

THE SEYBOLD

REPORT

Volume 8, Number 1 • January 10, 2008

Under the Hood: InDesign Server and Automated Publishing

by Ron Roszkiewicz

The size of the rising market share of Adobe InDesign – the desktop application – is a hotly debated topic. The server version is gaining similar acceptance, challenging Quark’s role as a behind-the-scenes publishing engine. In this report, we examine the options for those looking to build a publishing system with Adobe components and a DAM foundation, including offerings from DPCI, MEI and ADAM Software. We also take a look at the role of InCopy CS3 in the InDesign Server universe.

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We’re Online, Now What? Integrating Web 2.0 Into Newspaper Sites

by L. Carol Christopher

Newspapers grudgingly nudged online are discovering that merely having a Web site for their readers to visit isn’t enough anymore. In the Web 2.0 world of social networking, they’ve got to entice and engage their audience. At Ifra’s recent Beyond the Printed Word conference in Dublin, speakers took on the subject of how to make readers part of their newspaper’s conversation, discussing what they’ve learned in their own companies. (Part 1 of 2)

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Adobe and Yahoo Explore PDF Advertising

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In late November, Adobe Systems and Yahoo announced a joint venture to couple Yahoo advertising with PDF files published on the Web. The program, dubbed “Ads for Adobe PDF Powered by Yahoo,” makes it easier for publishers to garner revenue from online content presented in PDF form.

XMP: Building a Consensus

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At the recent XMP Summit, held on the last day of the Henry Stewart conference, attendees took the first steps towards making Adobe’s XMP metadata specification an actual standard. There’s a long way to go before that happens, however. One of the biggest hurdles: digital rights management.

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Under the Hood: InDesign Server and Automated Publishing

By Ron Roszkiewicz

The size of the rising market share of Adobe InDesign – the desktop application – is a hotly debated topic. The server version is gaining similar acceptance, challenging Quark’s role as a behind-the-scenes publishing engine. In this report, we examine the options for those looking to build a publishing system with Adobe components.

Only 25 years ago a publishing system was a sea of proprietary, dumb, Atex J-11 workstations linked to a server. Use of these stations was straightforward and training was not a major issue. Publishing systems today, even those built by Atex, are assembled from components that snap together with relative ease, thanks to standards and interoperable computer languages. The problems with proprietary systems were not reliability or operator efficiency, but the fact that they were closed environments. Future development was limited by the developer’s vision of the requirements of the industry. The desktop publishing revolution both initiated and accelerated the downward spiral of the proprietary systems without providing any alternative replacement – until recently.

The move away from monolithic systems also coincided with a wholesale change in the definition of a publishing system. Today the concept of publishing system extends as far upstream as job booking, and as far downstream as press OKs. The definition of the user has also changed. A designer may be a highly skilled artist creating a new magazine design or an account executive creating a regional sales flyer with a point-and-click, template driven design application. Systems are now built from inexpensive desktop computers with software that costs a fraction of what a proprietary system once cost. Of course we have not developed a “super user” to manage this breadth of functionality so the responsibility falls to system developers and integrators to provide access to the power of the system through friendly user interfaces and provide the glue that makes everything interoperate as one big logical system.

The same holds true of collaboration. Early publishing systems represented one approach to sharing the editorial workload. Today collaboration is required in design, content creation, review and approval cycles, as well as press OKs. Sharing data in a hybrid system tests the fundamental architecture of the engines that drive it. The nature of collaboration has also been extended to mean interactive screen, file and application sharing in real time.

On the business side, automated digital workflows, when well executed, can go a long way to decrease errors and reduce the time lag typical in an analog or analog/digital workflow. This opens up new profit opportunities through innovative automation and content repurposing. Proprietary systems never provided such economic and operational flexibility.

On the user side, responsibility has shifted away from specialists and the work environment has been changed from a static hardware based workstation existence to a dynamic software environment. This dynamic software environment, now even extends beyond the intranet to external consumers, accessing valuable branded assets in the field. The result is a new class of users with little design expertise and only basic computing skills. Supporting these new users requires an even simpler user experience, pre-made templates, and images configured to lead to successful results. To serve these new content consumers, software developers and integrators are creating new browser based applications – doing more problem solving under the hood than ever before.

InDesign Server overview

At its core, InDesign Server is the functional equivalent of InDesign for typography, composition, etc. – albeit in server form. According to Adobe, the server version is designed to meet the needs of the enterprise as a robust, scalable and flexible back-end, allowing developers to build their own user interface, tailored to the specific needs of any target solution.

The flexible, customizable nature of InDesign and InDesign Server can be traced to the early days of their development. The idea, revolutionary at the time, was to build a core application with most of the application functionality hooked into the core through plug-ins. Using this plug-in model enabled different teams to focus on their more limited functional sets and test them independently. Numerous preliminary applications were built and previewed and third-party developers got an early opportunity to begin developing to suit their markets.

The essential difference between InDesign and InDesign Server is that the former is primarily built for manual creation of content, while the latter is designed to be driven automatically by a publishing solution. Since they share the same code base, InDesign Server inherits the core features of the desktop version, including layout/typography, layer effects, table styles, support for native Word and Excel files and automatic generation of layouts from XML. Files format support includes PDF, PSD, AI, TIFF, JPEG, and EPS. It can output to PDF, PostScript, JPEG, EPS and XHTML. Like any other application in the Creative Suite, InDesign Server fully supports Adobe's XMP specification, with the ability to ingest and extract metadata as required.

InDesign Server is designed to run on common server based operating systems such as Windows Server 2003 and Mac OS X Server. The latest version also runs on Intel-based Macintosh hardware, significantly enhancing performance. It provides support for JavaScript, AppleScript and VBScript. InDesign Server provides a full **Java** API that communicates through **CORBA**.

The value of InDesign Server is its ability to automate the process of professional design and production, while interacting with a range of systems and data sources.

Extending InDesign Server

In practice, no single GUI can fit every application. For that reason InDesign Server does not ship with a user interface. It is typically delivered with a custom user interface developed using HTML, Java, Adobe Flash or Adobe Flex. Custom client development is possible using SOAP, Java, AppleScript and custom plug-in development is usually done using .NET, C++ or Visual Basic development environments.

The principal value of InDesign Server is in its ability to automate the process of professional design and production, while interacting with a range of other systems and data sources. Starting with templates, InDesign Server can automatically create structured documents such as catalogs, using data provided from databases or a DAM solution with little or no user input.

Alternatively, InDesign Server may be used as an engine to drive a Web-based front end, allowing non-designers to take high quality templates and use their own words and images to complete the documents.

In all cases, InDesign Server creates reliable forms of output to suit the application, including press-ready

PDFs, InDesign Documents, lo-resolution PDFs for review as well as non-print output.

Use case: Database Publishing Corporation Inc.

Since 1999, **DPCI** has enjoyed a reputation for providing digital asset management and publishing solutions to top tier publishing and marketing companies. They recently designed and implemented a web to print workflow at Comcast, a major US media communications company. They chose InDesign Server for this installation because of its robust environment for automating layout and delivery of finished proofs and documents and because of its broad support for Microsoft .NET. At Comcast, DPCI set up a personalized publishing environment to support a variety of web applications. The objective was to support an increasing number of dispersed field marketing agents and provide a simple single sign-on approach to building and ordering marketing campaign pieces through a web browser.

At Comcast, designers create the original marketing collateral, with optional design elements that reflect regional variations such as current sales promotions, local television programming and cultural differences. The extent of customization allowed is centrally controlled, but individual field agents are allowed some choice in the look and feel of the end product. Once the local marketing person has used the online system to build a custom document, a proof is sent to the agent for approval. This is followed by a high-resolution package of all the related composite elements uploaded to an FTP site to be accessed by the printer.

To make this automation happen, all assets are fed to InDesign Server from a DAM system. Custom plug-ins were written to leverage the .NET web application development. All design work by field agents takes place in virtual browser space and is executed by InDesign Server as a backend process.

DPCI's custom .NET based web application lets users upload, edit and manage InDesign templates from any web browser.

No actual manipulation of layout elements is being done by the agents, so no plug-ins for any other Creative Suite applications were necessary. Content is managed using SQLServer and .NET. DPCI has partnerships with numerous content management system developers and can script their way to extracting and streaming data from most any CMS or DAM system to an InDesign Server for layout. To further support such installations, DPCI has invested in development of an advanced business logic rules database to modify and control incoming content. When fully operational, the Comcast system will serve 1,200 users.

Use Case: Managing Editor Inc.

MEI sells and supports the Wave2 Publishing Platform from Wave2 Media Solutions Ltd. Wave2 uses InDesign CS3 Server to generate customized documents on demand. MEI also distributes SoftCare's K4, which uses InDesign CS3 Server to enable editorial staff and outside contributors – wherever they may be – to log in over the Internet to search for stories and assignments, check out articles and edit them, and also see the results of their editing in an adjoining JPEG preview of the layout. The K4 Web Editor uses InDesign Server to build HTML versions of layouts so that remote and local users can view them via the web complete with inline notes, overset indicator, styling and page geometry.

One particularly successful Wave2 installation was at Northcliffe Media Group. Northcliffe is a large regional publisher of daily and weekly titles in the United Kingdom. Their approach to streamlining and automating the sales and production of high quality advertising has been achieved through a system called The Bubble. By combining thousands of pre-made ad layouts together with the technology built on InDesign Server from Wave2 Media Solutions, they now have a scalable and extensible publishing platform to support new revenue opportunities. Initially they sought to maintain their competitive edge through cost cutting by combining high quality with automation. However, they have also realized a gain of \$400,000 in display ad revenue, while reducing the production cycle by about 90%. As an additional side effect, The Bubble eliminated the need for an outside production house and provided added value by engaging customers more directly in the design process.

Use Case: ADAM Software

ADAM Software specializes in developing asset management and media supply chain components. Their graphic arts and prepress experience spans 15 years. They have created solutions for packaging, cataloging and brand management workflows among others. Their support for Adobe technology is focused on three products: Docmaker Studio, InDesign Connector and Version Cue Connector. The Docmaker Studio is

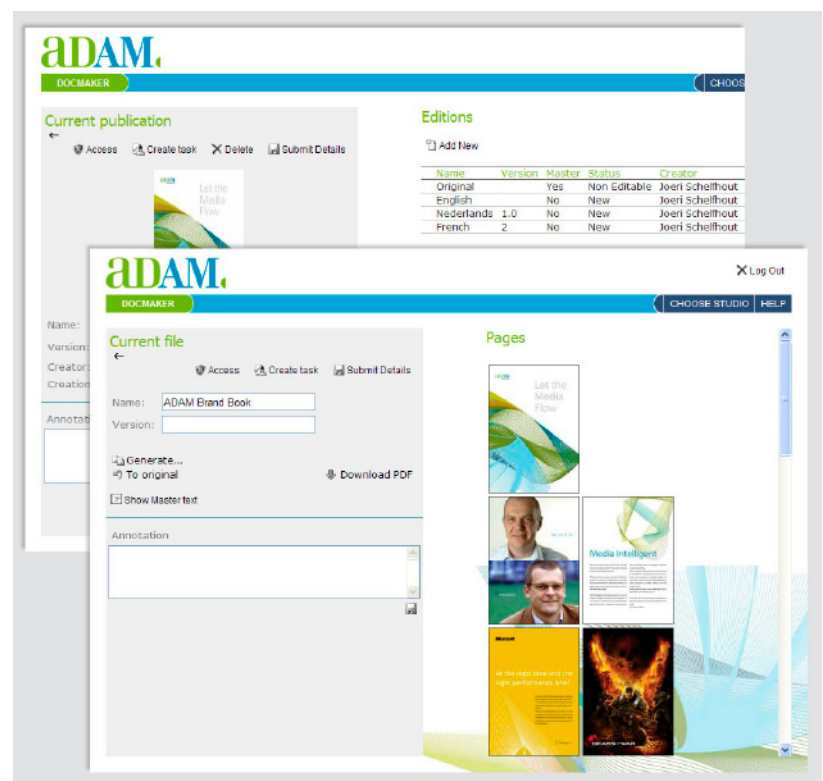
an application for language and culture-based localization and translation of media rich documents. The application is template based and draws on templates and rules defined and stored with InDesign Server. User friendliness and access is paramount and the interface supports the automatic creation of POS and other collateral even by non-designers.

The Version Cue Connector links to the ADAM Asset Studio as one central media repository, which can store any media type, and also allows Adobe Bridge to appear as a component in their workflow. The ADAM Asset Studio is accessed via a web interface. The InDesign Connector brings automation and semi-automation to numerous page building and design processes, stores native templates and tightly integrates with ADAM's project management workflow. Of particular importance, is the ability to create multi-lingual variants and specify rules for automatic resizing of content boxes, an extremely important capability in the European market they currently serve.

The new InCopy

InCopy is professional editing and copy fitting software that tightly integrates InDesign and InDesign Server. Since InCopy is based on the InDesign code base it can accurately represent its copy fitting and paragraph styles. While a document is being laid out, multiple writers can check out and edit assigned stories, using one of three available views. Galley view displays accurate line breaks based on the column width in the layout. The Story view allows faster word processing

Adam Software's Docmaker utilizes the company's DAM system and InDesign Server to manage and create multi-version publications.



by presenting the text without regard to the column width and line breaks. Layout view is essentially that of InDesign, with the ability to edit text but not alter the layout.

InCopy provides a rich feature set for both editors and copywriters. Control over text styles provides a simple mechanism to make changes globally. An enhanced find/change function provides a quick way to change text and text formatting in documents of any length. A built-in review and approval function provides a simple way to manage and review versions, edits, notes, communications between writer and editor, and accept or reject changes.

Besides the ability to format text, InDesign's professional typographic adjustments can be made to leading, letterspacing, and paragraph spacing within InCopy documents. OpenType fonts and Unicode character encoding is supported. File and language support is available for Microsoft Word, Excel, RTF, ASCII and XML. Tables can be created from scratch or imported already styled from Word and Excel directly. Tab delimited text files can be turned the tables and have the formatting applied InCopy CS3.

InCopy supports the creation and editing of structured XML text and tables.

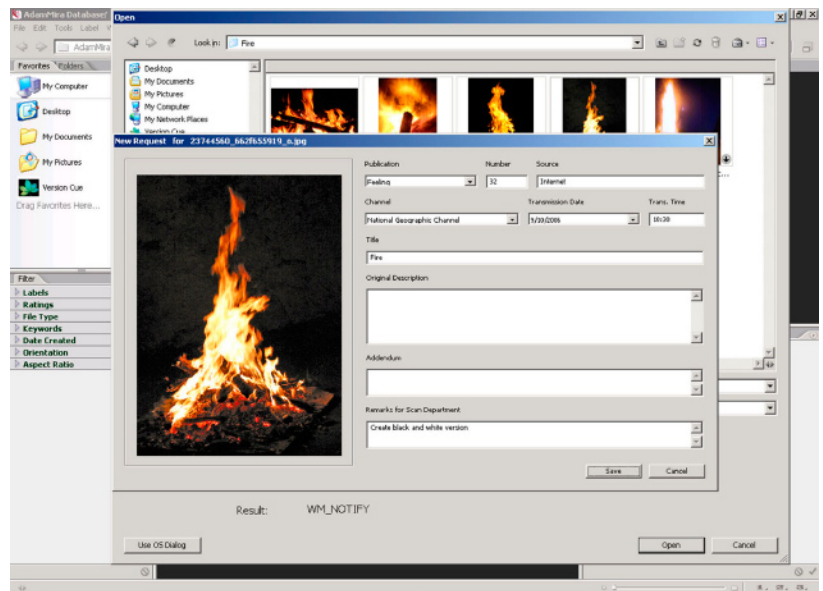
Extending InCopy

InCopy supports the creation and editing of structured XML text and tables. Scripting automation has been expanded to include scripts written in JavaScript (including compiled JavaScript), AppleScript, and VBScript. Developers can create user interfaces with Adobe ExtendScript toolkit for JavaScript scripts. Options for running scripts include running a script from the Scripts panel; attaching a script to an InCopy menu command or keyboard shortcut so that it runs automatically; or access scripts using Quick Apply.

While InCopy CS3 may now be used as a stand-alone application, its value is best seen in the many InDesign Server-based systems discussed in these pages since 2001.

XML and The eXtensibility Factor

Much of the logic behind how we identify and describe printed and virtual pages stems from work done 40 years ago at IBM. Their generalized markup language (GML) was designed as a machine-readable language that describes a document's format and content layout. Over the years GML was transformed to standard generalized markup language (SGML) and found broader



acceptance in structured document publishing. The key to these markup languages was the fact that content could be tagged by the user.

In the early days of the Web, the hypertext markup language (HTML) was used to describe the content and structure of web pages. Although limited in its ability, it did form the basis for future extended versions such as XHTML – a synthesis of HTML and XML. Two of the most important reasons for the existence of XHTML are the requirement to support more devices such as phones and PDAs and the need to allow companies to customize tags for their own unique content. XHTML provides a way for content to be formatted properly for different devices based on style sheets. Adobe supports XHTML as an export format from both InDesign and InDesign Server, allowing both to export content into web-ready form. In order to ensure the maximum flexibility in repurposing content, the momentum today is to separate presentation from content. The only formatting not preserved in the export is the text formatting. This can be done easily with a cascading stylesheet (CSS) editor in Dreamweaver.

MXML is the XML-based language that developers use to lay out components in Flex applications. Flex is an application that many integrators and developers are using to develop user interfaces for their InDesign Server solutions. It provides a declarative approach to controlling an application's visual appearance. Using MXML, developers can position components and specify constraints to enable a more "liquid" and intuitive user interface. Developers can also use View States and Transitions to control how the application responds to different user actions and application events.

XML is also the language used for Adobe's Extensible Metadata Platform (XMP) embedding scheme. It provides the structure that contains the tags that describe content and act as triggers in automated

Files, previews and metadata from the ADAM Digital Assets Studio are displayed and edited from the VersionCue interface.

workflow procedures. Companies can have their own namespaces and schema that define their unique properties and property values.

In InDesign Server, XML can be used for layout automation and content reuse. Layout automation is particularly effective in situations where the layout elements fit into a predictable structure or as part of a semi-automatic page-editing scheme as is done with ADAM Software's DocMaker. In some cases automatic layout is fed through a link to a database where the content is stored and managed. XML can also act as an intermediate file format when data is moved between

Not everyone sees the world with XMP-colored glasses.

dissimilar systems. Although similar in many ways to PDF files, XML differs in that it preserves the structure but not the appearance of content. This is another reason why it has become so popular as a format for repurposing content in different media.

InDesign CS3 Server includes a new rules-based XML processing engine that enables developers and IT professionals to create custom XML import solutions to dynamically generate design-rich documents. Business logic, formatting guidelines, and design templates can be defined as rules that combine with XML to drive InDesign to dynamically build custom page layouts. Rule sets are defined using standard scripting languages – JavaScript, AppleScript, or VBScript – making it easy to prototype new sets as well as extend and maintain existing ones. Combined with InDesign CS3 Server, the XML rules engine provides publishers with a robust publishing solution for automated data-driven document creation.

XMP overview

Adobe's Extensible Metadata Platform (XMP) is a labeling technology that allows users to embed metadata into the file itself. With XMP, desktop applications and back-end publishing systems gain a common method for capturing, sharing, and leveraging this valuable metadata – opening the door for more efficient job processing, workflow automation and rights management. According to Adobe, XMP takes the "heavy lifting" out of metadata integration, offering content creators an easy way to embed meaningful information in the files themselves, providing industry partners with building blocks to develop optimized workflow solutions.

Many software publishers developing products for content creation now support XMP or non-destructively maintain it as part of the native file. Since XMP is metadata contained in an XML packet, workflow systems that rely on streaming XML can make optimum use of this delivery mechanism.

The benefit of pervasive and persistent XMP use for third-party developers is being tested each and every day. Developers are finding that very little additional development is needed to resolve a schema used in another system. This is possible because the XMP is a platform that sets the standard for how to use metadata and developers of digital asset management services can use it to serve metadata to applications such as browser based image display products without the user being any the wiser. A recent practical example of how XMP can serve complex workflows is at a leading premium cable station. Like many customers, they use a variety of systems within their workflow, in this case including Global Edit, an online image management system, and MediaBeacons' DAM solution. When the requirement for sharing data between the two databases was identified, everyone expected this to be a difficult process requiring custom integration. However, as both systems used XMP as a common reference for their metadata, it turned out that it was easy to share data between the two systems.

Not everyone sees the world with XMP-colored glasses. Because XMP is a proprietary format – as opposed to a true standard – there is reluctance in some industry segments, such as photography, to give Adobe full control of their metadata destinies. However, it's very hard to ignore the dominant player in the market. Most vendors are at least adding XMP to their development efforts. If Adobe relinquishes XMP control to a true standards body, the revolution will really be over.

Conclusions

A couple years ago we were led to believe that we could expect a release of Creative Suite every 18 months or so. Around that time Adobe also announced their focus on new media and devices and of course their intention to acquire Macromedia. The acquisition seems to have been a catalyst for change and led to an almost hyperkinetic flow of new technology and applications. Adobe Labs, Photoshop Lightroom, Photoshop Express, Acrobat Connect, AIR/Flex and InDesign Server have either been released or enhanced to support new media and in the case of InDesign Server to drive automated publishing. The tangible result is that their risk is being rewarded and a new model for success in high tech is being defined.

For Adobe, enriching the gene pool by acquiring forward-looking companies may have come at a critical time in its history. Twenty years ago, prior to the introduction of Photoshop, Adobe's licensing of PostScript technology was on the decline. With the introduction of Photoshop, the company seemed to transform itself into a software and applications company. Today this entrepreneurial spirit is also keeping the large company Adobe has become from slipping into institutional stasis.

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