Transforming the Enterprise by Automating Document-Centric Processes

Authors

Randy Dazo

Omri Duek

Mike Maziarka

Jon Reardon

Abstract

A plethora of companies are still employing completely ad hoc, document-centric processes, many of which are central to day-to-day operations. To improve business efficiency and agility and to address compliance and risk mitigation requirements, companies must automate these processes and provide an integrated enterprise platform for managing the underlying content. IBM's Active Content capability provides the foundation for document-centric process automation, and this report describes its application and the benefits in context of IBM FileNet Content Manager and IBM FileNet Business Process Manager.

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Introduction

A plethora of companies are still employing completely ad hoc, document-centric processes, many of which are central to day-to-day operations. These processes relate to customer acquisition and communication, marketing collateral development, and document-intensive HR workflows. Of course, there are many other business processes that are reliant on documents – or, more abstractly, content – as their focal point. In most cases, the ad hoc processing and routing of this content is a significant bottleneck to increased organizational efficiency and agility.

Automating these document-centric processes affords businesses several benefits:

- Enhanced corporate agility and responsiveness

- Cost reduction / increased productivity

- Improved process accuracy and quality

- Clear audit trails of processes and content

- Compliance with regulations and best practices

Automating document-centric processes is closely related to the larger organizational goals of adapting to a faster pace of business as well as to competitive shifts. Process modeling, monitoring, and optimization tools employed in conjunction with automation solutions can increase efficiency and speed a company's response to market changes.

Mentioned briefly above, the connection between process automation and risk mitigation (compliance) deserves special attention. As much of the information involved in document-centric processes is transaction-oriented (e.g., invoices, customer forms), care must be taken to ensure data integrity and privacy throughout the entire process. This requirement also applies to sensitive but not necessarily transaction-oriented documents: personnel records, for example, must be secured from prying, unauthorized eyes. In context of expansive regulations and corporate governance initiatives, organizations must address risk mitigation and compliance requirements when evaluating and implementing solutions for process automation.

Finally, document-centric process automation can play a significant role in improving an organization's customer service efforts. As forms, invoices, statements, and other customer communication documents account for a substantial portion of customer interactions, optimizing and automating the processes associated with these documents can drastically improve the quality of relationships with customers.

Nevertheless, undertaking such an initiative requires an understanding of the intrinsic relationship between content and process, and with respect to technology and best practices, the relationship between Content Management (CM) and Business Process Management (BPM) as part of a holistic Enterprise Content Management (ECM) strategy. Successful automation of document-centric processes combines practices and technology from both arenas, and vendors with solid experience in CM *and* BPM should be sought out. One vendor that is addressing this challenge in a cohesive manner is IBM, leveraging a three-pillar technology approach that includes Content Management, BPM, and Compliance.

The Impact of Ad Hoc Document Handling

InfoTrends has published several reports discussing the reliance of businesses on documents for retaining and communicating information that is crucial to corresponding business processes. We call these document-centric processes[1], and examples include the following:

- Form-based processes such as insurance claims and loan applications

- Customer-facing processes such as marketing communications and customer service interactions

- Transactional processes that involve documents such as statements, bills, and invoices

- Internal processes such as new-hire workflows and collaborative document review and approval

Although some organizations have taken steps toward digitizing documents, the ad hoc handling and processing of the information contained within them often leads to substantial process latencies and deficiencies. These bottlenecks can primarily be attributed to employees that are involved with managing the content *and* the proper workflow:

- Some processes span multiple departments and business applications: employees must gather relevant content that exists across the many departmental silos of an organization.

- In many cases, processes require multiple internal and third-party participants for completion: employees must direct the flow of content and assign responsibilities to each participant.

- Finally, process decision trees may involve several variable and evolving considerations: employees must understand these complex workflows and have the ability to move documents through a process appropriately.

The amount of time that employees allocate to managing process is substantial. Moreover, an ad hoc handling process inevitably introduces human error. As a result, ad hoc document-centric processes are subject to several inefficiencies:

- More employee resources are required to manage, track, and drive the completion of a process.

- Process consistency and quality are subject to the discretion of individual employees.

- Ad hoc handling decreases an organization's ability to effectively audit processes, which can be detrimental to risk mitigation and compliance initiatives.

By identifying document-centric processes, managing them under a consistent framework, and automating them when appropriate, organizations can alleviate these inefficiencies.

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[1] Where the definition of the 'document' may be ambiguous – consider XML streams, for example – the phrase 'content-centric processes' is more appropriate. These workflows rely on content of various forms to retain and communicate crucial information for process completion.

The Staying Power of Paper

Many businesses are reliant on the outside world for the submission of information. Despite the push toward electronic documents, much of this information – over which organizations have little or no control – resides in paper form.

Small suppliers and partners who have not made the leap into the 21st century may still rely on printed documents for communication. Many consumers are more comfortable dealing with printed materials. Therefore, organizations must find a way to efficiently incorporate these printed materials into their processes. Transitioning invoices, loan applications, and insurance claims solely to digital form would abruptly affect how customers, partners, and suppliers conduct their business, and many would likely respond negatively to this type of change.

In short, even if a company wishes to utilize a completely electronic workflow for document-centric processes, it would be detrimental for them to ignore the fact that a countless number of paper documents must be ingested and processed, and this will continue to be the case for years to come. Nevertheless, this does not mean that the process of reviewing, resolving, and responding to information in printed documents cannot be digitized and automated.

In fact, this is the reason why growth in technologies used for imaging (such as scanners, with a forecasted unit sales CAGR[2] of 14% through 2011[3]) exceeds the growth rate of overall IT spending. As more organizations are implementing electronic processes for handling documents, having the ability to capture and insert paper-based information directly into these electronic business processes is becoming increasingly important.

Starting with a Digital Environment

Of course, document-centric processes may rely on many varieties of digital (in addition to paper-based) content. E-mail correspondences, collaboration sessions, and other office documents are associated with many document-centric processes. Content management and classification solutions for electronic "documents" – e-mails, IM's, and unstructured text – allow for their use in automated document-centric processes. Nevertheless, because more than 80% of the processes in the public and private sectors depend on forms,[4] we focus the discussion on information extraction for these documents.

Organizations can complement their image capture efforts by collecting information electronically from the start using e-Forms technologies. One salient advantage of these technologies is their ability to treat data as data while presenting it in a form that is equivalent to that of the traditional document.

When highly structured document schemas (commonly coded with XML) are used, e-Form based input can be easily absorbed by other databases and systems. Customer relationship management, ERP, and other IT solutions can access this data, use it to drive adjacent processes with BPM integration, and decrease the need for manually re-entering information. By reducing the dependency on human

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[2] Compound Annual Growth Rate (CAGR)
[3] Collins, Sandra. *Document Imaging Scanner Forecast for North America: 2006 – 2011*. InfoTrends, Inc. 10 July 2007.
[4] Feldman, Susan. *The Hidden Costs of Information Work*. International Data Group. April 2006.

intervention and input with e-Forms, an organization can expect a lower instance of data errors, improved process accuracy, and greater efficiency.

As mentioned previously, e-Forms also allow information to be presented in a familiar document form. Therefore, suppliers of data (e.g., partners and customers) do not need to have specialized training or knowledge to understand or utilize these digital forms. Internally, reviewers and processors of this form-based data will also enjoy the familiar, document-based view of information provided by the technology.

As an example of the electronic "document," e-Forms are paradigmatic of the benefits of structured digital content. The ability to display structured data as a document enables a company to support requirements for physical presentation (including printing), and the standardized content schema allows for simpler electronic distribution and processing of information by IT systems.

A Hybrid Approach

Clearly, business must continue to support paper-based processes, despite the advantages of electronically routing and processing documents. While electronic submission should be made available for greater business efficiency, organizations must address receiving, imaging, and processing paper documents from constituents who are not willing or able to submit the information electronically from the start. Ideally, organizations should employ a hybrid approach in which the business process supports both paper and electronic input.

Consider an accounts payable process. While some suppliers submit requests for payment electronically – in some cases, this is a mandatory term-of-trade – others still send paper invoices through the postal service. Although the processing of these documents may be similar from an A/P perspective, proper capture, storage, and management of the information contained within them must align with both paper and electronic input. Of course, one must also consider the risk mitigation and compliance component of this equation: documents, especially those of a sensitive nature, must be secure and the privacy of the data within them must be assured, regardless of the input medium.

Reaping the Benefits

To reduce the latencies and deficiencies of ad hoc document handling, many organizations are turning to ECM – employing a mix of document management, BPM, imaging, and classification technologies – to automate document-centric processes.

Automating the document review and resolution processes, if not the collection of information itself, can render dramatic benefits:

- Increased productivity of employees – workers no longer have to toil over document workflow and ad hoc handling requirements
- More timely processing and routing of documents
- Cost savings resulting from a decrease in the volume of physical documents that are shipped and stored
- Faster issue identification and resolution
- Greater process transparency, consistency, and quality
- Better enforcement of risk mitigation and compliance requirements, including information security and privacy

"Active Content"-Driven Document Handling

Developing a strategy and workflow for capturing information from paper-based and electronic sources undoubtedly speeds the document-handling process. Electronically captured information and digitized documents can be bundled, managed, and routed according to a claim, case, or customer record. Employees that require this information for completion of a business process can access it more readily and in a more complete form. Nevertheless, document routing does not equate to process automation: employees are required to perform ad hoc handling and workflow decision-making once a document is received.

Greater benefits can be realized when more intelligence is added to the data that is stored and when that information is leveraged to automate document-centric processes. This is fairly straight-forward in the case of electronically-submitted, structured information: content is monitored by BPM engines, which are deeply integrated with the underlying content management repository and platform. With respect to paper-based information, this can be achieved by transforming unstructured documents – scanned images, for example – into semi-structured content. Using imaging and classification technologies to extract process-critical information and add document metadata, scanned pages can be incorporated directly into a business process. Downstream applications can utilize this extracted information to automate paper-based processes.

Recognizing when content is added to a process and when it is updated is the key to achieving maximum efficiency with document-centric processes. These content triggers can incite the creation of relevant workflows, enable the automatic updating of content based on processing rules, and drive exception handling when necessary. These triggers allow for further automation of document-centric processes, which improves the productivity of users who would previously need to review or act upon the information that is obtained from the document.

IBM uses the term "Active Content" to describe this concept. Essentially, Active Content is a way of linking content and its metadata to processing rules, whereby the addition or alteration of content (or certain values thereof) can catalyze a business process or action. Active Content can increase the automation of business processes in the following ways:

- Drive documents and content to the next step of a workflow, alerting and distributing content to the required participants and IT systems

- Cause other content to be updated or added – as a simple example, changing an expense resolution field to "approved" for all claims under a certain dollar amount

- Integrate with other enterprise-class solutions for updating or retrieving data that is relevant to immediate or parallel processes

Active Content is based on pre-defined workflows or intelligent decision-making that makes use of the values contained in a document. As content is absorbed and processed by an organization, Active Content processing rules can alleviate the need for employees to track and drive a workflow, make processing decisions based on content values, or spend valuable time performing menial data updates. From a compliance and risk mitigation perspective, the automation of document-centric processes using Active Content can also improve process transparency, thanks to comprehensive process models and audit trails.

When incorporated as part of an ECM project, Active Content can deliver considerable value to an organization:

- Speeds processes by automating workflow handling, thereby eliminating the need for employees to search for and act on information.

- Improves process consistency and accuracy by reducing the degree of human intervention and contact with data

- Ensures greater compliance with regulatory and trade standards as well as corporate governance rules and policies

- Improves the retention of information utilized in the decision-making process

Best Practices

When approaching high-level initiatives such as process automation or enterprise-wide content management, substantial benefits can be realized. Nevertheless, organizations must recognize that – with respect to best practices – a comprehensive approach that addresses process, people, and technology must be taken to avoid the potential pitfalls of implementation.

Process – Automation and Closed-Loop Optimization

Whether one subscribes to Six Sigma, Total Quality Management (TQM), or another set of process management practices, closed-loop process optimization is of the utmost importance. Consider the basic methodology for Six Sigma-based process improvement:

- *Define* process improvement goals and metrics.

- *Measure* and model the current process and collect relevant data for future comparison.

- *Analyze* to verify the relationship of factors (resources) in the process.

- *Improve* or optimize the process based on the analysis.

- *Control* to ensure the integrity and efficiency of the process. Set up pilot runs, transition to production, and follow up by continuously measuring and optimizing the process.[5]

To make a business process "visible, measurable, and repeatable"[6] under any set of process management practices, especially when process automation is involved, requires tools for a consistent closed-loop approach. Processes should be modeled, simulated, and continuously analyzed and optimized, and business process management technologies should provide a framework (and applications) for carrying out these efforts.

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[5] "Six Sigma." http://en.wikipedia.org/wiki/Six_Sigma#DMAIC. 9/15/2007. Adapted.
[6] "Total Quality Management." http://en.wikipedia.org/wiki/TQM#Definition. 9/15/2007.

People – Champions and Challengers

One must also consider the human factor in any technology deployment (disruptive or not). Ultimately, it will be the business users who will use the technology and experience the benefits of process automation and enterprise content management. Organizations that intend to reap the benefits of automating document-centric processes should recognize that it is an enterprise-wide initiative: similar pain points, resource requirements, and solutions will exist across multiple departments

That said, organizations should consider creating a cross-functional committee of business users that consists of employees from all levels within the organization, including lower-level associates that are potential users of the technology up through senior/C-level management. This committee should function to assist in the evaluation, selection, and, in due course, deployment of a technology solution. By establishing such a committee, an organization can address several human-centric deployment issues:

- Understanding the enterprise-wide strategic and tactical requirements that a solution must address

- Technology "buy-in" across departments and junior through senior-level management

- Enterprise-wide support throughout the planning, deployment, and refinement stages of solution implementation

- Incorporation of best practices and proven methodologies at all stages of deployment

By recruiting a committee of "champions" and "challengers," an organization is in a better position to successfully evaluate and deploy process automation and enterprise content management solutions. Champions, as their name implies, are supporters from the start and can provide on-going advocacy during solution deployment. Challengers, however, must also be included in the process – these committee members will suggest what difficulties may be incurred as a result of implementation, such as the suitableness, usability, or practicality of a particular solution. In some cases, organizations will find that members of a technology committee who initially came on board as challengers to a solution will come around to become champions. Regardless, the roles of both champions and challengers are critical to comprehensive and successful evaluation, selection, and deployment of solutions.

Technology – An Integrated Enterprise Platform

The heterogeneous composition of the modern IT environment – which extends to departmental databases and content management solutions, legacy IT investments, and other siloed applications and repositories – makes executing process automation across the enterprise difficult. When automating document-centric processes, organizations should establish a highly-scalable, enterprise-wide platform with comprehensive integration potential to overcome this difficulty.

Such a platform would offer capabilities for federating third-party content repositories, enabling process automation cross-functionally, and establishing consistent records management across all enterprise content (in line with risk mitigation and compliance goals). Most importantly, the platform must address content and process simultaneously, allowing for the insertion, routing, processing, and retention of disparate data and documents through a defined workflow without requiring substantial customization or coding.

Compliance: Beyond Archiving

Modern compliance and risk mitigation best practices extend beyond the archiving of information. Recent strings of legislation such as Sarbanes-Oxley, HIPAA, and the revised FRCP are insisting that companies take responsibility for their data security, privacy, and integrity measures in addition to their retention policies. It is crucial that a process be auditable – the ability to show that an organization has handled a business interaction properly (including securing and processing the content in a compliant manner) is equally important to the archiving of the content itself. An integrated enterprise platform that combines process and content must enable auditing of the process in addition to traditional content archiving capabilities.

Enabling Capabilities

Although there are several ECM vendors that offer BPM capabilities, these technologies must be deeply integrated for successful process automation. The inherent need to connect content and process implies that BPM tools should be able to easily access and utilize documents and information in a centralized content repository and platform; developing intelligent workflows based on content values should not require massive custom coding projects. ECM and BPM technologies must be tightly integrated.

With this requirement in mind, a short list of vendors that provide such capabilities includes IBM. Their broad portfolio of content management solutions is complemented by equally broad professional services offerings and experience. Most importantly, the IBM FileNet P8 platform and its product suites provide the integration capabilities necessary to link content and process across the enterprise, which is especially important for enterprise-class deployments in heterogeneous IT environments.

To support improving business process, IBM offers technology and professional services as part of the IBM FileNet Content Manager and IBM FileNet Business Process Manager (BPM) solutions. Leveraging these solutions, IBM's Active Content concept becomes the cornerstone for automating and managing document-centric business processes.

As the focal point of an ECM strategy, FileNet Content Manager and FileNet BPM offer a highly scalable approach to deploying an integrated enterprise platform that supports process automation. The full lifecycle of documents can be addressed by the deeply integrated solutions: ingestion and authoring, transformation and consumption, publishing, and retirement and archiving are supported. The BPM suite provides tools and engines to design, automate, analyze, and optimize the workflow of each content type; FileNet Content Manger provides the critical metadata and content.

Integration of FileNet Content Manager and the BPM suite ensures that an organization's content and process are intrinsically linked and that content is available to users and IT systems throughout the completion of workflow. Moreover, this integration provides the basis for Active Content, allowing additions and changes to the FileNet Content Manager repository to trigger new or updated workflows through the BPM engine.

With respect to risk mitigation, compliance, and corporate governance needs, the integration between the two products allows for a comprehensive audit trail over content as it is ingested, consumed, and transformed by business processes.

Information Ingestion

As detailed in this report, a hybrid approach to information ingestion is critical – organizations must be able to accept documents and content in paper as well as electronic form. The IBM FileNet platform provides sophisticated imaging and e-Forms capabilities to meet this need.

Imaging

For scanned documents, IBM customers can choose between FileNet Content Manger and FileNet Image Manager Active Edition, which include fixed image management as well as comprehensive document recognition and classification capabilities. Optical Character Recognition (OCR) technology and other image processing algorithms extract printed and hand-written information and convert it to a semi-structured, digital form that is usable by other enterprise applications and processes. To improve the accuracy of this conversion process, IBM FileNet Capture ADR allows users to double-key critical data fields, double-key data that was recognized with low confidence, and validate data against a set of business rules. Ensuring digitization accuracy is critical to the efficacy of automated document-centric processes. Particularly in the case of organizations that seek to automate high-volume and business-critical processes, the accuracy of the information that is extracted from paper-based documents is extremely important.

e-Forms

To enable the collection of electronic information from the start, IBM FileNet eForms provides an e-Forms design and deployment environment. What differentiates this product from other e-Forms solutions, however, is its tight integration with the FileNet Content Manager. This offering allows users who are unfamiliar with scripting and HTML to design Web-based forms without the need for coding. Form data is automatically stored in the content repository, inheriting all of the FileNet Content Manager capabilities. A simplified point-and-click user interface allows business users to map form data to document properties, or, in the case of process automation, to workflow data fields that can drive intelligent, decision-driven business processes. In contrast, other e-Forms solutions – such as those developed using standard office applications – often require substantial customization and coding for development and provide significantly less integration with automated BPM-driven workflows.

From a process perspective, IBM's imaging and forms solutions provide tools pertaining to the initial ingestion of document-based information. Fixed image recognition technologies, data field validation, and database look-ups provide automation in this stage of the document lifecycle, alleviating the need for workers to manually input and verify this information.

Once this data is managed within the IBM FileNet content repository, Active Content processing rules can take over. Based on the information extracted from the paper- or Web-based forms, workflows can be launched, databases and other content repositories can be updated, and documents can be routed to the appropriate participants in the process.

Not Just "Documents"

Despite this report's focus on "documents," it's important to recognize that content is transmitted in other forms throughout an organization, and users can achieve further benefits by automating the processes that leverage this content for completion (content-centric processes). IBM's Active Content supports a myriad of content types, and, as is the case for traditional documents, the FileNet BPM engine can take action based on content that is added or updated in the system.

In addition to supporting mainstream content types (such as Microsoft Office formats), IBM FileNet's content management and business process automation solutions extend to e-mail and streamed XML content, which can launch or drive relevant workflows. In document review situations, approval and change request workflows can be launched and tracked using e-mailed content. Streamed XML content emerging from e-Forms systems or databases can trigger new workflows – for example, management can immediately be made aware of a supply-chain bottleneck issue when threshold metrics are recorded and reported by a business activity monitoring system.

Automation and Optimization

The first step in process automation methodology is effective design and modeling, and FileNet BPM provides a foundation for developing and modeling an enterprise's various workflows. Using a drag-and-drop interface, users can easily map and model processes, business logics, role associations and other properties for workflow automation for execution in the FileNet BPM engine. Since the product supports process definitions standards, including XML Process Definition Language (XPDL) and Business Process Modeling Notation (BPMN), users have the option to import process diagrams from third-party modeling applications (such as Microsoft Visio) or from IBM WebSphere Business Modeler instead of using the native design and modeling interface.

Integration with IBM FileNet eForms plays a significant role, as it enables electronic forms to be leveraged to solicit input from users and drive a workflow. The same simple form design interface helps developers rapidly create applications that maximize process automation and simplify user interaction. Based on form input, FileNet BPM can launch a process, update content, or proceed to the next step of the workflow.

Predict the Future

Once a process has been modeled, FileNet BPM provides capabilities for process validation and simulation, enabling organizations to test and optimize their processes before deployment or for continuous improvement. Business users can visually link each process step to relevant resource variables. These variables establish the foundation for process simulation and can be based on historical process execution data or assumed figures:

- Labor, capital, and time resource costs associated with each step of the process
- Weighted workflow priorities for resources (or workers) that may need to manage several processes simultaneously
- Staffing models for simulating work shifts and labor availability
- Frequency and volume of incoming work

By defining variables such as these, FileNet BPM can replicate and animate multiple workflows and "what-if" scenarios simultaneously, delivering key metric estimates for process costs and performance. More importantly, the capability allows business users to anticipate critical bottlenecks, lag-time, and possible resource shortages. By simulating and optimizing workflows, organizations can take the proper measures to gain substantial process efficiency and agility.

Analyze and Optimize

Integration between the components of the FileNet BPM suite and additional expansion products allows organizations to develop closed- loop processes for automation and optimization, using the design environment for development and the simulation tool for testing. In addition, FileNet BPM offers process analysis and tracking tools for simulated and real-time processes.

Finally, IBM FileNet Business Activity Monitor (BAM) provides a real-time dashboard view into critical process metrics and significant business events for performance and compliance management. When events and data reach business user-defined thresholds, BAM can trigger the initiation of relevant processes and Web services in FileNet BPM. Furthermore, the system can automate user alerts and notifications via email, page, or text message for immediate status updates. BAM provides a real-time, actionable view of organizational performance to empower business users with more visibility and control.

In short, the FileNet BPM suite provides a set of tools that are suitable to support a complete cycle of continuous process improvement. Having the ability to design and automate document-centric processes; to simulate, monitor, and analyze the performance of those processes; and ultimately to refine and optimize those processes can improve an organization's responsiveness, efficiency, and business agility.

An Extensive Portfolio of Capabilities

Supporting FileNet Content Manager, which provides the repository and backbone for managing the vast number of documents and content that are incorporated in document-centric processes, are additional IBM assets.

Collaboration

IBM FileNet Team Collaboration Manager, a Web-based solution for flexibly deploying team or project-based forums for collaboration, is fully integrated with the BPM suite. Processes designed and developed using FileNet BPM can initiate and capture collaboration sessions and threaded team discussion, create and assign tasks to the appropriate participants, and launch other external processes.

For document-centric workflows that require collaboration and multiple participants, the integration of Team Collaboration Manager with the entirety of the IBM FileNet ECM and BPM solution set can increase process efficiency and consistency, ultimately leading to a more agile and competitive business.

Records Management

To be complete, an enterprise content strategy must include business records management to ensure that compliance and risk mitigation needs are addressed. Increasing regulatory and trade requirements for content capture, security, and privacy imply that organizations must take an enterprise-wide approach to records management from a technology standpoint. This approach must incorporate the wide variety of

content types that exists within an organization, including unstructured documents and e-mail, structured XML and Web content, e-mails, and an increasing number of digital assets such as images and audio. Moreover, the technology deployed should not hinder users' productivity; rather, it should function transparently while providing enterprise-wide control over record retention policies and visibility into audit trails.

IBM FileNet Records Manager is an inherently integrated component of the IBM ECM solution that is used to declare pertinent documents and content as records. Records Manager integrates with every component of the FileNet P8 enterprise platform – including the Team Collaboration and Image Manager –and it automatically captures records based on defined business rules and processes across the enterprise. Record retention and expiration are applied based on a centralized Records and Information Management policy, and reporting capabilities ensure demonstrable compliance and easy-to-access process audit trails. Support for physical records management allows an organization to apply the same policies to paper-based documents and other physical media (e.g., product samples or microfiche).

Enterprise Reach

Integration with third-party IT systems allows IBM's solution to work with a wide range of enterprise repositories and applications. Connectors for Microsoft Office SharePoint Server and IBM Lotus Quickr, for example, support document authoring, collaboration, and management in these environments, while allowing users to take advantage of the powerful process automation and optimization capabilities of the FileNet BPM suite.

Most organizations have multiple heterogeneous content repositories, which can limit the effectiveness of process automation across the enterprise. With IBM FileNet Content Federation Services, companies can manage and use content from legacy repositories as if it were native to the ECM application. Because it is generated and managed throughout business processes, enterprise content is never static; therefore, centralization of metadata into a unified catalog enables tighter control over the changes that are inevitably made to metadata the moment that any modifications are made to that content. Users can search for, retrieve, view, and update content items from remote repositories as if they were accessing native content. As a result of this transparency, organizations gain a simplified method for standardizing content across the enterprise and applying best practices of business process management consistently to native and non-native content.

FileNet BPM is particularly suited to managing content-centric business processes that also involve human intervention. Nevertheless, some business processes require deeper integration with existing applications and IT systems, or they may be heavy consumers of various IT services. Managing and automating such processes requires advanced integration, and this functionality is provided by integration-centric BPM suites such as IBM WebSphere BPM.

Often, a process may have both content- and integration-centric requirements. For business processes with heavy integration needs, WebSphere Process Server (WPS), which includes a Service Oriented Architecture (SOA) foundation with Enterprise Service Bus (ESB) and packaged integration adapters, can be used along with FileNet BPM. This solution enables end-to-end management of any content- or integration-centric business process. When complemented by proven process management methodologies and industry best practices, this solution allows customers to achieve maximum support for their process technology investments.

Finally, IBM's document-centric software capabilities are complemented by proven professional services that assist with designing, implementing, and maintaining organizations' process initiatives. IBM and IBM Business Partners – including the FileNet ValueNet program members – provide a wealth of industry solutions, product expertise, and planning and implementation support experience that helps clients realize the value of their process technology investments.

InfoTrends' Perspective

The need to speed processes and to cut costs is not a new concern for organizations. Increasing market competitiveness, the global economy, and tighter business cycles require enterprises to become faster and more agile. Simultaneously, the need for corporate-wide compliance and risk mitigation has never been greater: organizations must balance the need for speed with that of consistent records management, security, and data integrity.

Nevertheless, organizations are still employing a surprising number of paper-based and ad hoc document-centric business processes. Routing, managing, and retaining all of these paper documents adds unnecessary costs to an organization's business, not to mention the fact that this clearly presents challenges in the area of compliance and records retention. Even for those processes that incorporate digitally captured or electronic information, the necessary management of complex workflows lowers productivity and introduces user inconsistency and error into the equation, as so many of the process steps require human intervention.

To improve business efficiency and agility while maintaining high compliance and risk mitigation standards, companies need to automate document-centric processes and provide an integrated enterprise platform for managing content and process within a single framework. The list of required capabilities related to these processes includes imaging technologies for capturing paper-based information; content management technologies for organizing and exposing the wide array of objects and data required for process completion; and business process management technologies for designing, testing, and optimizing the automation of processes. Core requirements for enterprise-wide records management must also be considered.

IBM's Active Content capability provides the foundation for the automation of document-centric processes: the ingestion or updating of the content itself is the trigger for launching processes or updating corporate data. FileNet Content Manager and FileNet BPM provide the necessary tools for deploying a fully-integrated enterprise platform that leverages Active Content. With a combination of ECM and BPM technologies, the solution set can address and optimize the full lifecycle of corporate documents and content, improve process efficiency and agility, maintain compliance, and scale to streamline the processes of growing and evolving enterprises.