



October 7, 2010

Take A Process View Toward Enterprise Content Integration

by Craig Le Clair
for Business Process Professionals



October 7, 2010

Take A Process View Toward Enterprise Content Integration

Business Process Management And Dynamic Case Management Raise The Bar For ECI

by **Craig Le Clair**

with Connie Moore, Stephen Powers, and Ralph Vitti

EXECUTIVE SUMMARY

Transforming business processes depends on access to information from an increasing number of systems, with a wider range of formats, and in greater volume. BP pros who seek to improve processes with business process management (BPM) and dynamic case management initiatives are working to reduce the amount of information to manage, improve information access, and lower enterprise content management (ECM) infrastructure costs. But deciding on the best approach proves difficult. SharePoint's acceleration and emerging cloud offerings will only worsen these investment challenges. Content Management Interoperability Services (CMIS) shows promise but will not solve interoperability problems for three years or more. As a result, organizations should use content integration software, frameworks, and strategies — enterprise content integration (ECI) — to consolidate archives, federate access, and/or synchronize content. Niche software companies, ECM providers, and systems integrators provide a diverse yet sometimes confusing set of solutions.

TABLE OF CONTENTS

- 2 **ECI Is Needed To Improve Processes That Span Functional Areas**
- 3 **ECI Helps BP Pros Consolidate, Federate, And Synchronize Information**
- 9 **CMIS Breaks The Proprietary Lock — And The Need For ECI**
- 9 **Get A Services Partner When Undertaking ECI Projects**

RECOMMENDATIONS

- 11 **Look To Content Integration To Improve Business Processes**

NOTES & RESOURCES

Forrester interviewed 10 users companies and the following software and service vendors: Brainware, Day Software, EMC, EntropySoft, HCL, Hyland Software, IBM, Kapow Technologies, McLaren, Microsoft, Open Text-Nstein, Oracle, SeeUnity, and Unisys.

Related Research Documents

["No Longer A Science Project: Use Content Analytics For Pragmatic Business Solutions"](#)
June 25, 2010

["Collaboration, Search, And Compliance Drive 2010 ECM Investments"](#)
December 8, 2009

ECI IS NEEDED TO IMPROVE PROCESSES THAT SPAN FUNCTIONAL AREAS

Improving business processes requires broader access to a wider variety of information than ever before. But quite often, reading and updating content in another system or department is simply not possible. Enterprise content integration (ECI) can help. Forrester defines ECI as:

Software that connects systems that manage data, documents, and unstructured information with a goal to migrate, synchronize, search, access, or publish content across multiple systems.

Historically, ECI projects were started to address specific departmental needs, such as accessing images of invoices in the accounting department, reviewing contracts in the legal department, or publishing Web content within the marketing department. But business process pros and BPM competency centers increasingly need ECI to help transform end-to-end processes that cross organizational boundaries. To support process improvement, ECI needs to:

- **Support business process management initiatives with an enterprise focus.** BPM is a discipline for continuously improving an end-to-end business process, usually grounded in a methodology or philosophy for automating processes, such as Lean.¹ The enterprise focus of BPM requires broader access to well-organized content trapped in ECM systems, packaged apps, SharePoint repositories, file shares, and message archives often at the department or business-unit level. ECI helps serve this content to redesigned business processes that leverage emerging BPM capabilities such as dynamic case management.²
- **Help tame “untamed” processes that cross-functional areas.** Untamed processes such as customer onboarding, order administration, and claims processing encompass unstructured content, ad hoc human-controlled processes, and users and applications that access content across multiple departments and business units.³ Untamed processes will move toward BPM and dynamic case management frameworks that depend on accessing information from a number of departmental and enterprise systems and require scalable content integration frameworks.⁴ BP pros tackling untamed processes that require dynamic case management can buy a predominately BPM product and integrate the content repositories in, or they can buy a mainly ECM system, which probably is weaker in case management. In either case, ECI becomes an important building block for integrating content into cross-functional processes.
- **Help address the proliferation of content types and sources.** Realistically, a growing portion of unstructured content important to a business process is not stored and managed in document management, Web content management, or other ECM systems. Instead, much of the content created and used within departments may be found in collaboration tools like SharePoint, file systems, packaged applications like enterprise resource planning (ERP) and CRM systems, external SaaS and cloud-based content sources, and social networks. Business processes that span the enterprise typically do not integrate with these content stores. ECI will become more important to help manage this more global view of information.

ECI HELPS BP PROS CONSOLIDATE, FEDERATE, AND SYNCHRONIZE INFORMATION

If IT had its way — and you could roll back the clock — all information would be all moved to a single repository. Yet we get further each day from this vision, and consolidation is no longer practical. Business momentum, fit-to-purpose solutions, emerging cloud services, and poor information management governance keep bringing on new information silos while the old ones just dig in further. Governance and ECM strategy inch toward “shared content services,” but for the next three years, BP and content and collaboration pros must rely on ECI to play a strong role in helping achieve this goal.⁵

ECI software connects systems that manage data, documents, and unstructured information. While the goals of ECI are clear, the path to achieving them will vary based on business drivers such as cost reduction, process improvement, or vendor support issues (e.g., end-of-life repositories). The four different approaches are:

1. **Consolidation migrates content to the go-forward repository.** Consolidation removes the old repository infrastructure and eliminates ongoing infrastructure costs.
2. **Federation leaves repositories in place.** Federation keeps an infrastructure in place — and uses ECI to provide access. Despite improving costs for migration efforts, federation is a strong option when a repository is tightly integrated with a process and business disruption may occur from closing it down.
3. **Custom integration is a tactical approach.** Custom integration requires point-to-point integration between an application and a content repository or one content system and another content repository. When integrating content repositories through custom integration, other problems can arise in addition to costs and maintaining the system of record.
4. **Synchronization is a more permanent solution.** Synchronization approaches can save license fees and development costs or improve productivity. While migration is usually a one-shot deal, synchronization is a more permanent solution — required when the business must keep documents in two repositories or routinely move data from one place to another.

Business Process Pros Report Success (With Clear Caveats) For All Four Approaches

Content integration can improve business processes by providing a more complete and insightful set of information. In addition, it can reduce infrastructure costs and license fees and make workers more productive. But projects can be complex, difficult, and challenging. ECI projects have run into problems due to:

- **Poor requirements gathering.** Vague or overly complicated requirements and an insufficient focus on metadata were the main lessons learned. In some cases, business users did not

understand the rules about where to place a document, how long to retain it, what annotations were important and cost-effective to keep, and whether content should be left in a read-only mode or in a state that can be updated. Poor focus on metadata, which can make the content useful to other applications, can severely limit the usefulness of the integration effort.⁶

- **Lack of attention to the political landscape.** Business process pros, working with content and collaboration pros, did not often recognize the natural resistance to content reuse from content owners. Getting the organizational buy-in to reuse content across workgroups, departments, and business units can be a major — and ongoing — challenge.
- **Too much custom integration that affects maintenance and upgrade decisions.** Custom integration requires point-to-point integration between an application and a content repository. These efforts can be slow, time-consuming, and expensive. In addition, software updates to any of the integrated content systems can cause the content integration to fail. As a result, additional services may be required to maintain the custom integration over time. When new software releases are available for the integrated content systems, the organization must balance the need for upgrades against potential impact on the custom integration. Even if the impact is minimal, upgrades could require a complete regression test of all applications, which slows the benefits of updates to the business.

SharePoint Creates More Content Integration Challenges

During any given week, Forrester receives inquiries from content and collaboration professionals, enterprise architects, and business process professionals asking how to convert IBM/FileNet, Oracle, Open Text, EMC Documentum, or other traditional repositories to SharePoint repositories. And, we also get inquiries about moving from one SharePoint version to another. File systems, Microsoft Exchange public folders, blogs, and Web sites also have content integration issues. These individuals are most concerned with:

- **Migrating to SharePoint as the ECM platform.** Government agencies are famous for moving slowly but, when needed, can make quick decisions. One particular federal civil agency had a 10-year investment in Open Text but wanted to replace it with EMC Documentum. But at the last minute, a new CIO said, “Let’s just convert Open Text to SharePoint,” prompting a two-phase ECI strategy.⁷ Phase 1 connected SharePoint collaboration to the existing Open Text repository. Migration in bulk fashion from Open Text to SharePoint would occur in phase 2, requiring conversion tools such as those provided by Metalogix. These tools support a variety of SharePoint migrations including lists, libraries, permissions, and Web Parts between server sites.⁸ Another approach for wholesale migration would be Verinon — with off-the-shelf products and services for migration (from EMC Documentum and other platforms to SharePoint). Another option could be KnowledgeLake, which does not sell off-the-shelf ECI tools but uses internal tools to do migration as a professional service for clients.

- **Moving SharePoint and other content to traditional repositories.** Many enterprises have a significant investment in an ECM infrastructure or do not feel that SharePoint is a strong enough repository. ECM providers have tool kits, such as EMC Documentum Content Services for SharePoint, to assist with moving SharePoint content to their repositories usually for archive, records management, or eDiscovery.⁹ In one firm, IBM Content Manager OnDemand (CMOD) was used to archive payroll reports. Yet the corporate records management system was EMC Documentum. The content integration project used EntropySoft's Content ETL to extract payroll records and then applied the needed tagging to classify and move the records into EMC Documentum for long-term management.
- **Maintaining all features when using SharePoint as the front end.** If switching to SharePoint as the presentation layer from the native UI of the ECM provider (e.g., EMC, Hyland, IBM, or Open Text), make sure all existing features with the native UI are supported. In some cases, they may not be — requiring additional development. One European bank used a SharePoint access solution provided by its ECM provider, but unlike in the native ECM UI, when a document was saved in SharePoint, it did not convert to a “record” in the ECM repository for records management control, and this required special development to rectify. Needless to say, this additional work was not part of the sales presentation.

Migrate When Repositories Are Old And Federate When Sound

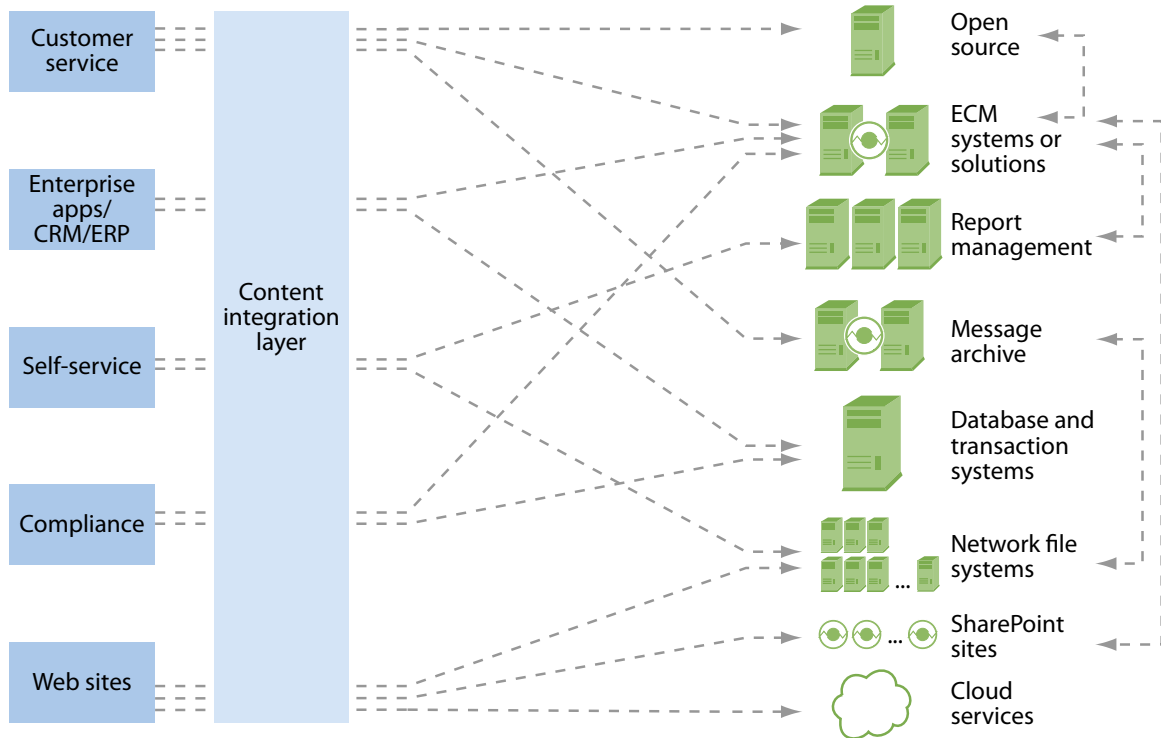
Migration projects often have high upfront costs but have the advantage of removing the old infrastructure. Federation is harder technically, less proven, and can introduce software maintenance dependencies down the road, but it may have less affect on the business, particularly where workflows have been built as part of the ECM application. While the tradeoffs are clear, the best option remains elusive for many organizations. We find that:

- **ECM providers have improved their federated capabilities.** ECI provides bidirectional access to multiple repositories to support retrieving, creating, deleting, modifying, and browsing documents and folders — avoiding restrictions of point-to-point access (see Figure 1). EMC, IBM, Open Text, and Oracle all offer connector products to retrieve content from other systems they hope to replace. IBM's Content Integrator Enterprise Edition, for example, supports access from P8 to older versions of FileNet, Content Manager, the CMOD report management product, EMC Documentum, and other platforms.¹⁰ Unisys, in its ECM systems integrator practice, leverages the productivity of SharePoint through its built-in InfoImage-SharePoint Connector. EMC's Enterprise Content Integration Solution leverages search in the source repository — avoiding metadata catalogs.¹¹ Open Text Content Integration Center takes a broader scope by accessing data warehouses, providing enterprise application integration, synchronizing applications and content, decommissioning legacy systems, migrating content, and classifying metadata.¹²

Specialized ECI companies such as BrainTribe, EntropySoft, SeeUnity, Vital Path, and Vorsite also pursue the ECI market. Plus, universal viewers — gaining in usage — can be integrated with Web applications to allow viewing of PDFs and audio/video attachments, allow zoom in/out, and support annotating, redacting, and highlighting portions of the document.¹³ And Day Software, recently acquired by Adobe, offers a collection of connectors to content management systems using the JSR-170 API.

- **Federation affects users and the business process less.** Migration costs have been coming down due to stronger ECI tools and improved skills from systems integrators. Yet federation is a strong option when complex object models, workflows, and business disruption may occur from migrating and closing down a content repository. In many cases, enterprises just have too much invested at the business process level to worry about the underlying repository. According to one content integration provider, “Federation is becoming more prevalent than migration.” One company started out to replace a Documentum system with SharePoint, but when the business process pros and content and collaboration pros got into it, they decided SharePoint was not quite ready — due to the effort to replicate line-of-business integration in the existing system, the need to support a very different “object model” in Documentum, and the disruption to key staff. So the company ended up with two systems and decided to federate access.
- **Consolidation removes infrastructure costs.** Consolidation reduces software licensing costs, maintenance effort, and removes other IT infrastructure costs, including energy. But high migration costs often dominate the discussion. Even with improved content integration, the cost for migrating from one archive to another can be three to five cents per object, and projects may take four months to a year. With the help of HCL, a large systems integrator with an ECM practice, one large financial services company converted two older COLD platforms to the current IBM COLD product, Content Manager OnDemand.¹⁴ The two-terabyte conversion cost between \$100,000 and \$350,000. HCL followed its Enterprise Content Consolidation framework — a combination of processes, tools, and ROI of successful migration. The approach reassured the customers that the consolidated content had not lost its sanctity post-migration.

Figure 1 Point-To-Point Integration Complexity



Note: Arrows are not intended to represent all point-to-point connections.

57277

Source: Forrester Research, Inc.

Synchronization Reduces Switching Among Content Repositories And Lowers User Fees

Synchronization remains a less used but strong use case for content integration. While migration is usually a one-shot deal, synchronization offers a more permanent solution — required when the business must keep documents in two repositories. Business process professionals implementing synchronization projects seek to:

- **Reduce license fees for casual users.** In some cases, synchronization just saves money. One large manufacturer uses Open Text Livelink ECM — with per-user licensing — and an expanding use of Alfresco Enterprise Edition, which has no user-based license fee. Internal researchers needed to access certain documents in Livelink only one or two times a year and did not want to purchase end user licenses. In this case, business process professionals used EntropySoft’s ECI product to synchronize certain Livelink folders with the Alfresco system — thus avoiding license costs.
- **Keep the UI simpler with content moving in the background.** IT will often build a complex UI to give the iWorker access to packaged apps, databases, and diverse ECM systems that house

email, images, faxes, and business content. Content integration can reduce the complexity of the UI. One large New York bank, for example, used the Content ETL product from EntropySoft. Instead of a more complex EMC Webtop development that would access multiple systems, the bank opted to migrate content created in SharePoint and Open Text to the EMC Documentum environment.¹⁵ This greatly simplified the user experience and the UI development.

- **Synchronize SharePoint sites with traditional ECM systems.** Many organizations want to protect their documents in corporate ECM systems such as EMC Documentum, Open Text, or IBM FileNet. Yet Microsoft SharePoint is often the user interface. One large bank uses EntropySoft to synchronize in real time the documents created in SharePoint with IBM FileNet. Users work in their preferred environment while documents are securely synchronized with the corporate repository. This synchronization approach avoids use of Web Parts and is relatively simple to deploy.
- **Scrape Web sites and create consolidated views.** Customer service reps often switch between apps in a clumsy and inefficient manner while the customer is on hold. In some cases, ECI software should grab the needed content behind the scenes and present it in a unified way. Kapow Technologies' content integration solution works like a robot to extract, transform, and load content from Web-based apps to consolidated views.¹⁶ One large telecommunications company used Kapow's robot for customer service business processes to eliminate task switching and repetitive tasks. According to the company:

“We keep metrics on the savings from installing the Web ECI capability — and basically we were able to have one person do twice as much work. In one case we needed to process 129,000 orders for one business customer. It would have taken 30 people — if we had them to dedicate — to meet the two-month deadline. Using the Web ECI tool, we were able to meet our goals.” (Software engineer, major telecommunications company)

- **Get consistent information.** The engineering world has less concern about the cost to migrate a document — and more concern about getting the right document in the right context, particularly where safety is the highest priority. For example, a search reveals the emergency shutdown procedures for a nuclear plant at 95% relevance, which will not meet requirements. The nuclear power industry requires a 100% match to the right document. McLaren Software specializes in engineering project and asset document control applications for large physical assets such as the plant infrastructure for oil and gas companies. McLaren applications manage complex engineering documentation and associated business processes that must manage large and interlinked engineering drawings, for example for an oil rig's or refinery's life cycle. Enterprise Engineer has been designed to operate on either an EMC Documentum or IBM FileNet P8 systems.

CMIS BREAKS THE PROPRIETARY LOCK — AND THE NEED FOR ECI

If Content Management Interoperability Services (CMIS) were here today and readily available, there would be little need for this research document. But today, access to ECM repositories is a project that requires proper care and feeding by content and collaboration professionals and business process professionals. CMIS will allow more general access to a content repository, assuming the vendors support a CMIS “front end” to provide access. Still left open are any integration or changes to schema required for workflow integration — but CMIS is a positive step, nonetheless. EMC, IBM, and Microsoft have committed to both CMIS front and back ends with many other ECM suppliers leaning more toward developing the front end only.¹⁷ CMIS will:

- **Improve interoperability down the road.** Today, ECM giants EMC, IBM, and Microsoft lead the CMIS charge. With CMIS, any front end supporting the standard can access content stored in this XML schema. Currently, application developers must modify or build applications for specific vendor platforms such as IBM FileNet or EMC Documentum. If developers want the application to work with multiple platforms, they must code each integration instance. As CMIS matures, IT staffs and integrators can build one application that will work with any ECM platform that supports CMIS. This saves on development efforts and potentially opens their applications to a broader market.
- **Inspire new ways to leverage content in ECM platforms.** CMIS will lead to more investment in ECM by enterprise customers and may do for ECM what the structured query language (SQL) did for databases and structured repositories — provide a standard that promotes application development and higher value. For example, CMIS could help the healthcare industry move to meaningful use goals for medical records by allowing applications to be written to tap unstructured content.¹⁸

GET A SERVICES PARTNER WHEN UNDERTAKING ECI PROJECTS

Enterprises on a mission to consolidate, federate, or synchronize repositories will need outside help. A range of product and service offerings provided by small software companies are evolving rapidly. Systems integrators (SIs) and ECM providers also are helping with migration projects.

SIs And Conversion Tool Vendors Provide Desperately Needed Outside Help

Small details can have a big impact on the success of a content integration project, but the biggest success factor by far is choosing the correct services partner. SIs that focus on ECM, such as HCL and Unisys, are building tools and frameworks for ECI.¹⁹ In addition, most software tool vendors such as EMC, IBM, and Open Text offer professional services. So which is best? We’ve found that:

- **Innovation comes from focused software companies.** The bulk of activity in the ECI market comes from: 1) consolidating legacy ECM products to newer versions of the same provider; 2) migrating content; or 3) providing access to or from SharePoint. Kapow Technology’s

content migration solution will load content from the Web or other ECM systems into EMC Documentum and other repositories, essentially providing a solution that could be characterized as “textual ETL.” Denver-based SeeUnity, for example, has more than 100 customers that have performed traditional ECM migrations — usually from a legacy repository to the go-forward platform — and migrations from SharePoint to other ECM platforms and from established ECM platforms to SharePoint. SeeUnity also will support email migration, for example from Autonomy ZANTAZ to another message archive. But the migration of SharePoint content to various locations dominates the future pipeline — particularly where an enterprise has let SharePoint grow virally and now must move content into larger repository.

- **Most content integration initiatives will be led by SIs.** Successful conversion requires strong project management and experience with a wide range of content technologies. SIs, not surprisingly, are well suited to these one-time efforts and have improved migration and extraction support. HCL, for example, has a content management practice and a suite of content migration accelerators to help with conversions.²⁰ Wipro has a consolidation rationalization and migration service. Consulting companies such as Verinon specialize in ECM integration and focus on specific platforms such as Documentum.²¹ Large SIs such as Accenture, CSC, IBM, and Unisys all have growing content integration skills.

Service Providers Can't Do It All — They Need Your Help To Execute Smooth Projects

Selecting the right outside partner, getting requirements right, and keeping content integration goals simple are the keys to successful projects. In particular, we find that:

- **SIs need your help by getting the conversion rules clear.** With any project, getting the requirements clearly understood is the most often cited challenge. One large insurance company needed to migrate from a FileNet Image Services platform that was no longer supported to P8. Here, metadata from the Image Services platform did not need to migrate because the metadata was embedded in the link from the P8 system that was used to access the content on the older platform. But business users did not clearly understand the rules on where to place a document, retention policies, and storage level, and it took weeks to get mistakes corrected. In addition, network bandwidth was not readily available. The project team tried conversion first during operational times but then moved to weekends where throughput is much faster. The 560 million documents added up to less than 3 megabytes per document but totaled more than 3 terabytes. Once started, the conversion was completed in less than four weeks.
- **Simple conversions work best — avoid ambitious overlay and annotation approaches.** Overlays consist of annotation, redlines, or “boilerplate” artifacts only displayed during viewing (i.e., not stored for all documents). And it can be a challenge to map them into the target system. In fact, the ECM system may not support the specific overlay feature (e.g., Documentum's Type Based Object feature may not exist in the target system). Reducing overlays in the migration process makes things go more smoothly.

- **Some conversions are unique and require extensive customization.** One company used EntropySoft to migrate content from an IBM Total WebSphere content storage solution to Lotus Workplace. In this case, the ECI product needed vendor support to build connectors for the two APIs. This task required specialized expertise. Business process professionals in advising IT counterparts on ECI projects should expect to buy outside provider support for this type of migration (i.e., lower market share products). Kodak Digital-to-Digital Conversion Services offers an interesting option for one-time conversions. Physical media provided to a Kodak lab gets returned in the required format.²²

RECOMMENDATIONS

LOOK TO CONTENT INTEGRATION TO IMPROVE BUSINESS PROCESSES

Content integration can reduce infrastructure costs and license fees, but the real value is from improving business processes by linking content to BPM and dynamic case management systems to reduce cycle time and improve compliance, customer support, and decision-making. But projects can be complex, difficult, and challenging. Business process pros should:

- **Work with content and collaboration colleagues to develop an overall “access” strategy.** ECI tools are an important piece of the puzzle, but enterprises should step back and coordinate ECI efforts with overall business process transformation initiatives. Work with IT content and collaboration specialists to ensure that SharePoint sites, ECM systems, file shares, and any SaaS or cloud offerings, as well as structured data repositories and enterprise apps, all work together to improve process goals.
- **Evaluate vendors through references and proof of concept.** Past ECI projects are straightforward to evaluate. For example, goals such as access to target content, capture of needed metadata, proper synchronization, or removal of all content from the source repository were either met or not. Projects were either on budget and met timelines or did not. By far, references are the most valuable way to evaluate providers for ECI. Providers with strong references should be given source data and the target scenario and asked to demonstrate their capability.
- **Spend time getting ECI requirements clear.** Time spent upfront in making ECI requirements clear will pay off. Clearly understood requirements, complicated conversions, and insufficient focus on metadata are prime categories that warrant focus. For example, you will get better pricing if conversion rules are crisp—and there will be fewer surprises and less project risk.
- **Look to SIs if you don’t have the in-house expertise.** Many ECI projects are one-shot deals. Let the SI take the risk of special development and anomalies in the data, particularly for connectors to low-market-share repositories. Evaluate HCL, Wipro, larger SIs, and specialized consulting companies like Verinon. Additionally, organizations should look to maximize

value from ECM/BPM solutions, embrace modern ECI approaches, and use case management tools. Oftentimes, the same SI can address both your ECI (e.g., integration, migration, federation, and conversion) requirements and the long-term approach with modern ECM/case management tools and at a reduced overall cost if the projects are bundled into one larger enterprise engagement.

- **Be wary of software tools promising easy configuration.** Most ECI projects require integration and custom development. Use software tools to get a jump-start on the project, but stay realistic about potential bottlenecks, particularly for low-market-share platform conversions. Be wary of third-party connector tools, as ECM providers will build or acquire their own.
- **Keep an eye on CMIS and look to ECM vendors that have commitment.** Let's not repeat the mistakes of the past. CMIS will provide stronger integration capabilities over the next generation of ECM installations. Be sure your selected vendor has a clear strategy for both CMIS front-end and back-end support.

ENDNOTES

- ¹ As smart executives delve into the core of Lean Thinking, the role of technology in Lean-based performance improvements becomes abundantly clear. Senior executives expect their CIOs to drive improvements in the effectiveness and efficiency of technology usage as well as core business processes. When applying Lean as a performance-improvement strategy, CIOs should consider four essential practices: 1) specify value from a business perspective using five principles; 2) define improvement goals top-down in terms of delivery, costs, and quality; 3) implement improvements bottom-up by eliminating waste from processes; and 4) synchronize the top-down and bottom-up levels. CIOs should apply these practices at the right time in the life cycle of the performance-improvement program to ensure Lean outcomes can be defined and tracked against strategic business goals. See the October 27, 2009, "[What CIOs Should Know About Lean](#)" report.
- ² Interest in case management has climbed higher and higher throughout 2010. Drivers include: 1) an increased need to manage the costs and risks of servicing customer requests like loans, claims, and benefits; 2) a greater emphasis on automating and tracking inconsistent "incidents" that do not follow a well-defined process; 3) new pressure on government agencies to respond to a higher number of citizen requests; 4) new demands that regulators, auditors, and litigants place on businesses to respond to external regulations; and 5) the increased use of collaboration and social media to support unstructured business processes. BPM and ECM suites alone are insufficient for dynamic case management, but the convergence of BPM, ECM, business analytics, and event processing will breathe new life into case management. Lean initiatives to improve business processes will also shine a spotlight on case management. These forces will push document-centric BPM suites toward packaged case management offerings, and this new category of software will emerge as a distinct market by 2013. See the December 28, 2009, "[Dynamic Case Management — An Old Idea Catches New Fire](#)" report.
- ³ A business process — at its highest level — is any activity that helps an enterprise achieve its goals. Packaged and industry-specific applications form the transactional backbone for most critical business

processes in enterprises and small and medium-size businesses; however, these are only part of the story. Enterprises need many other processes to meet their goals, and often, some of the processes not tackled through packaged apps get approached in tactically haphazard ways. Over time, these processes become laden and bloated with non-value-added activity. In short — they become untamed. IT gets dragged reluctantly into the support and enhancement of these untamed processes. The results are not surprising. Weak architectural approaches spawn niche products, and the use of various business intelligence, BPM, business rules, collaboration, and ECM tools that are applied like Band-Aids work chaotically to make untamed processes more efficient. Business process professionals must take a more proactive and strategic approach to addressing these untamed business processes. See the August 21, 2009, “[Untamed Business Processes: When Even The Best Of Intentions Go Awry](#)” report.

- ⁴ Pegasystems, for example, uses IBM Content Integrator Enterprise Edition software to access ECM and other repositories for its case management solutions.
- ⁵ Enterprises still struggle with basic strategies for ECM. Forrester offers workshops and advice on ECM segmentation and road map approaches to its clients. For a description of the Forrester ECM segmentation approach, see the December 27, 2007, “[Business Context: A Better Way To Define An ECM Strategy](#)” report.
- ⁶ Metadata is defined as data about data that applies mainly to electronically archived or presented data and is used to describe the definition, document type, structure, administration, and other attributes that can help leverage the content for linkage to other archived data or business processes.
- ⁷ IBM Content Integrator can enable portals, collaborative applications, customer relationship management, and other key applications to work with distributed content such as images, documents, and workflow processes from disparate native repositories. Content Integrator includes a set of graphical tools and components that allow you to configure the solution and to display and work with integrated content from disparate sources. A common set of APIs, not specific to a repository, allows you to create applications and solutions.
- ⁸ Metalogix can migrate content into SharePoint from a variety of source systems, from one SharePoint version to another (2003, 2007, 2010, WSSv2, or WSSv3), from ECM systems (e.g., eRoom, Stellent, Livelink), and from file systems, Exchange public folders, blogs, and Web sites. Metalogix migrates lists, libraries, permissions, and Web parts between servers. Metalogix Migration Solutions also work with Microsoft’s Business Productivity Online Suite (BPOS) with solutions to migrate SharePoint to Exchange Online.
- ⁹ EMC Documentum Content Services for SharePoint provides direct access to the EMC Documentum Content Server natively through the Microsoft SharePoint interface. Content Services for SharePoint can leverage the SharePoint user interface as an alternative client to the EMC Documentum repository. Documentum features such as document life cycles, business process management, capture of images and scanned documents, and automatic classification can be applied to content managed through SharePoint.
- ¹⁰ IBM Content Integrator Enterprise Edition software delivers federated access to IBM Content Manager, IBM Content Manager OnDemand, IBM WebSphere Portal Document Manager, IBM WebSphere MQ Workflow, IBM Lotus Notes, IBM Lotus Domino Document Manager, IBM FileNet Content Services, IBM FileNet Image Services, IBM FileNet Image Services Resource Adapter, IBM FileNet Content Manager,

EMC Documentum Content Server, Microsoft Index Server/New Technology File System (NTFS), Microsoft SharePoint 2003 and 2007, Open Text Livelink, and Hummingbird Enterprise DM and read-only access to relational database systems, including IBM DB2 Universal Database, Informix, and Oracle. It makes disparate IBM and non-IBM content sources look and act as a single unified repository. Version 8.5.1 also extends service-oriented-architecture-style interfaces and capabilities, provides better support for IBM data sources, and includes new preconfigured connectors. Additionally, version 8.5.1 can be deployed natively on the IBM System z and Linux on System z platforms.

- ¹¹ EMC Documentum enterprise content integration solution adapter library supports the Documentum repository, eRoom, Xerox DocuShare, Lotus Notes, Microsoft Exchange Server, and any Oracle and JDBC/ODBC database. The core ECI service leverages the search capability of the source repository, eliminating specific catalog development.
- ¹² The Open Text Integration Center, based on Genio acquisition with Hummingbird, is a data and content integration platform that helps solve data and content migrations, data archiving, legacy decommissioning, library consolidations, information warehousing, and application integration.
- ¹³ BrainTribe is a content connectivity vendor that offers a variety of connectors to ECM environments including SharePoint, Open Text, Alfresco, Documentum, file servers, and infrastructure (e.g., IBM/Lotus Notes, MS Exchange, and Novell GroupWise). The content service platform includes content capture, classification functionality, and a layer of abstraction on top of various content repositories. Software AG has a partnership to address document-centric processes with BrainTribe with a focus on integrating it with Web methods BPMS in an upcoming release.

SeeUnity is a developer of SharePoint-driven content integration and migration solutions. The sources may be ECM systems, line-of-business applications, databases, or file shares.

Vorsite is a Microsoft Gold Certified vendor that originally developed SharePoint connectors OEM'd by the ECM community. In addition to this expertise, the company specializes in migration and implementation of the Business Productivity Online Suite (part of Microsoft Online Services) and in upgrading Exchange and evaluating Exchange Online, MOSS 2007 and SharePoint Online, Microsoft Search Server, and FAST.

Forrester has not done a formal evaluation of independent image viewers, but these products are often the subject of inquiries with Forrester clients. They include Daeja ViewONE, Kyte Viewer, Open Text Thin Client, Oracle AutoVue, Snowbound, and the Ajax document viewer are strong examples in this category.

- ¹⁴ COLD stands for "Computer Output to Laser Disk," often considered part of a document management offering and used to archive and manage reports. The traditional sweet spot for COLD apps were mainframe reports and recurring statements for customers. They supported strong business cases because often the reports were archived to Microfilm/fiche or CDs at some expense, sometimes printed, and were also difficult to retrieve. The more current term for this area is Enterprise report Management or ERM.
- ¹⁵ EntropySoft's primary business is providing connectors for enterprise search, eDiscovery apps, and business process discovery. It will soon have 35 bidirectional CMIS adapters to unstructured repositories — and is focused on the integration of unstructured data to facilitate content access and make content interoperability easy.

- ¹⁶ Kapow Technologies focuses on data not owned by IT and potentially outside the organization on Web sites — for example, Web scraping for voice of the customer analysis — but also has capability for content migration. Kapow partners with Endeca OSI Open Source Intelligence.
- ¹⁷ Initially launched by EMC, IBM, and Microsoft, the group now includes Alfresco, Open Text, Oracle, and SAP. CMIS provides a common object model to describe unstructured content and metadata. The specification enables applications to perform basic operations, such as create, read, update, and delete (known in the industry as CRUD). It can enable full-text search and also supports SOAP and REST bindings for connecting to repositories and moving data. Microsoft, along with IBM, EMC, and several other content management vendors, has developed CMIS to solve the challenges customers with multivendor ECM systems face by providing a means of accessing ECM repositories, independent of their platform or language.
- ¹⁸ Meaningful use is a concept pushed by the recent healthcare legislation to encourage the digitization and interoperability of medical records. Unstructured content in a CMIS-compliant XML format will encourage ISVs to develop applications to tap into these repositories. For a description of meaningful use, see the May 20, 2010, “[Electronic Medical Records Need More To Support ‘Meaningful Use’](#)” report.
- ¹⁹ Forrester evaluated systems integrators that have ECM practices. These integrators offer ECI services for clients. For a description of the top ECM integrators, see the November 14, 2008, “[ECM Systems Integrators: Fit Matters Most](#)” report.
- ²⁰ HCL Technologies has 17 years of content management services experience and has developed an enterprise content consolidation framework that helps customer visualize and understand the return on investments, including repository utilization while migrating or federating content. The tool addresses more than 15 ECM technologies and migrates/federates content across these platforms.
- ²¹ Verinon has been an EMC Global Services partner since 2004, providing Documentum consulting, Documentum services, and Documentum support with 150 Documentum consultants globally. Verinon also offers SharePoint consultants and SharePoint migration services in both onsite and offshore models.
- ²² Kodak Digital-to-Digital Conversion Services is also an option where you hand over your media, which is safeguarded in a fireproof vault at Kodak’s Conversion Center. A bar-code-tracking system logs all media. Content is converted and made available in a prescribed format.

FORRESTER®

Making Leaders Successful Every Day

Headquarters

Forrester Research, Inc.
400 Technology Square
Cambridge, MA 02139 USA
Tel: +1 617.613.6000
Fax: +1 617.613.5000
Email: forrester@forrester.com
Nasdaq symbol: FORR
www.forrester.com

Research and Sales Offices

Forrester has research centers and sales offices in more than 27 cities internationally, including Amsterdam; Cambridge, Mass.; Dallas; Dubai; Foster City, Calif.; Frankfurt; London; Madrid; Sydney; Tel Aviv; and Toronto.

For a complete list of worldwide locations visit www.forrester.com/about.

For information on hard-copy or electronic reprints, please contact Client Support at +1 866.367.7378, +1 617.613.5730, or clientsupport@forrester.com.

We offer quantity discounts and special pricing for academic and nonprofit institutions.

Forrester Research, Inc. (Nasdaq: FORR) is an independent research company that provides pragmatic and forward-thinking advice to global leaders in business and technology. Forrester works with professionals in 19 key roles at major companies providing proprietary research, customer insight, consulting, events, and peer-to-peer executive programs. For more than 27 years, Forrester has been making IT, marketing, and technology industry leaders successful every day. For more information, visit www.forrester.com.