Executive Summary

Massive volumes of business data—much of it unstructured—clog the infrastructures of corporations and government agencies, reducing their ability to profit from intellectual capital that ideally should be shared throughout the organization. As IT infrastructures grow more complex, many organizations are investigating ways to efficiently convey business information to staff members and customers and to harness business value from the volume of content that originates from proprietary applications and productivity tools. Given this challenge, strategists and planners are motivated to implement solutions that unlock the benefits of information stored in Enterprise Content Management (ECM) systems, generated by other management systems, and produced by a variety of applications.

In theory, when documents exist in digital form they are easier to manage. However, many obstacles impede access to and productive use of the content in electronic documents, including access to legacy formats, application of mandatory stamps, compliance issues associated with regulatory mandates, and quick location of vital information without adequate search tools. Digital content exists and is stored in a variety of file formats. Automated conversion of content to a standardized format can play an essential role in creating an “information commons”—a centralized process that breaks down the barriers between systems, applications, and users.

By implementing standardized, centralized, workflow-based rendering processes, organizations can reduce manual processes, improve organizational compliance, lower overall costs, and ultimately gain more value from their intellectual capital.

These factors have led many top-tier enterprises and organizations in the direction of automated document conversion. This paper defines the benefits, use cases, and criteria of an automated solution and builds a case for capitalizing on the value of business data through Advanced Rendering of diverse documents to a common format that can be easily distributed, searched, shared, and viewed.
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The Business Value of Content

Often in ECM discussions, the focus is on technical attributes such as server sizing, cloud migration, and taxonomy. Yet at the end user level, the primary focus is on the underlying content, which is often relegated to knowledge management, or business unit leaders. The complex collection of tools, formats, and information systems that characterizes the working environment of most organizations presents a barrier to communication—both in the office and with customers. In Content Will Always be King by Frost & Sullivan, the value of automation is emphasized:

Knowledge workers are constantly challenged with being able to communicate with internal and external stakeholders. Selecting the most relevant channels can aid a company in cutting through the clutter and delivering clearer, more concise, and personalized information to customers, employees, partners, etc. However, for many companies the barrier to publishing to multiple channels is the resource requirements associated with manually repurposing and formatting content for different formats and devices. This barrier is dramatically reduced when publishing processes are automated. Since dynamic publishing enables a company to manage content at the source and independent of final format, they can “Create Once and Publish to Many” channels faster, quicker, and with greater information quality.¹

WHY AUTOMATE?

The decision to automate Advanced Rendering to create a common, shared format often takes place after organizations have been struggling for some time with the challenge of multiple, disparate systems and non-interoperable management applications. Because the documents and systems affected may encompass many departments, decision-makers at every level in the organization need to discuss the architectural considerations and understand the business value to be gained. Typically, organizations decide to automate document conversion for these reasons:

• To make business processes more effective and increase workgroup productivity
• To increase the speed of capturing/disseminating the intellectual capital and document outputs of various services across workgroups, departments, and divisions
• To eliminate duplicate processes and lower IT expenses
• To systematically store information needed to meet regulatory mandates
• To provide timely, automated document generation that improves collaboration with partners, workgroups, and public agencies

• To improve the consistency of scheduled document processes and to standardize the output more effectively
• To minimize the risks of human error and inattention by performing necessary document processes on a predictable, reliable basis
• To reduce labor intensive processes, thereby freeing knowledge workers to focus on higher value deliverables

These business values and strategic opportunities apply broadly to many industry sectors—from engineering to life sciences to financial services, and more.

REAL-WORLD BENEFITS FROM AUTOMATED DOCUMENT CONVERSION

Areas where automated document transformation can substantially reduce the time and expense of document preparation, compiling, and processing include the following:
• Archiving records for government compliance or routine business activities
• Managing contract paperwork and forms
• Producing searchable images from CAD systems, infrastructure plans, architectural drawings, and other large-format visual materials
• Creating RFP (Request for Proposal) documents for submission
• Publishing customer statements for distribution and archiving
• Assembling reports and briefing books
• Distributing operating procedures, employee handbooks, sales and marketing materials, health insurance guidelines, and similar content for corporations and agencies

Understanding Automated Document Conversion

Depending on the solution and its implementation, automated document conversion can involve a number of technologies and approaches, but the key characteristics that define it at the enterprise level are as follows:
• Automated processes are configurable to suit enterprise requirements, using a rules engine, data definition document, or scripted conditional logic flow to control how the conversion is performed
• Automation support is provided by a reliable architecture designed for high availability
• Metadata is used to eliminate the need for human intervention and to provide the intelligence to guide the conversion process from beginning to end.
• Centralized management capabilities are available to configure, monitor, troubleshoot, and analyze the operations performed across the system
• Flexible interoperability extends across the platforms and applications in use by the enterprise
Automated document conversion has the functionality to scale dynamically to high operational levels and to perform load balancing to take advantage of available servers and processor cores. These characteristics are not inclusive, but they are generally present in solutions developed to support enterprise requirements.

ORGANIZATIONAL DRIVERS OF AUTOMATION

Manual conversion processes have built-in weaknesses, including the difficulty and time required to individually assemble collections of related materials and content from a variety of systems, as well as the ongoing potential for human error. Left to individual users working on desktop systems, conversion tasks are rarely performed consistently or reliably. In comparison, a well-designed, automated conversion system can dynamically scale to the high volumes encountered in enterprise environments, supporting thousands of document conversions a day, without human intervention.

Several kinds of content can be consolidated and processed within an automated framework. ECM systems are excellent candidates for automated operations of this type, but output from other kinds of management systems can be handled effectively as well, including systems for Customer Relationship Management (CRM), Product Lifecycle Management (PLM), and Enterprise Resource Planning (ERP). In all instances, output from the systems can be converted to a standard format or can be used to create metadata to identify or catalog related documents.

Output from desktop applications—such as word processors, spreadsheet tools, and presentation packages—is prone to error and inconsistency when handled outside of an automated conversion process, even though this kind of information can be vital to an organization’s operations. Email applications and shared work environments may include some conversion features and functionality, but typically these capabilities are not automated. When evaluating solutions for automating conversions of documents, make it a point to clearly understand what systems and applications can be included in the conversion process and what flexibility is offered for tailoring the output to particular corporate requirements. Dynamic, flexible conversion is a key differentiator between enterprise-capable solutions and less effective tools.

ELIMINATING THE COMPLEXITY FROM DOCUMENT HANDLING

As shown in the “Before” example in Figure 1, in a non-automated workflow, documents need to be collected and assembled from different systems and applications—often as part of a manual process—and then go through an equally tedious series of steps to store and archive the output. An automated workflow—illustrated in the “After” example—directly captures documents that need to be converted from the ECM system, productivity applications, or other management systems; combines and assembles the output in a portable document format (PDF) so that system-wide searching is enabled, and then stores the documents in a central repository, available for organization-wide access.
Advanced systems for automated document conversion are able to make enhancements, updates, or modifications to documents based on conditional rules. The more sophisticated available rule engines can work with embedded metadata to improve search capabilities, structure information output to help ensure regulatory compliance, and dynamically create and process a collection of documents to mark or modify specific content.

Enterprises that routinely deal with large-scale document conversions naturally gravitate to automated document conversion to streamline IT operations, save time and money, and achieve the dependability that is required for regulatory compliance.

Key Features of Enterprise Solutions for Automatic Document Conversion

Organizations looking to deploy automated content conversion need to ensure that the solution has the following key attributes:

**Integrated workflow automation:** Fluid, automated integration with existing business applications, management systems, and decision-making tools results in improved efficiency, cost savings, and better business productivity.

**Centralized management of document transformation:** Through flexible, easy-to-configure rules based on document metadata, transformations can be managed from a single point and then automatically converted into the precise format and structure needed for compliance,
legal requirements, long-term archiving, business recordkeeping, or version control. Monitoring and reporting capabilities keep administrators apprised of the system health at all times.

**Automatic collection and storage of document output from management systems:** The variety of enterprise management systems (such as ECM, ERP, and CRM) creates a challenge for organizations that need to ensure consistency and precise output management of the content of these systems. Adlib solutions provide automated, fine-grained handling of content from leading management systems in a repeatable and reliable manner, making information stored in these systems more available and valuable to the organization.

**Automatic application of updates and standards to documents:** Template information, address information, or reference data that pertains to a document can be structured and automatically converted based on metadata. Rendered PDFs for contracts, customer information, and reference material can be updated quickly to correspond with the most current information available.

**Workflow driven dynamically by metadata and a rules engine:** Automated workflow can be configured to adapt precisely to the business processes in use by setting rules and conditions to control document additions and modifications. Metadata can be used flexibly (from inside the ECM system or individual document) to dynamically create the results required in every business case.

## Advanced Rendering and Automation with Adlib

In recent years, many industry sectors have adopted the PDF as the most effective means for converting documents from different systems and applications to a standardized, accessible file format. Adlib’s expertise in high-volume PDF output automation runs deep, starting with an enterprise-caliber architecture that was deliberately developed to better support large-scale document transformation and automated workflow processes. Adlib can help automate include the following document conversion functions:

- Creation of document sets and collections, as configured through the management console
- Flexible handling of markups that indicate redaction processes in legal documents, contracts, and design documents
- Document enhancements to support specialized applications
- File size reduction and bandwidth optimization through thumbnail display and PDF compression (eliminating duplicate fonts, artwork, images, and boilerplate content)
- Selectable compression of embedded images to suit organizational requirements

Adlib’s document rendering capabilities go far beyond simple document conversion to encompass a number of sophisticated Advanced Rendering techniques. Elements of documents that are
sometimes poorly handled by lesser solutions (including image compression, hyperlinks, font substitution, reflow of content, content listings, page numbering, and entries contained in forms) are reproduced with precision and fidelity by the Adlib solutions as part of a workflow.

Adlib is committed to delivering exceptional solutions for automated Advanced Rendering. It specializes in integrating solutions deeply into the business processes of each organization to automate each stage of document conversion: ingesting content, creating collections, enhancing search capabilities, collaborating, and storing. Customers’ document conversion automation deployments have eliminated manual intensive processes, reduced time to market, and increased organizational compliance.

Adlib solutions feature an architecture optimized for maximum interoperability with native systems and equipped for high-volume document handling. These solutions are well suited for automating content conversion in data-intensive, enterprise-caliber operations in the most demanding environments.
Adlib is the leading expert in document-to-PDF conversion, enabling the world's largest organizations to improve the efficiency, quality and control of document-intensive business processes to optimize productivity, mitigate risk and reduce costs. As the trusted technology provider to Global 2000 organizations, Adlib brings over a decade of expertise supporting more than 5,000 international companies and government organizations to help them reduce the financial exposure and risk of non-compliance with regulatory agencies; reduce IT costs by centralizing document conversion; and leverage document-to-PDF as a shared service across the enterprise. Adlib is a proud Microsoft Certified Gold Partner and a member of the PDF/A Competence Center. For more information, visit www.adlibsoftware.com.