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WHITE PAPER

Enterprise Content Management (ECM) Output Management

How to Meet the Output Requirements of Today's Communication-Driven Enterprises

wwww.crawfordtech.com sales@crawfordtech.com

Executive Summary

Enterprise Content Management (ECM) systems are important information management tools that bring a variety of vital business process improvements. However, unless properly configured, they are generally under-equipped to meet the output requirements of today's communication-driven enterprises. Whether it's for the delivery of internal or external communications, or to facilitate internal workflow and business process, ECM output management requires an enhanced infrastructure platform to provide organizations with the full and extended the benefits of content management and automation.

ECM Trends

For years the main role of Enterprise Content Management systems has been as a repository of information. Lately that view has changed. Companies are now using ECM systems as business process management platforms enabled by extensible tool sets. A growing ecosystem of ECM platform vendors are providing the essential solutions required to perform core business process management tasks. These primary functions can be thought of as capture, process and output. The Association for Information and Image Management (AIIM), considered the owner of the definition of the term ECM, defines it as:

"A set of tools and methods that allows an organization to obtain, organize, store and deliver information crucial to its operation. It can be broken down into five major components: capture, manage, store, preserve and deliver content. The fundemental objectives of ECM are to streamline access, eliminate bottlenecks, optimize security maintain integrity and minimize overhead."

ECM at the Crossroads

To date, significant effort has been focused on data capture. ECM systems have evolved from simple solutions for basic scanning into sophisticated and expensive systems for enterprise wide document automation. Evolving from early generation image management systems, documents in formats such as TIFF and JPEG are the core of ECM systems. Recently, great strides have been made to put new types of data into ECM repositories. All of the Microsoft Office formats now reside in most data stores; this covers HTML and text formats as well.

Output is the Weak Link of ECM

ECM systems excel at managing, storing and preserving information, but outputting that information has always been a weak link. All ECM platforms provide the ability to search and view data, but most do not provide easy or efficient ways to output the documents. Users are required to print retrieved results one document at a time in its native application. This takes time, often additional technical support, and consumes end user licenses for each different format's applications.

Some ECM platforms have the ability to output aggregated results, but as a general rule the results are limited to a simple .zip file with no capability for the user to perform value-added functionality such as sorting, watermarking, annotating or indexing the

contents. In the end, even with the most advanced ECM systems, most companies suffer from lowered operational productivity and effectiveness due to this missing output functionality.

Analytics + Output Management = Solution for the Unstructured Data Challenge

Big data and analytics are subjects that top the business trends today, and for good reason. Nearly all businesses and government agencies are driven by data; the key is accessing and leveraging the everyday value. According to consulting company Capgemini, about 80% of an organization's content is unstructured, which means it's not sitting in databases. What's more, most of that unstructured content is in the form of documents. This presents a challenge for companies looking to perform more deep-dive analytics because mining the information contained in unstructured documents is often difficult and costly. While advanced search functions address the need to find the documents contained in ECM systems, most systems lack advanced output management capabilities needed to complete the information management lifecycle. Companies need new capabilities and approaches that bring the output capability of ECM platforms into balance with the powerful search capabilities that already exist.

Multiple Repositories

Most enterprise organizations have multiple repositories of information. According to a recent AIIM survey, 75% of enterprises have more than one repository and 26% have four or more. The resulting impact of having multiple repositories in an enterprise, often from multiple vendors, is that knowledge workers will in the course of a search naturally accumulate results that span more than one repository. Since each ECM has a separate user interface, the knowledge worker then needs separate tool to output their search results - as organized, edited, annotated and watermarked in an efficient way.

Toolkits are not the Answer

Noted ECM columnist, Lee Dallas, points out another interesting ECM trend1: "[There] is a swing of the pendulum away from internal IT developed ECM applications towards more turnkey solutions," says Dallas. "Put simply, people want to buy the Ferris wheel, not the erector set."

The industry trend is away from patchwork toolkits toward complete integrated solutions. Rick Devanuti, President, Information Intelligence Group, EMC Corporation, reinforces this notion: "When I talk with CIO's, the common theme is 'Now!' as in, 'I need a solution for (fill in the blank)," says Devanuti. "Rapid time to value is the leading driver. And if IT doesn't respond fast enough the business will look to buy a cloud-based solution, cutting IT out until there is a problem." As a result, businesses today do not want to wait for, or pay for, the lifecycle costs for IT to build a custom coded or toolkit based solution.

Role of Output Management in ECM

Output is one of the primary functions of ECM that touches customers and users directly. External customers are the recipients of external communications, including those generated from ECM content. Internal customers are the users and knowledge workers that analyze and process ECM content. Inter-process communications are those that require ECM output to be directed from one workflow process to the next. When managed effectively, all three of these output roles play an equally important part in delivering economic value.

External Communications

Output management is the process whereby ECM content turns into correspondence to external customers. This is justification in itself to equip ECM platforms with the highest level of output management functionality available. These business transactions are not singular events; they are cumulative, cyclical interactions with high value assets. For that reason, having efficient and effective output management capabilities is a must. For example, one cost effective way to record and archive customer transactions on a monthly basis is by loading transactional data from print files into an ECM system. This enables a customer service representative to be significantly more productive since the CSR can easily view the data that is aligned to the customer view of the document. With enhanced ECM output management the agent can quickly send a cover letter with annotated copies of the correlating documents along with the

Internal Customers

ECM output is important for internal 'customers' as well. For any key business process workflow, the originating knowledge worker has to be sure that each step in the process documented and released to the next workflow step. It is critical that the documentation of completion of this work step is tracked, auditable, and automated to ensure compliance. Case Management is one good example where there is a need to output a significant collection of documents. ECMs need to be

extended by a tool that can sort the documents, add cover sheets, provide a table of contents, index the documents into a manifest, append page numbers spanning the collection, and provide other functions that will increase the productivity of the professionals reviewing the case documents.

Inter-Process Communication

Inter-process communication is fundamental to Enterprise Content Management. ECM base functions need to be extended to include a way to output content with greater functionality than viewers can provide such as via APIs or the Restful protocol. These inter-process communication output management extensions need to handle the functionalities like annotation, indexing and audit logging in order to properly address the needs of higher order Business Process Management.

Information Governance

One critical item that is often overlooked is that ECM output often needs to be evaluated by the organization's Information Governance rules as to whether it constitutes a unique business record. Knowledge workers are paid to add value; professional case workers reviewing cases make annotations which impact business outcomes. In all but trivial use cases, the work product will meet the criteria for retention for Information Governance compliance purposes. ECMs need an enhanced output management capability to get this work product committed to an appropriate archive, generally recommitted to one of the repositories involved in the original retrieval.

The Solution

Crawford Technologies' Riptide® provides the ability to output content from Enterprise Content Management platforms and solutions. It is a web services application architected to collect and package ECM content from any variety of disparate repositories and then output that content in standard print and online delivery formats. Riptide support high volumes of documents and seamlessly and easily integrates into existing multi-vendor and multi-repository enterprise ECM environments.

The solution works with most enterprise ECM repositories and supports office, print and imaging file types. Output is multi-channel so it can be directed to multiple devices, in various formats, and for multiple delivery options – print, online, e-mail, fax, and much more.

Riptide Advantages

1. Output multiple disparate documents in batch or real time.
2. Pull content from different ECM repositories.
3. Distribute in multiple formats and for multiple destinations.
4. Track output delivery by user and job.
5. Eliminate bottlenecks associated with ECM output.

Riptide collects disparate documents from ECM systems and delivers those documents for output in print, fax, e-mail, PDF and more. Users no longer need to open each file in the originating application to output. You can simply select the documents needed within the Riptide GUI – no matter what format or repository – and then with a mouse-click output in multiple formats for multiple destinations. Riptide works with any document type in nearly any ECM system, and with any variety of output formats. In short: Riptide makes it easy to find the documents you need and then output for print, fax, e-mail and more.

Automate Across Vertical Applications

Riptide automates customer communications across all vertical applications. Using the typical CSR engagement from above as an example, at the end of the call, the CSR clicks

the ‘Riptide’ button on their main screen and automatically the annotation the CSR drafted is pasted into the cover letter form letter (which can also serve as a separator sheet), the open documents are spooled to a server queue and another separator sheet (with a boilerplate disclosure) is added to the back of the packet. The packet is ready to print and the CSR is freed for their next call in seconds.

The customer experience is enhanced when, instead of disjointed documents, she receives a finished packet containing a cover letter annotated with the CSR’s explanation of the resolution, the explanatory and original documents sorted in logical order, and a standard disclaimer. Simultaneously, a copy of this packet is committed to the records management archive. Total CSR time before taking their next call: 15 seconds.

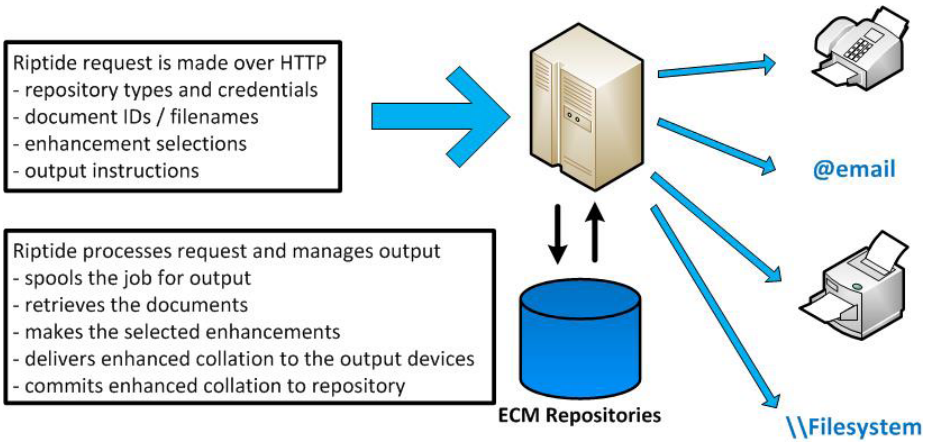
Case Management Solved

Case management problems are solved with Riptide. Functionality extensions to basic ECM capabilities include Tables of Contents, manifests, audit logs, annotations, document sorting, and watermarks that can be individualized by destination. Cases can be automatically delivered to any network connected interoffice destination.

Riptide handles high level output management functionality when integrated into inter-process communications. When content is in motion from one workflow process to another, it is important that output management control information governs the interaction. Riptide has the capability to add valuable content attributes to enhance inter- process communications. Riptide provides systems integrators with options as it can be deployed with a web interface, integrated with APIs, or installed via plugins.

Server Side Advantages

Riptide is a server side output management solution, which has important advantages. The server side deployment, shown in Figure 1, spools content packets to a server where they are retained as needed. This provides increased security, allows for load balancing, permits reprinting, and allows recovery from normal events such as printer hangs without user involvement.



Multi-Vendor, Multi-Format Value

Riptide works with multiple repositories simultaneously including those from multiple vendors. These systems come from a variety of vendors including Alfresco, EMC, HP Autonomy, Hyland Software, Microsoft, OpenText, Oracle and Xerox. The largest ECM vendor, IBM, offers multiple platforms including FileNet® Content Manager, aka P8; Content Manager OnDemand, aka CMOD, and IBM Content Manager Enterprise Edition, aka CM8. Riptide works natively with the enterprise ECMs from EMC and IBM and is integrated with IBM Content Navigator, significantly extending its output capability.

In addition, Riptide handles multiple, disparate document formats adroitly. Since ECMs are being loaded with more and more unstructured content, Riptide is capable of rendering the full spectrum of Microsoft Office formats, image formats, HTML, text, and PDF formats including PDF/A, the standard for archived documents. In addition, Riptide can also be configured to handle transactional document formats such as AFP, Xerox metacode, PCL and PostScript.

Full Spectrum of Output

Riptide provides a powerful extension to the output management capability of the any ECM. A fundamental aspect of output management is providing control with flexibility across a spectrum of outputs. Riptide delivers this with an architected approach. Standardized output formats can be extended through an extensive set of document transforms. Where device drivers can support it, Riptide can provide finishing support allowing the ECM user to specify 'job ticket' functions that are passed through to the output device.

Output Options

Riptide gives you multiple output options:

- Spool to any print driver
- Output to any file folder designation with full network security
- Send content as an email attachment
- Fully integrated with RightFax server for outbound fax capability
- Output on physical media such as DVD or CD-ROM.
- The standard open output format is compatible with mobile devices.

Crawford Technologies actively supports Multi-Channel Customer Communications (MC3) which is the process by which enterprises deliver content to customers in whatever format and over whatever channel the customer prefers. This needs to be done dynamically on a per customer basis using customer preference management. As a result, Riptide has been engineered to with the ability to output content in whatever format is required.

Open Architecture

Riptide's open standards architecture allows retrieved documents to be presented to a customer over their preferred channel. Crawford Technologies has long been a supporter of the open architecture approach and Riptide continues this philosophy. One example is the extension of the Riptide architecture to support the OASIS CMIS interface. This allows Riptide to support multiple repositories beyond IBM and EMC. Riptide was developed as a web services application built on the RESTful protocol making the extension to support the CMIS standard specification straightforward.

Business Benefits

Riptide has multiple modes of deployment each with identifiable sets of benefits. The key benefit, common to all modes, is automating the assembly of documents of disparate formats from multiple repositories and submitting them to designated outputs with enhanced attributes. ECMs do not natively possess the ability to output documents with this level of control and functionality. As a result, the need has developed for extended capabilities to accomplish these tasks. Riptide is unique as it is the sole turnkey tool in the ECM platform infrastructure providing this extended capability.

Direct labor savings

Riptide increases the productivity of highly compensated staff handling ECM platform tasks by automating the backend processing of the workflow. As a result, companies see direct labor savings by freeing knowledge workers to complete the information-related tasks associated with one set of documents and efficiently move on to the next task in their work queue. The retention feature of the Riptide server side implementation further reduces labor as printer errors do not require users to resubmit documents for printing. The server side implementation also does not require the purchase and maintenance of end user licenses for document applications nor count against them where they already exist for other purposes.

Reduction in errors

Riptide reduces the possibility of errors by automating tasks and providing an intuitive user interface. When users are making decisions, there is always a probability of user introduced error. This is of special concern in regulated environments and applications like case management where significant financial stakes hinge on having all relevant documents available for review. A missing document could have costly downstream consequences.

Audit and Tracking

Riptide's ability to track document bundles is instrumental in providing an enterprise class solution. This tracking capability even allows the finished output package to be committed into one of the enterprise repositories as a proof of the exact package that was output. This can be instrumental if there are ever any questions around whether a particular document was included in the package, potentially saving organization huge costs of proving compiance.

End User Application Licenses

Riptide has the built-in capability to read and create output from files of many formats. As a result, organizations are no longer compelled to install the native applications for each of those formats on all of their users' computers. This helps reduce and can avoid the licensing and deployment costs for those applications.

Best Practices

Riptide gives users more ECM output options at their fingertips. When Riptide is deployed as an inter-process communications enabler, 'best practices' are programmed into its control parameters. As a result, users will be able to make 'best practices' decisions as to which output channel to use, thus increasing the operational efficiency of the enterprise. When administrative tasks are automated, knowledge workers and professional reviewers of case file material can focus more effectively on the meaningful aspects of the workflow which drive revenue. Business process events trigger the Riptide output management functionality creating enhanced and more cost effective interchanges.

Riptide has an intuitive user interface that is a valuable tool that increases knowledge workers' productivity. The shopping cart motif results in a 'no learning curve' deployment that brings about a very positive user experience. The full power of Riptide is a few clicks away when needed; users click once on the Riptide cart icon to output the documents they have assembled using the default parameters.

Conclusion

Enterprise Content Management systems have evolved from special purpose systems, namely image and document management repositories, to become general purpose Business Process Management platforms. Most of today's off-the-shelf ECMs are under-equipped to meet the output management requirements of modern communication-centric enterprises.

Riptide changes all that by easing and automating the output of content from ECM systems in standard print and online delivery formats. Output is multi-channel so it can be directed to multiple devices, in various formats, and for multiple delivery optionsvia print, online, e-mail, fax, and much more. Built as a J2EE Web application, Riptide receives instructions from any content management system (such as IBM FileNet Content Navigator or EMC/ Documentum's WebTop) or custom interface. Riptide pulls the requested content from the repository and transforms the content to the desired output format.

With its extended capabilities for multi-document bundle creation such as Table of Contents creation, stamping, page numbering and watermarks, Riptide serves as an application extension, eliminating the need for a lot of custom programming. Its multi-repository support as well as its audit and tracking capabilities make Riptide an ideal enterprise-class ECM document management extension.

Riptide has flexibility as to how it can be deployed for inter-process applications. Its server side, web services application design, based on an open architecture approach complete with APIs and CMIS compatibility, provides systems integrators all the latitude they require for easy implementation.

CrawfordTech Solutions

Crawford Technologies develops software and solutions to help enterprises optimize and improve the secure and accessible delivery, storage and presentment of their customer communications.

With over 1,800 customers on six continents, CrawfordTech solutions and know-how enable the largest banks, insurers, healthcare providers, utilities and print services companies to use their existing technologies, documents and data in new ways. We help them navigate the challenges in leveraging legacy applications in the platforms and applications of the future.

CrawfordTech's products, services and domain expertise reside at the nexus of content, data, and output management and are essential components of our customers' digital transformation, output management and document accessibility strategies.