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Dig

P R E S E



igital Workflow

N T A N D F U T U R E

Seven years ago, the printing universe as we knew it began to implode. The centre of the universe shifted — and now you're sitting on it.

BY DAN BRILL

ABOUT SIX YEARS AGO, IN THE EARLY DAYS OF GRAPHIC EXCHANGE, in a *Publisher's Notes* column entitled "Servicing the concept-to-print market will be the challenge for the 90's", I wrote, "Times change. Technology changes. But do people change along with the times and the technology?"

My self-retort back then — "Yes, but often only when there's no choice" — was aimed at the graphic arts trade: commercial printers and film houses.

In the following issue, I observed, "Ultimately, what's needed are foolproof [desktop] tools that will automatically take care of trapping, dot gain, and CMYK conversion..."

Six years ago, we were still trying to figure out what we *needed* to figure out, to build a desktop workflow for print production. Who was even discussing desktop preflighting software, or masking plug-ins, or hi-fi color?

In 1992, multimedia production on the desktop was still largely a dream. And web page creation hadn't even been invented. But desktop color prepress production? Maybe it wasn't quite ready then, but most of us knew it would be — one day soon.

THE GUTENBERG UNIVERSE

Back then we lived in what I call a Gutenberg Universe. That universe hadn't changed much in about 500 years.

The output device — the press, in the case of the graphic arts universe — lived at the centre of this universe. And we, the content creators, had to try to find our way to the press

located far away at the middle of that universe. We would struggle to get as close as we could to that centre. But in the end we'd be forced to turn over our input to the trade.

For the trade, this universe was ideal. They owned the throughput, which was proprietary. And they also owned the output — which was also proprietary.

Worst of all for us, if we wanted something other than print — like a poster, or a billboard, or a T-shirt, or a sales presentation — we had to go to another universe, and start all over again.

In the old graphic arts workflow, most type was input digitally through word processing files or electronic typesetters, but almost all graphics had to be converted from analog sources: photos, slides, transparencies, or line drawings.

Prepress production was still dominated by the proprietary systems: Hell, Crosfield, Scitex, Screen. Trade color houses still differentiated themselves from "service bureaus".

But PostScript prepress was spreading like a bad weed, and with it came a fundamental shift in the graphics cosmos.

THE 21ST CENTURY GRAPHICS UNIVERSE

In a very short period of time, the Graphic Arts Universe imploded. Opinions differ about precisely when this implosion began, but I tend to date it from around June, 1991, when Adobe released the first version of *Photoshop* which

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could support CMYK separations.

When the dust settled after the Big Bang (also known as the Desktop Revolution), we, the content creators, woke up to find ourselves at the very centre of a digital universe.

Desktop technologies have handed us the ability to affect almost all aspects of input, throughput, and output. Of course, this is both a good thing and a bad thing: a good thing because these technologies let us exercise control over any part of the process, and let us choose any direction in which to push our content, for any form of output — magazines, brochures, catalogues, presentations, bus shelters, coffee mugs, multimedia, or the Web.

But it's also a bad thing in that we suddenly find ourselves saddled with new responsibilities — responsibilities that have a critical impact on the three key requirements of a successful graphics workflow. Those three requirements are: accountability, predictability, and profitability.

ACCOUNTABILITY, PREDICTABILITY AND PROFITABILITY

We, the humanware, along with hardware and software, form the triumvirate of workflow components which must achieve accountability, predictability, and profitability.

The Gutenberg Universe. In the days of the Gutenberg universe, graphics production revolved around the output device, the most important being the offset press. In order for creative content to reach the press, it had to be filtered through many layers of graphic arts trades, from layout artists and camera operators to film strippers and scanner operators.

What's *accountability*? Accountability is knowing that when the job screws up, *it wasn't your fault*.

Accountability is primarily a humanware issue. In the Gutenberg Universe, the customer al-

ways held the trade fully accountable for what went to press, and, within a closed proprietary workflow, the trade accepted that.

But that model doesn't work in a twenty-first century universe. The trade has relinquished control over vital print production decisions that are now being made upstream in the workflow, and new *responsibilities* have now been transferred in part or in whole to the centre of the universe. The open PostScript architecture that made it all possible in the first place offers the trade no security.

So in our new universe, if customers don't understand their new responsibilities, it's the trade's job to set the rules for accountability, in detail.

If accountability isn't established, there can be no easy way to attain *predictability* in the workflow.

And what is predictability? Predictability is knowing ahead of time, with complete certainty, that the job *is* going to screw up.

Predictability relates first to hardware and software (humanware, of course, is notoriously unpredictable). Just as accountability involves understanding and implementing responsibilities, workflow predictability relies on understanding, implementing and integrating various technologies.

Whereas closed proprietary technologies once granted the trade virtually complete predictability (at least in theory), open architecture technologies can carry a relatively intolerable degree of unpredictability.

And what differentiates the predictability of a closed architecture from the unpredictability of an open one?

Standards.

Although the PostScript workflow has many general de facto standards, in total there is no standardization for page layout, font management, color management, file formats, compression schemes, digital proofing, or any other facet of the desktop workflow.

Thus the task at hand for both content creators and print production managers is to establish standards between themselves for job creation, required job elements, job delivery, and details of file construction and utilization of digital resources.

And because desktop workflows have so many more variables than proprietary workflows, success rests on *communication* between the parties.

It's simple. Whether you're the content creator or the trade, if you're not completely sure — ask. Don't assume. Don't guess. And don't ignore.

Most important is the communication that takes place after the job is done. Too often the trade

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quietly fixes the job without sharing information about problems with the content creator. Then they roll their eyes when the next job comes in with the same problems.

These two factors — standards in the workflow and bidirectional communication, before and after — are the cornerstones of workflow predictability.

And with predictability and accountability comes the possibility of producing *profitability*.

Profitability is knowing that even though the job screwed up, *you're* still going to get paid.

A digital workflow that generates profitability is the product of clear accountability and reliable predictability, factored by one other ingredient: *productivity*.

Productivity comes with the intelligent selection and implementation of software, hardware and humanware.

For content creators, this means choosing tools and technologies that work: software with proven success in the workflow, hardware that provides consistent and reliable input, throughput and output.

For the trade, whose investment in technologies can be substantial, it means all of this *and* making conservative calculations with regard to return on investments. Long gone

are the days of five year ROI's. In the world of desktop technologies, six months is a long time. (What really boggles the mind is imagining how all those printers who are

writing big cheques for their new computer-to-plate equipment have justified their investments, particularly the ones with no prior experience with digital workflow.)

No piece of a workflow solution works in a vacuum. The efficiency and productivity of a workflow is measured by the sum of its parts.

With this in mind, watch the industry with an eye towards technology *partnering*. In these days of open systems, we've already seen many examples of partnering on technology solutions among vendors both large and small. But as the desktop workflow continues to meld organically, we will see even more.

Sharing technology information on the hardware and software level is also a reflection of what must happen on the humanware level.

In an industry that changes daily, no workflow can reach maximum productivity without an ongoing focus on knowledge maintenance. Whether formal or informal, whether in a classroom environment or through reading trade journals and comparing experiences with specific technologies, training and education remains an integral part of building a successful digital workflow.

WHAT THE FUTURE HOLDS

The graphics workflow has evolved from a linear mechanical process, to a linear mechanical/electronic process, and finally now to a non-linear all-digital process.

The digital workflow is no longer a goal; it's a reality.

From affordable, good quality digital cameras to fast, accurate computer-to-plate systems, digital technologies work — with predictability.

In the short term, watch for refinements in the PDF workflow, which will address some of the issues surrounding accountability; indeed, the Portable Document Format itself is poised to replace PostScript as the standard for file exchange.

In creative software, watch for news on Adobe and its *K2/Stilton* development which could tilt the scale away from *Quark*-based workflows. Targeted content will become more in demand with new variable data application plug-ins such as Vision's *Edge Focus*, and Meadows' *DataMerge*.

On the horizon is Windows NT 5.0, which promises to boost back end productivity, and may even aid certain areas of content creation as well. Before the year is out, we should also get a sense of what impact Apple's Rhapsody architecture will have on graphics workflow.

This may also be the year that finds us seriously

The 21st Century Graphics Universe. In a content-centric universe, every eventual form of output begins with content which is created and executed in a digital format, and designed with the fundamental precept that it will have multiple uses for a range of types of graphic communications. It also requires the content creator to learn more about the mechanics of each process and to establish rules for accountability.



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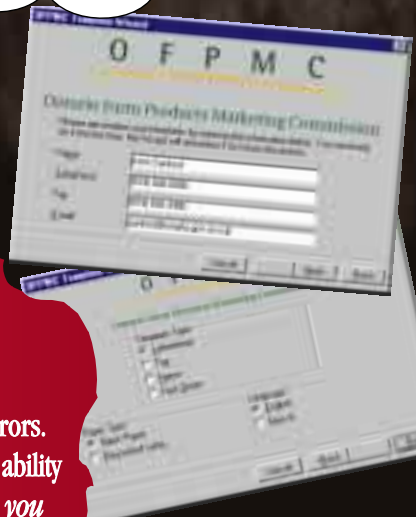
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Better compression algorithms for reducing file sizes are sure to surface. Technologies like STiNG, Iterated Systems' new fractal compression algorithms which Altamira has incorporated into the latest version of its *Photoshop* plug-in, *Genuine Fractals Pro*, will have a significant impact on file transfer and throughput.

Satellite networks and DSL connectivity promise to speed up and streamline digital delivery. Digital printing and CTP will see the greatest workflow gains from these new technologies.

Prepress debates over ROOM (Rip Once Output Many) versus Agfa's NORM (Normalize Once Render Many) will need to be resolved before a core digital workflow for graphic arts is solidified.

And finally, technology partnerships or mergers will be the norm in the evolution of the twenty-first century workflow; witness such recent examples as Quark's alliance with Microsoft; the Epson/DuPont cooperative effort on inkjet proofing; the acquisition of CTP manufacturer Gerber by Barco Graphics; and Agfa's integration of Polaroid's PolaProof halftone digital proofer into its CTP workflow.

WE ARE THE HUMANWARE

In all of this discussion, let us never forget that we are the humanware. It's our job to choose our technology paths carefully and intelligently.

The sum of all our individual decisions is that we are building more than just a "digital workflow". We are building a thinking process — you and I and all the rest of the members of the graphics universe today. And that process will be passed on to the next generation, for them to refine and improve just as we have refined and improved the process that was passed on to us. *

Bill's Universe. If we don't act on creating a digital workflow specifically tailored to the needs of sophisticated content creation and production, we risk being swallowed by a universe designed for the lowest common denominator, with homogenized interfaces, tools and systems.



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