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Adobe Systems in the Newspaper Industry

Adobe® PostScript® 3™

Adobe® PostScript®, Adobe Acrobat®, and Adobe PDF Advance Digital Workflow Efficiency

Digital technologies have been a part of the daily newspaper world for many decades. Newspapers began setting type using computers in the early 1960s. By the early 1980s, most newspapers were using digital systems to set type in galleys, which were cut and pasted into pages, and then imaged. These days, the world's leading-edge newspapers are moving to 100 percent digital page assembly and distribution, streamlining workflow processes while ensuring higher quality. Key software technologies from Adobe Systems, including Adobe PostScript 3,™ Adobe Acrobat, and Adobe Portable Document Format (PDF), are enabling this shift. Adobe is now taking the PostScript technology-based digital workflow process to the next level by using PDF to enable greater efficiencies than ever before possible.

Traditional Creation and Distribution

Even in the 1980s, much of the newspaper industry continued to rely on "print out and paste up" methods of production for the creation of both editorial and advertising content. For advertising, the process varies, but most retailers or ad agencies assemble ads using a combination of software applications, output them to paper or film, and then distribute them to newspapers via messenger, overnight express service, or U.S. mail. Once ads are received, the newspaper checks ad size, validates spot color requirements, and verifies film for process colors. The ad then goes to the production department, where it is pasted into the page or scanned for later imaging as part of a complete page. This process has its limitations. Deadline pressures, delivery costs, final quality, and the difficulty of using color are a few issues with the traditional prepress process.

Because ads are pasted up at the last minute, errors in ads are often a problem, leading to "make-goods," which is the practice of running an ad again for free to make up for an error, resulting in lost revenue. Inclement weather or other problems can cause ads to be delayed or even lost en route to their destinations. Airport closings can force retailers to turn to counter-to-counter courier services that charge hundreds of dollars. Hard-copy ads also lack the flexibility to accommodate late-breaking copy changes. Once an ad is received at the newspaper, it is considered final.

For editorial content, the production process is similar. Stories are created using an editorial front-end system; type is set in galleys and then cut up and pasted onto boards for imaging. While some editorial content is created in a page layout program, ads are often added using cut and paste methods to create final documents. Color photos and graphical elements are difficult to incorporate, given the challenges of doing manual color separations quickly and reproducing with high-quality results. "Reproducing color in a quality manner using a mechanical prepress process is heavily labor-intensive," says David M. Cole, proprietor of The Cole Group, a newspaper consulting firm based in Daly City, California. "As a result of the difficulties and time constraints of processing color, newspapers that use traditional methods can run color pictures with feature stories but often not with news stories."

The Move to a Digital Workflow

Because of these limitations, many newspapers are turning to a complete digital process. With these new processes, reporters write stories in standard word processing applications. A page layout application is used for composition, and a pagination system tracks each element in a database. Ads can be sent to newspapers electronically and placed directly in the page. Headlines and captions are added; pages are then proofread. At the push of a button, pages are composed from elements in the pagination database, and a PostScript file is created. The PostScript file is then sent to a raster image processor (RIP), which rasterizes the pages and sends them to a plotter where they are printed on resin-coated paper or mylar-based negative film. In some cases, the rasterized file is sent to a high-quality fax machine where it is digitally transmitted to a remote printing facility.

Digital workflow has many benefits, including better reproduction, flexibility in terms of output devices, and greater accuracy in ad tracking and placement. Proofing can be done electronically, contributing to greater efficiency and reliability. No longer do agencies or newspapers have to rely on overnight services because files can be sent electronically. Working with color is far easier because color separation happens as the page is being imaged, eliminating the labor-intensive, time-consuming mechanical color separation process. Delivering ads digitally also has many advantages. Ads can be transmitted up to the last minute, improving time-to-market and allowing retailers to make changes based on late-breaking market demands or inventory changes.

But even when using 100 percent digital prepress, challenges exist. Because users work with a multitude of software applications as well as different fonts and different platforms, workflow can be extremely complicated. There can be too many different items to track, leading to delays in production and increased errors. Additional limitations on the editorial side include the bandwidth issues associated with sending large, rasterized PostScript files to printing facilities—which are often in a remote location—for proofing and printing. Using expensive satellite transmission or high-speed land lines is the typical way to solve this problem.

On the advertising side, digital distribution of ads addresses some of the ad cost, quality, and accuracy issues, but checking and imaging digital files continues to present problems. Frequent issues in digital ads include missing fonts, corrupt files, missing graphics elements, copy inaccuracies, variations in application software versions, and use of software or software extensions not available at the newspaper. “Ad files in native application format sometimes don’t work when they are moved from point A to point B,” says Donna Yannessa, quality assurance manager for *The Philadelphia Inquirer.* “Whatever fonts were used in the job won’t print. Fonts and graphics become corrupted, all sorts of things happen almost every day that prevent ads from coming through our equipment.”

PDF has been used for several years to address the issues of digital ad delivery. PDF files are completely portable and platform-independent. In addition, files converted to PDF are highly compressed, enabling rapid transmission over medium-bandwidth communication lines. Proofing using PDF is faster and easier because users can make annotations directly within the file and the creator can summarize all the comments. Another contributor to improved efficiency is the ability to create a PDF Digital Master, which contains all the graphics, fonts, text, images, and other elements of pages in a single compact file. PDF is also a secure file format, within which Acrobat users can specify levels of security for their files. A file can be saved with password protection so that it cannot be resaved without the password. PDF documents also are searchable, an important capability especially after documents are archived. Many third-party tools allow PDF files to be searched for specific text strings. PDF even has features for interactive document use. Hyperlinks can be added in order to move from page to page with ease.

Another key advantage of PDF is its open architecture. Acrobat is an extensible application, and third-party developers are taking advantage of this to develop innovative plug-ins and solutions for the newspaper industry that make an investment in PDF scalable and flexible.

Now, the use of PDF is being extended to the digital workflow process to overcome many of the challenges of strictly PostScript technology-based production processes. In PDF-based workflow, PDF is the common file format that maintains the integrity of editorial content originating from a variety of typesetting equipment

The Differences Between PostScript and PDF

Adobe PostScript is a proven software technology, and the PostScript language is the world's leading printing language. Recent studies show that 75 percent of all commercial publications in the world are printed using the PostScript language. Adobe PostScript software, which Adobe delivers through original equipment manufacturers (OEMs) that develop output devices and workflow solutions, offers high-quality, reliable printing, along with value-added features such as printer drivers and fonts.

Adobe Acrobat 3.0 is actually a set of applications, each with its own unique capabilities, that runs on Macintosh, Windows,® and UNIX® platforms. Acrobat Reader allows users to view, annotate, and print PDF files. Acrobat Reader can be downloaded free from the Adobe Web site and is currently being downloaded at an average of 70,000 copies per day. Acrobat Exchange® is a more full-featured version of Acrobat than the free Acrobat Reader and allows viewing, printing, annotating, editing, and combining of PDF files. Acrobat Exchange is also extensible through the use of third-party plug-ins. Acrobat Distiller® creates PDF files from PostScript language files. Distiller can be set to create PDF files for output to various media such as the Web and print. Acrobat has other components, but those most relevant to the newspaper industry are Acrobat Reader, Acrobat Exchange, and Distiller.

PostScript technology has traditionally been a key component of the digital workflow process. A PostScript language file is written as an interpreted software program, generally as the output from a graphics or layout application. A PostScript file goes to the RIP "as is," and pages are imaged in order. The PostScript file is essentially an interpreted stream of data. As a result, there is no page independence. Objects from one page can be dependent on objects of another page. If a font, for instance, was downloaded on an earlier page, a later page cannot be printed without it.

PDF, on the other hand, is a declarative, object-based file. Each object on a page is independent of other objects and pages. Thus, files can be merged, documents can be combined, or pages can be deleted without having an impact on other pages or objects. For example, if a font is used on an earlier page and then that page is deleted, later pages can still print. In addition, PDF files can be viewed and edited easily. Users have direct access to the objects and resources within every file. For these reasons and more, Adobe PDF-based workflows have the potential to overcome many of the traditional limitations of PostScript technology-based workflows.

New Features for Print Production

Adobe PostScript 3 technology has one of the most advanced and flexible architectures for enabling a complete digital workflow. Through the support of a composite prepress workflow, newspapers can automate tasks that were once tedious and time-consuming, leaving more time for other services and revenue opportunities. Specifically, Adobe PostScript 3 offers key new features that not only make it easier to print PDF files, but provide more reliable, consistent printing. Adobe PostScript 3 supports direct printing of PDF files. Through the use of drop folders and hot folders, users can queue jobs to a device without having to open and print or proof them from within an application.

Adobe PostScript 3 technology also supports In-RIP trapping. Adobe's patented trapping engine allows users to specify trapping zones and locations for their specific needs. To achieve optimum quality, customers can specify different settings for different printing engines. Using plug-ins for common publishing applications such as Adobe PageMaker® and QuarkXPress,® customers can also set trapping information within the applications. This feature offers flexibility in the workflow and streamlines complex individualistic workflows.

Adobe PostScript 3 also improves workflow productivity and facilitates the use of color through Device N, which allows process color spaces fewer than four colors (such as duotones and tritones) or more than four colors (such as HiFi colors). Device N color provides a mechanism for representing a wider color gamut than the traditional RGB and CMYK color models, enabling printing of more color spaces and complex color documents. And, because Adobe PostScript 3 supports In-RIP color separation on both low-end and high-end devices and everything in between, users who have proofed their separations on lower end devices will get the same reliable results on high-end output devices.

Acrobat 3.0 and PDF language version 1.2 also have new features that make PDF more useful in the print production process. For example, PDF can now retain the necessary information in PostScript files such as those used in print production today. Now, PDF supports all PostScript Level 2 color spaces and spot colors, making it suitable for use in color print work. This is an important development, especially for digital delivery of advertising. Composite color ads can now be delivered reliably to newspapers using PDF, eliminating the need to pre-separate color before sending. Acrobat 3.0 also offers the ability to export PDF as Encapsulated PostScript (EPS), allowing users to proof and distribute files in PDF and allowing newspapers to subsequently place the file into a page in EPS format. This reduces the amount of stripping necessary later in the workflow and also can reduce errors in ad placement.

The Key—PDF Digital Master Files

The key element, and an important improvement, of PDF-based workflow over PostScript technology-based workflow is the use of PDF as a Digital Master file. This file contains everything, including text, fonts, line art, graphics, and photos, yet in most cases, it is very small due to Acrobat software's compression capabilities. A PDF Digital Master maintains the visual integrity of a document and maintains it in such a way that it can easily be viewed or edited on any platform and printed to any device. It also contains all the printing features of the PostScript file such as overprint, UCR, GCR, halftone data, and transfer functions. A PDF Digital Master is, in fact, a PostScript language file interpreted by Adobe technology into a viewable and editable PDF file.

When newspapers compose pages in a page layout program and send files off for print production, they send more than just text. Files also include illustrations, photos, and fonts. Combining these elements into a PDF file provides everything that is necessary, all in one place, reducing the chances of error and the difficulty associated with tracking hundreds of different elements. This is why retailers delivering ads digitally and newspapers transmitting files to remote printing sites are increasingly converting their PostScript files to PDF using Acrobat Distiller and then transmitting them to the remote location.

Acrobat Distiller preserves all the nuances of PostScript and embeds them in a compact, completely platform- and application-independent PDF file. Use of PDF has other advantages as well. PDF is a compressed file format, alleviating the bandwidth issues associated with sending large ads to newspapers or rasterized files to remote printing facilities. Users can set file or image compression specific to their needs. PDF also eliminates many of the problems associated with traditional digital delivery—issues such as missing fonts, corrupt files, or variations in application software versions. As a result of processing PostScript files through Acrobat Distiller, an Adobe PostScript interpreter, any PostScript problems are found before the file goes to the output phase so files print more reliably. "PDF files are essentially pre-RIPped; the right fonts are there; and any PostScript issues are pinpointed early on for correction," explains David M. Cole. "Because of this, PDF files are less likely to cause problems with a RIP when a page is being imaged."

In the case of ads, PDF saves time and lets newspapers receive digital ads without the worry of application software and/or platform compatibility. When a newspaper receives a PDF file, it can be sent to a pagination system or printed through an imagesetter with fewer problems. When using a device with Adobe PostScript 3, the file can be passed directly to a hot folder for printing, enabling the PDF file to be output directly, saving steps in the workflow. PDF also allows easier late-stage editing, enabling greater flexibility and market responsiveness. Advertisers can change ads up to the last minute in response to inventory changes or market demands and send them faster with Acrobat software's compression capabilities.

Throughout the production process, PDF is becoming a standard means of transporting composite documents—whether they are ads or newspaper pages—quickly, completely and efficiently. PDF serves as a single, open standard file format that provides everyone involved in the process access to files in the same form and quality as the original, regardless of the application or platform used to create it. One example of a company taking advantage of PDF is The Associated Press (AP).

AP AdSEND Uses PDF to Distribute Ads Digitally

AP AdSEND, a digital advertising delivery service launched by the AP, has used PDF as a standard file format to streamline advertising workflow since 1994. The AP foresaw the move toward digital workflows in the newspaper and magazine industry, recognized that this would compress production timelines, and wanted to provide its customers with a means of delivering ads faster, more consistently, and more reliably. The AP AdSEND service leverages the AP's communications network and technical expertise to electronically deliver ads to more than 1,550 newspapers throughout the United States. PDF is used as a common file format to retain the visual appearance of advertisements originating from a variety of typesetting equipment and distributed over a range of computer systems. "We're now distributing an incredible volume of ads in PDF on a daily basis," says Jim Gerberich, AP director of operations for business development. "Yesterday alone, we sent more than 7,400 ads in PDF in one day. Our monthly average runs between 100,000 and 125,000."

One big reason the AP AdSEND service is growing so dramatically is the fact that the industry has become comfortable with PDF, as well as AdSEND's ability to support the end user. Growth is also spurred by the ability in Acrobat 3.02 to support composite color. Prior to Acrobat version 3.02, AP AdSEND users had to send pre-separated color, which meant extra effort and inconvenience. "Now, more and more advertisers are sending composite color ads," says Gerberich. "People trust PDF, and it's becoming a *de facto* standard for ad distribution."

According to Gerberich, another big advantage to AP AdSEND and PDF is spontaneity. AdSEND clients make critical ad decisions up to the last minute. As a result, the entire workflow and advertising process is compressed. This is further supported by the compression capabilities of Acrobat, which speed transmission. "Using AP AdSEND and PDF, advertisers can make last-minute decisions based on market needs and inventory. Before, advertisers had to decide far in advance and try to anticipate market needs," Gerberich says. "Just a few years ago, an advertiser that decided on Thursday to advertise in ten Sunday papers would have been hiring airplanes to make it happen."

Now, Adobe's tools allow AP AdSEND customers to virtually eliminate the use and cost of overnight services. "Unlike using an overnight service, AdSEND doesn't require a lot of advanced planning. Acrobat allows us to complete the process in as little as one hour. This has been a huge benefit to the industry," explains Gerberich.

The Philadelphia Inquirer is taking advantage of PDF and services such as AP AdSEND to streamline the advertising and prepress process. According to Donna Yannessa, AP AdSEND and PDF take much of the worry out of working with digital ads. "PDF files typically don't break. We often take files we receive in native application format and convert them to PDF to make them print or to isolate a problem," says Yannessa. "PDF files also are small and easy to move around."

The Philadelphia Inquirer is incorporating PDF into the workflow process for its Sunday magazine as well. Ads are received in both native-application format and as PDF files. To avoid sending all the fonts to the printer, files are converted to PDF with fonts embedded, placed in an electronic page, and then sent to the printer for output and printing. "PDF has solved many of the font issues we previously faced," says Yannessa.

As a major advertiser, Macy's West also takes advantage of AP AdSEND and PDF to deliver ads to newspapers. "Our entire newspaper advertising workflow is in PDF," says Ward Parsons, director of marketing technology for Macy's West. Macy's West delivers between 400 and 500 ads in PDF each month, roughly 25 percent of them are color. The result? Consumables have been cut by 85 percent. Man-hours on ad delivery have been reduced by 75 percent. But perhaps the biggest benefits are intangible. "With increased speed and flexibility, we can tailor ads to specific markets," says Parsons. "We can also use ads for multiple purposes—quickly post PDF files on our intranet, for instance, to let stores in different regions know what items are on sale and be prepared with sufficient quantities of those products."

Autologic Information International and Zero Hora Use PDF for Easy Remote Printing

To deliver comprehensive PDF-based workflow solutions to the newspaper industry, Adobe is working with a number of OEMs. OEMs in turn are leveraging key Adobe technologies such as Adobe PostScript 3, Acrobat, and PDF to bring benefits to their newspaper customers. Among them is Autologic Information International (aii), based in Thousand Oaks, California. One aii customer in particular, Zero Hora, a major newspaper in

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E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.