# Controlling the Data Chaos by Adding Intelligence to Media

## Introduction

The explosion of desktop computing, the Internet, intranets, and e-mail have permanently changed how organizations operate while simultaneously creating new problems on a massive scale. Despite the many benefits of advanced technologies, organizations of all sizes now face having to manage an exponentially growing number of files, which can lead to lost productivity and efficiency. Business today demands that operating systems, productivity applications, and file formats manage millions of files created by thousands of individuals, workgroups, suppliers, vendors, and organizations. But the systems, applications, and formats were simply not designed to manage such a high volume of files from so many diverse sources. And this trend is predicted to accelerate.

The lack of a universal file-management structure is causing serious legal and productivity issues that affect business profitability. These include:

- Graphics such as logos, which must exist in numerous forms and file formats, are frequently misused. This undermines both branding efforts and copyright protection.

- Licensed and copyrighted images often do not receive proper credits, potentially creating breach-of-contract issues.

- Multiple revisions of the same document—created with individualized naming conventions—make collaboration among individuals and workgroups difficult.

- Specially designed systems, often developed as well as implemented by individuals or workgroups, are often unusable by others when the developer leaves the organization and inhibit business growth and expansion.

- Proprietary management systems lack the flexibility to work cost-effectively with legacy systems, evolve to meet changing organizational needs, and adapt to unforeseen technology changes.

This growing chaos affects many departments, including marketing, graphic arts, sales, product management, engineering, and information technology. IT departments in particular are hard pressed to continually find new ways to leverage years of technology investments with solutions that work with existing hardware, software, and training, while minimizing future expenses. Every day, as the number of files grows, the problem compounds. Finding solutions has become so daunting that some organizations have simply stopped trying.

Business needs a more "intelligent" system: a file management solution that can handle huge volumes of unstructured data and metadata (information that describes the content, usage, authors, and other details about digital media files) shared by individuals across multiple departments and workgroups. Files need to be more "self-aware," meaning they must contain more information about their contents. The more information a file contains about its contents, the more various users and applications can make use of the file in productivity and tracking.

**XMP**™
Adding Intelligence to Media

## Understanding the Problem in Order to Find a Solution

In order to evaluate possible solutions, it's important to understand the nature of organizational data. Experts classify it as either "structured" or "unstructured." Structured data is data that is "tagged" using a predetermined set of instructions. A general ledger is a common form of structured data: checks in a ledger each have a number, a date, a payee, an amount, and a notation indicating the purpose. While a significant amount of time and energy are required to organize this data, the advantages of using structured data in a general ledger are clear: An organization can manage its cash flow and ensure that legal obligations such as quarterly reporting are met. More importantly, structured data can be accessed more quickly to make timely, critical decisions.

While all organizations recognize the value of maintaining structured data in a general ledger, only an estimated 10-20% of an organization's overall data is structured. The remaining 80-90% is unstructured data: memos, e-mails, Web pages, logos, spreadsheets, reports, charts, graphs, digital photos, newsletters, plans, Web sites, manuals, and so on. This massive, chaotic volume of data represents a significant investment of time and money, and yet it is nearly impossible to tap into on an organizational level.

## Approaches to the Problem

There are three options for organizations that are drowning in an explosion of documents: do nothing, implement a proprietary solution, or adopt an open standard.

**Doing nothing.** For most organizations, this is simply not an option. The need to stay competitive, the responsibility to avoid legal pitfalls, and the obligation to maximize return on investment in people, systems, and operations demand that action be taken.

**Implementing a proprietary solution.** A number of proprietary solutions are on the market, many of them aimed at meeting the demands of a particular industry or job function. While many are quite good, all suffer from the same constraints. They are:

• Expensive to license, incorporate into existing systems, maintain, and update.

• Incompatible with other proprietary systems.

• Informative about files within the system only.

• Limited in their ability to change file formats.

• Limited in functionality and customizability.

• Counter-intuitive for end users because solutions are not contained within applications.

Given these impediments, many organizations find the return on investment of proprietary systems limits their adoption.

**Creating an open framework for data management: Introducing Adobe® XMP.** As a publisher of industry-leading graphics, publishing, and video software, Adobe Systems Inc., helped set off the computing revolution that caused the explosive growth in documents. In the course of constantly improving the ways people communicate, Adobe has focused extensive resources on providing a flexible framework to solve the data organization problem and is now fully committed to Adobe Extensible Metadata Platform (XMP), a new standard that can address forthcoming data management needs.

## Getting a Handle on Metadata

Adobe XMP is an enabling technology that is built into current and future releases of Adobe software such as Adobe Acrobat®, Photoshop®, Illustrator®, GoLive®, FrameMaker®, and InDesign®. It is available free from the Adobe Web site, www.adobe.com/products/xmp. Application developers, file management system administrators, and information technology department staff can easily download the Adobe XMP software development kit and start using the technology immediately.

Adobe XMP provides a standardized place to capture and manage metadata. In essence, metadata is the most distilled, relevant information in a document. Adobe XMP provides a flexible way to store and retrieve metadata, so that vast quantities of files can be easily organized in ways most valuable to the organization.

By streamlining the process of capturing and managing data for end users and developers, Adobe XMP turns the daunting process of managing massive numbers of files into a routine. By putting more knowledge—metadata—in individual files, Adobe XMP creates a more intelligent system. The knowledge a file carries is preserved even as it changes into other formats, and files have room to learn: to add more data.

## Open Source License and Standards Compliance

To encourage widespread adoption and use, Adobe XMP is available free via open source licensing to all developers and end users, and it can be incorporated into nearly any application or file management system free of charge. This ensures a better return on investment from development efforts.

Adobe XMP can be easily customized and extended by application developers and information technology departments to meet their specific needs. It is publicly documented, based on W3C standards, and expressed in XML (Extensible Markup Language). Public documentation ensures that technical staff will always have access to the knowledge needed to implement or customize Adobe XMP. Compliance with W3C standards means that Adobe XMP will be relevant for years to come because it follows guidelines set by industry experts. Similarly, by adhering to XML, which is a universal language for expressing data, Adobe XMP is easily read by any application that is XML compliant.

Adobe XMP can be integrated easily with proprietary file management systems, leveraging the value of existing technologies by using XML structures as an interchange format between systems. The inherent flexibility of Adobe XMP allows software publishers and companies to easily customize the organization of captured data to their own specific needs and to interrelate data from different systems. For example, a "Creator" data tag in a legacy system can be mapped to an "Author" tag in a new system, thus ensuring that future data types and organizations can be easily accommodated.

Adobe XMP–enabled applications can save metadata within the file itself, preserving the metadata even when the file is converted from one format to another. A stock photography company, for example, can incorporate copyright data into a digital photograph, e-mail the photo to a client who can add internal tracking codes, and then convert the picture into Web- and printer-friendly formats and send the latter to a service bureau for output, all without losing any metadata.

## Adopting XMP in the Enterprise

As a flexible platform for structuring data, Adobe XMP has applications in a wide range of industries, for companies ranging from multinational conglomerates to the single-employee businesses. It can be customized to solve file management issues specific to an industry, while maintaining the flexibility to work with emerging technologies. Consider these examples:

• A major aerospace company is using Adobe XMP to track thousands of electronic documents related to the design, testing, manufacture, sale, and servicing of its aircraft. Employees and customers around the world can search for the information they need, wherever it is and in whatever form it takes. The management system evolves as business needs grow.

• A consumer products company, with dozens of brands and hundreds of products, implements Adobe XMP to ensure that none of its copyrighted images, logos, and videos are used on television, on radio, in print, or on the Internet in any way that might compromise decades of intellectual capital investment.

## Conclusion: A Powerful Solution

Adobe XMP was designed from the beginning to enable developers to create powerful file management systems and to encourage end users to use those systems to manage the explosion of files. Through its free open source license and standards-compliant technology, Adobe XMP meets developers' needs to leverage investments in legacy systems, while keeping their options open for future developments. In particular, it allows them to tie together existing systems that use XML, which they have already adopted. By storing data within common file formats, Adobe XMP eliminates many of the drawbacks of proprietary systems. And, finally, the implementation of Adobe XMP in Adobe authoring products provides a progressive means to capture data and serves as a model for other developers.

The explosion of data that is swamping large and small organizations is a significant and growing problem, with serious competitive, productivity, technical, and legal implications. Adobe XMP is the tool that enables organizations to build their own solutions. By adding intelligence to media, Adobe XMP allows developers and organizations to take control of their data before it overwhelms them.

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