file formats for Web graphics.

Currently, Web graphics are typically formatted as JPEG, GIF or Flash. PNG is currently well supported by Web browsers and image creation software—you have probably seen it in use on the Web already.

SVG, an extension of XML, is still catching up. Most current browsers do not support SVG, although there is a flurry of activity to implement the W3C standards for this format.

Adobe provides a browser plug-in that allows SVG images to be displayed in Internet Explorer, Netscape and Opera.

A second issue slowing the use of SVG graphics is the lack of software for developing the graphics themselves. Various vector drawing applications can export to SVG format but there is little support for animating these images. The average graphic designer will most likely not bother editing their creation as a text file in order to add in the animation.

Despite these problems it should not be too long before SVG becomes a common feature on the Web due to the openness of its implementation and compliance with XML standards. The format can be edited as graphics, XML or text and it can be compressed into a size comparable to that of Flash.

Glossary

Bezier tool: A tool for the creation of Bezier curves—smooth curves which can be used to define complex shapes.

Binary logic operators: These mathematical operators can be applied to image components to determine how their colours are combined when being merged.

The best way to understand their usage is to experiment with them. Colour pixels can be combined using binary mathematical equations involving operators such as AND, OR, XOR, Divide and Multiply.

Layer: One or more components grouped together so they can be viewed and manipulated as a whole, independently of other layers. Layers may be used in preparing frames for animated images or for separating background and foreground image components.

Masking: A method of blocking part of an image to protect it from changes such as using a stencil to guide the application of paint.

Multi-stop gradient: A gradient where colour and or transparency changes from one value to another several times across a specified field. For example, a gradual change from blue to red, then red to purple, then purple to black.

Shaped transparency mask: A mask that specifies the shape of a transparent area on an image component.

Transparency: The degree to which underlying image components can be seen through another component.

Transparency filter: A type of mask that specifies how transparency levels vary across an image component.

should beware, however, as after version 12 Corel stopped supporting Mac OS because its research found that over 95 percent of its users were running it on Windows.

FREEWARE

There is little on offer in terms of a total open-source graphics suite. Instead we looked at independent programs; Inkscape which is a vector graphics program, and the GIMP which is a bitmap graphics program.

While these programs have not been developed together the range of file formats available to each allows for collaboration between the two.

INKSCAPE 0.43

Inkscape is an open-source vector graphics application. Compiled versions are available for Windows, Mac OS X, and Linux. The latest stable version is 0.43 but there are daily builds available for those who want to see the latest developments.

Drawing whole circles by dragging is easy. There are four auto-shape tools on the left hand toolbar: rectangle, ellipse, star/polygon and spiral. A circle or ellipse can readily be converted to a chord or segment. Colour selection is easy and flexible from the stroke and fill dialog.

Creating the basic shape star shape was simple with the star/polygon tool. Multiple-stop colour gradients were no problem either. The trouble came when we tried to apply the transparency mask as you can see in this quote from Inkscape's help file:

"The XML editor allows you to change almost all aspects of the document without using an external text editor. Also, Inkscape usually supports more SVG features than are accessible from the GUI. For example, we now support displaying masks and clipping paths, even though there's no GUI for creating or modifying them. The XML editor is one way to get access to these features (if you know Scalable Vector Graphics)."

Perhaps we should be grateful that the XML editor was included but we can't imagine many users being that familiar with SVG scripts. Besides which, even after figuring out how to convert our grey-scale image into a transparency mask using the underlying SVG code, it proved much easier to do with an ordinary text editor—hardly a productive solution.

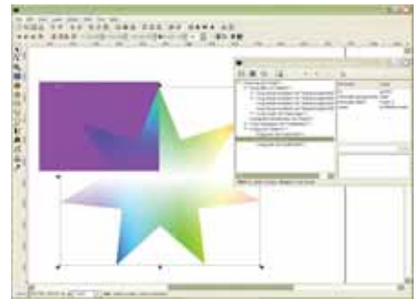
Like Corel, holding down the shift key while drawing a circle toggles the initial drag point from the corner to the centre of the object. The control key ensures the x/y ratio conforms to whole numbers.

The stroke and fill tool dialog which determines an object's colour, fill, and line style, is not obviously recognisable. We needed to use the tool tips to locate it (found on the upper toolbar beside a much more obviously marked text tool).

Inkscape has excellent shape and Bezier tools and a good vectored freehand tool. It supports multiple-stop gradient fills with variable transparency. You can also import and export bitmap images. Objects can be combined using binary logic operators such as "and", "or" and "divide". There is a great little polygon/star tool that allows warping into exotic floral designs.

Inkscape's native format is SVG (scalable vector graphics) and it uses PNG for bitmaps. SVG is XML based and the underlying code can be directly edited with Inkscape's XML editor. There is a simple bitmap-to-vector trace function, but this is black and white with basic fill or trace options.

Inkscape is a reasonably powerful package although it can be a little rough around the edges at times and lacks essential features. It is still an immature product which is developed at the whim of keen volunteers. It will no doubt receive better masking support in the future.



Inskcape: star with graduated colour

Product	Adobe Creative Suite 2 Premium	CorelDRAW Graphics Suite X3	FreeHand MX and Fireworks 8 (part of Studio 8)
Vendor	Adobe	Corel	Adobe (formerly Macromedia)
Phone	1300 550 205	1800 658 850	1300 550 205
Web	www.adobe.com.au	www.corel.com	www.adobe.com.au
Warranty	Complimentary phone support for installation and product defects; free access to online forums and FAQs and updates and patches.	One complimentary phone call, unlimited online support (incl e-mail and user groups) and knowlegdebase software updates and patches.	Free online support via e-mail or through knowledgebase and forums.
Price	Full product: $1999 Upgrade from Photoshop: $1499 Upgrade from CS1: $999	Full: $749 Upgrade: $349 Academic: $189	Freehand full: $605 Upgrade: $150 Studio 8 full: $1515 Upgrade: $605 Fireworks as separate full: $455 Upgrade: $230
Vector creation	Adobe Illustrator CS2	CorelDraw	FreeHand
Bitmap creation	Adobe Photoshop CS2	Corel Photo-Paint	Fireworks
Photo editing	Adobe Photoshop CS2	Corel Photo-Paint	FreeHand—limited
Animation	Adobe Illustrator CS2	Corel Photo-Paint	Fireworks/FreeHand
PDF creation	Adobe Acrobat 7.0 Professional	Export to PDF	FreeHand export to PDF
Web design	Adobe GoLive CS2	HTML, SWF export	Flash, Dreamweaver
Bitmap to vector	Live Trace component	PowerTRACE component	Limited tracing tool
Other applications	Adobe Bridge, Version Cue and Adobe Stock Photos	Corel CAPTURE and tools for organising fonts and duplex printing	Studio 8 includes Dreamweaver, Flash, Contribute and Flashpaper
File formats (relating mainly to graphics)	Save/Export: PDF, EPS, JPG, PNG, SVG, Illustrator, Photoshop, PICT, PCX, Pixar, Targa, PBM, GIF, SWF, AutoCAD, PSD, TIF, WMF, RAW, SCI, DCS Import: includes, TIF, GIF, JPG, BMP, EPS, WMF, PCX, PNG, DCS, PDF, Filmstrip, RAW, Photoshop, illustrator, SCI, TGA	Save/Export: Corel (various), BMP, CPT, PPF, TGA, GIF, GIF anim, Illustrator, SVG, JPG, JP2, TIF, FPX, PSD, PSP, EPS, WMF, AutoCAD Publish to: PDF, HTML, SWF Import: Corel (various), PSP, PPF, RIFF, BMP, PCX, TGA, GIF, JPG, JP2, TIF, FPX, PP4, MAC, CAL, PNG, PostScript, AutoCAD, Illustrator, FMV, Win metafiles, AVI, SVG	Save/Export: SWF, EPS, PSD, Illustrator, Freehand, PDF, DCS2, RTF, ASCII, TIFF, GIF, JPEG, PNG, Targa, BMP, WMF, EMF, Photoshop, PICT Import: SWF, EPS, CorelDRAW, PSP, PDF, Micrografix, Freehand, DCS, DXF, RTF, ASCII, TIFF, GIF (+ anim.), JPEG, PNG, TGA, BMP, WMF, EMF,CGM, PLT, PICT, DXF, Illustrator
Platforms	Windows 2000 SP4 or XP SP1/2; MacOSX v10.3 or later and JRE	Windows 2000, Windows XP or Windows Tablet PC Edition	Windows 2000 or XP, or Mac OSX 10.3
Hardware requirements	Pentium III or Mac G3; 384MB RAM minimum (1GB recommended); 1-3 GB HD space; 16 bit video card; 1024 x 768, 24 bit color screen settings recommended; PScript level 2 or 3 req for PS printers	Pentium II, 200 MHz or greater; 250 MB HD space; 1024 x 768 monitor res; CD-ROM; mouse or tablet	Pentium III 800MHz or Mac G3 600MHz; 256MB RAM (1GB recommended); 1024 x 768, 16-bit display (32-bit recommended); 1.8GB HD space for Windows and 1.2GB HD space for Mac.

	GIMP 2.2	Inkscape 0.43
	GIMP	Inkscape
	N/A	N/A
	www.gimp.org	www.inkscape.org
	Online forums	Online forums
	Free (open source)	Free (open source)
	No	Yes
	Yes	No
	Yes	No
	GAP add-on	No
	No	No
	No	No
	Very limited B/W	No
	No	No
	Save/Export: Gimp formats, PNG, PIX, FLIC, DCM, EPS, PS, FIT, GIF, JPG, CEL, ICO, PGM, PPM, SGI, TGA, TIF, BMP, RAS Import: Gimp, JPG, CEL, ICO, WMF, PSP, PDF, PSD, PNG, PNM, PS, SVG, SGI, RAS, TGA, TIF, BMP, PCX, XBM, XPM	Save/Export: LaTeX, PNG, POV, PS, EPS, SVG, InkscapeSVG; Import: InkscapeSVG, SVG, ANI, GIF, BMP, JPG, TIF, ICO, PCX, PNG, RAS, TGA, WBMP, XBM, XPM
	Windows NT/2K/XP, MacOSX, UNIX/Linux (or can be compiled from source code); GTK+ 2.4	Windows, MacOSX, UNIX/Linux (or can be compiled from source code); GTK+ 2.4
	128MB RAM	128MB RAM

Eye candy or eye brussel sprouts?

Be careful where you stand. Politics, religion and computers are guaranteed to provoke a reaction, and discussing the virtues of designing on PCs versus Macs, well that demands artillery.

There is, of course, by no means a definitive answer. It has long been debated on any number of IT media Web sites and design sites. For every argument that promotes one there is a good reason for the other. PCs tend to be described as better priced, more compatible, and with better driver support but stability is often questioned and the "cool" factor just doesn't exist. Macs are expensive and less compatible but offer advantages in font and colour management.

Most designers, it would seem, do tend to use Apple computers—which may be argument enough that there is some advantage to the machines if you are in this industry but there is a growing percentage who also work on PC or both.

Gerard Searchfield, creative director at a marketing company, has worked with a range of Adobe and Macromedia tools on both platforms throughout his career. "I made the switch from 'eye candy' to 'eye brussel sprouts' when I started freelancing because it was cheaper to use a PC. I could buy the components separately and build a faster, more powerful computer for the same price as a low-end G3 at the time."

Here at *T&B*, mention the word Macintosh to our art director and he will glare in disgust and start mumbling under his breath about never going back to the cursed device. But that may have just been a bad experience. Other designers around the office polish their orb-like Macs with pride.

Chris Von Sanden, of design business Quality Ensured Data, has used both PCs and Macs during his 14-year design career. He still attributes a Macintosh advantage chiefly due to its ability to capitalise on postscript language which has evolved on the Apple machines.

"If you're talking about graphic design, postscript is the most important thing. Adobe products print via postscript, so using a Mac ensures that what you are designing actually comes out of the printer," he says.

When you're whole career is based around aesthetics, an Apple's good looks will be a factor in your choice, but Adobe's design tools largely evolved on Macs—Apple is clearly indoctrinated in the industry.

The arguments will invariably go on and while many see the difference between the two factions narrowing, design, whether through habit, passion, or otherwise, does seem to be the jewel of Apple's eye.

—Mark Wheeler

THE GIMP 2.2

The GNU Image Manipulation Program (GIMP) is purely intended for working with bitmapped images.

To create a filled circle we used the "select elliptical region" tool and dragged on the canvas to the desired size. Holding the shift key constrained the ellipse to a circle, we chose a fill colour, then clicked on the selected circle region. The second test immediately showed up a feature lacking from this application: autoshapes. We had to draw the star with the path tool and arrange the points by eye. Once a path is drawn, its outline can be stroked or filled. It was rather fiddly to define the multi-stop gradients and the methodology was not immediately evident. Applying the perpendicular transparency gradient proved relatively simple in the end; unfortunately we had to look up how on an independent Web site. GIMP is equipped to handle layers, graduated transparencies, perspective, Bezier curves and rotation. Gradient fills come in a variety of forms including, linear, radial, spiral, and square.

Microsoft Acrylic

Microsoft's new foray into design and illustration, Acrylic is turning a few heads.

Released in Beta form since June 2005, it represents a relatively controversial approach to design software. Unlike traditional tools such as Adobe's Illustrator or Photoshop, which essentially work exclusively in vector or bitmap images, Acrylic endeavours to pull together qualities from both—the accuracy of vectors and the photographic realism of bitmaps.

Having evolved out of Creature House's Expression 3.0, the industry seems to be cautious, but curious about the rise of the new tool. Acrylic has taken some bold steps, including accepting Photoshop plug-ins and interfaces with file formats from most of the main packages, including Adobe PDF files.

While not yet considered a contender to the likes of Adobe or the other packages, and according to some even freeware such as the GIMP, many are prepared to wait and see what surprises the full release has in store.

—Mark Wheeler

Bits or vectors?

Bitmaps and vectors are the two most common ways of digitally storing an image. Bitmaps describe the colour of each individual pixel in an image while vectors are mathematical descriptions of the lines and curves and the colour pattern used to fill in defined areas.

Thus, to draw a circle 100 pixels across, a bitmap must store 10,000 individual pixels whereas a vector image only needs to store enough information to say "draw a circle 100 pixels across here". On the other hand, if we have image containing 20,000 overlapping circles within the same 100-pixel wide area, a bitmap would require the same amount of storage space, whereas the new vector image would store the radii (and colours) of each circle. In the first case, the vector file will be much smaller but in the second case the vector file is likely to be larger.

The bitmap method of image storage means that scaling an image down leads to loss of information and scaling up leads to jagged edges as the square pixels become visible.

By contrast, a vector graphic can be scaled up or down almost infinitely and still retain the same shape. Of course, the complexity of vector shapes and effectiveness of file compression will blur such simple comparisons.

How do you choose whether to use vectors or bitmaps for a specific application? It depends on how the image needs to look and to a lesser extent on the size of it.

As a general rule a bitmap file will be larger than a vector image file (although this may not be case for very small images). Bitmap images can handle great detail, so photos are almost always stored in this way. They are typically far too complex to describe mathematically with vectors.

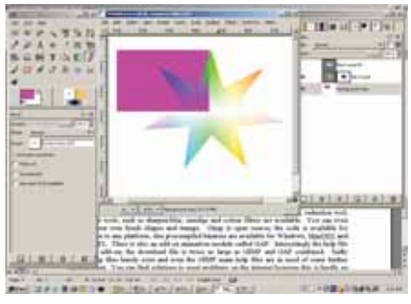
Bitmaps are also the predominant form of image on the Web, although this is beginning to change with the current usage of Flash and the development of scalable vector graphic format.

Vector graphics have a distinctive look due to the need to describe each component with equations. Thus they are very good for diagrams, computer-aided design, cartoon images and graphic design. Conversion of vector images into bitmaps is a fairly simple process. The reverse process, bitmap to vector, is quite difficult, though there are conversion tools available.

While photograph manipulation does not include a specific red-eye reduction tool, many other tools, such as sharpen/blur, smudge and colour filters are available. You can even develop your own brush shapes and stamps.

GIMP is open source; the code is available for compilation to any platform and pre-compiled binaries are available for Windows, Mac OS X and Linux. There is also an add-on animation module called GAP.

Interestingly, the help file is another add-on; the download file is twice as large as GIMP and GAP combined. Sadly GAP's help files barely exist and even the GIMP main help files are in need of some further development. You can find solutions to most problems on the Internet but this is hardly an ideal solution.



The GIMP: star with graduated colour

Summary. There are certain issues associated with open-source products. On the downside the help files are rather poor and there is no option for direct vendor support. Inkscape in particular is not fully developed—it can display certain features for which there is no practical tool provided to create that same feature. On the other hand there is no initial monetary outlay for the product itself and there are plenty of forums and other Web sites that offer assistance for both of the products. Furthermore, developers may be interested in the possibility of creating new tools and features to add to these programs.

This could be a solution for users on a very tight budget or those interested in developing new tools. Lack of a full tool set could be very limiting to those trying to create complex graphics. While programmers might not mind playing with XML in order to get the most out of Inkscape this is an inadequate solution for the average graphic designer.

MACROMEDIA

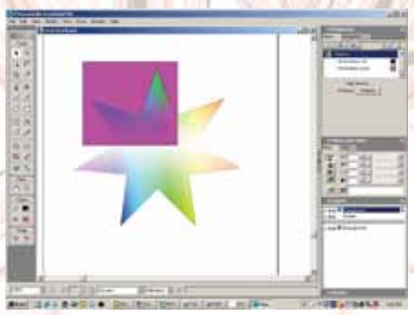
Macromedia's Studio 8 suite contains a range of Web-oriented products including Fireworks, a bitmap graphics application. Macromedia also sells vector-design tool FreeHand, but this is included in Studio 8. Since December 2005, Macromedia is a subsidiary of Adobe, but the new owner says it plans to continue running both software lines. The software comes in both Windows and Mac OS versions.

FREEHAND

As expected, creating a circle for the first test was a breeze. We selected the circle tool and dragged the mouse across the canvas. From there we found the object properties laid out in tree format on the right-hand side of the screen. These properties can all be edited by changing the numbers.

Freehand passed the second test with flying colours. A graded transparency mask is applied by selecting "transparency mask" from the effects menu in the object properties area and then selecting the greyscale mask which you have prepared for the purpose. Multi-stop gradient handling was as convenient as any other high-end application; you orient the gradient by dragging on the image.

The menu tree lets you easily manipulate multiple-stop colour and transparency gradients. There are six different gradient styles: linear, cone, logarithmic, radial, rectangle and contour. Certain operations, such as applying perspective, can prevent editing of existing fill



Freehand: star with graduated colour

Fireworks: star with graduated colour

properties. You would need to apply a new fill in order to adjust it.

It is worth considering with any package how operation order varies the final effect. While there may be a trace tool for converting from bitmap to vector, it doesn't have all the options one finds in CorelDRAW or Adobe Illustrator.

FIREWORKS

Fireworks' user interface is arranged differently to that of Freehand but this might be a good thing: it reminds the user that procedures are often rather different to those required to achieve similar results using vector graphics.

Creating a circle involves selecting circle from the auto-shapes and dragging on the canvas. Object properties are spread across the bottom of the screen where it is easy to select, line, and fill attributes. There are a dozen gradient styles and a few dozen fill bitmaps.

Fireworks passed the second test well once we achieved a little familiarity with the application. The transparency gradient is applied as a mask object attached to our rainbow star object. Selecting the object or mask from the layers listing on the right provided us with access to all the item's attributes.

Gradient manipulation was no problem. Again the test image was harder to produce as a bitmap than as a vector but it was easier than with Adobe Photoshop.

In most cases the screen layouts for Freehand and Fireworks are very similar, making life much simpler for users who regularly switch between these applications.

Summary. The features table shows that Fireworks is purchased separately from Studio 8 but even thus, purchasing Fireworks and Freehand is a more expensive option than the equivalents from Corel. It is certainly worth considering for Macintosh users who don't want to buy a full product suite, since Corel does not support that platform.

Freehand in particular was easy to learn, though Fireworks caused some frustration initially. User interfaces for the two programs are nicely consistent with each other and fairly easy to use. Overall usability was better than that of Adobe's offerings, but fell behind Corel's constant supply of hints.

FINAL WORDS

To some extent the more features a product has the more time is required to get staff up to speed. Obviously software developers can, and do, work to make their products as intuitive as possible. Integrated product suites will naturally have a similar look and feel to all of the included applications—this is a bonus that cannot be overestimated.

Most vendors use similar icon images and tool operations, which makes it easier for users to cross over between packages, but being familiar with one product won't necessarily make you an instant expert with another.

Take the time to play around with any new product. If you are new to graphics packages, be prepared for a steep learning curve. Tasks are generally achieved quite simply, once you know how. ■

SCENARIO

This medium-sized business is seeking a graphics application or package to facilitate the production of graphics for internal office needs. It would be required for illustrating in-house newsletters, reports, signage and drafting ideas for externally used design work. It need not be a total Web/paper publishing solution.

Concerns: The key issue for the client is usability and broad functionality, with price being a secondary consideration.

EDITORÊS CHOICE

CorelDRAW graphics suite

TECHNOLOGY & BUSINESS 1 EDITORS CHOICE AS TESTED BY KMIT LABS

All these products have some excellent features. Adobe Creative Suite would well serve a major graphic design studio with its full featured graphics and publishing options. Unfortunately, it could be just a little easier to use. Freehand and Fireworks, now also under the Adobe banner, make a less expensive alternative. They also come with some handy Web publishing options if you buy Fireworks as part of the Studio 8 suite.

On the downside, details such as the bitmap tracer fall behind the equivalent functions in CorelDRAW and Adobe Creative Suite. CorelDRAW Graphics Suite X3 stands out as being easy to use with all the standard features you are likely to need for office graphic design. We rarely had difficulty with any on the functions and helpful hints were generally close at hand.

The CorelDRAW suite makes no claim to be a full-blown Web publishing package but it can output to HTML, Flash and animated GIF as well as the modern Web graphics formats of PNG and SVG.