

Integrating Adobe® LiveCycle® ES and Microsoft Office SharePoint® Server

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Abstract

Today, many organizations are implementing applications using Adobe enterprise technologies to build more engaging experiences for their customers, partners, and internal users. These organizations also need to leverage their investments in existing enterprise content management systems (ECMs) such as Microsoft Office SharePoint Server (MOSS) 2007. This paper provides two scenarios that illustrate how integrating Adobe LiveCycle ES (Enterprise Suite) software and MOSS can achieve additional productivity and efficiency for your organization.

Introduction

Adobe LiveCycle ES helps organizations build more engaging experiences that scale from paper forms to rich, interactive online applications. Through an integrated server solution that blends data capture, information assurance, document output, process management, and content services, organizations can quickly deploy rich, engaging applications that reduce paperwork, accelerate decision making, and help ensure regulatory compliance. With Adobe LiveCycle ES, organizations can deliver applications that leverage their existing investments in ECM systems, home-grown repositories and legacy systems, or emerging hybrid content management and collaboration applications such as Microsoft's SharePoint technologies.

Today, some organizations are leveraging MOSS 2007 to help them organize and manage their data and documents. MOSS is a server solution that is part of the 2007 Microsoft Office system. Organizations can use MOSS to facilitate collaboration, manage documents, create portal sites, perform enterprise-level searches, and participate in forms-driven business processes. However, most ECM solutions, including MOSS, do not provide the necessary facilities to implement engaging end-to-end experiences. A few examples of issues that ECM solutions do not address comprehensively include improving the way users engage with information and processes, and document security and rights management outside the firewall.

Through the integration of Adobe LiveCycle ES, organizations can achieve additional productivity and efficiency with their legacy ECM solutions. Integrating of these product lines allows organizations to build applications that are more engaging, integrate and extended business processes, manage documents within a common document repository model, and protect sensitive information outside the firewall. Although MOSS and LiveCycle ES provide organizations with unique standalone offerings, these solutions can easily support a symbiotic integration of capabilities that extends the value offered by traditional ECM systems. An integrated solution provides organizations with capabilities that include support for rich, interactive applications; business process management; and improved document search, management, and output; as illustrated in figure 1.

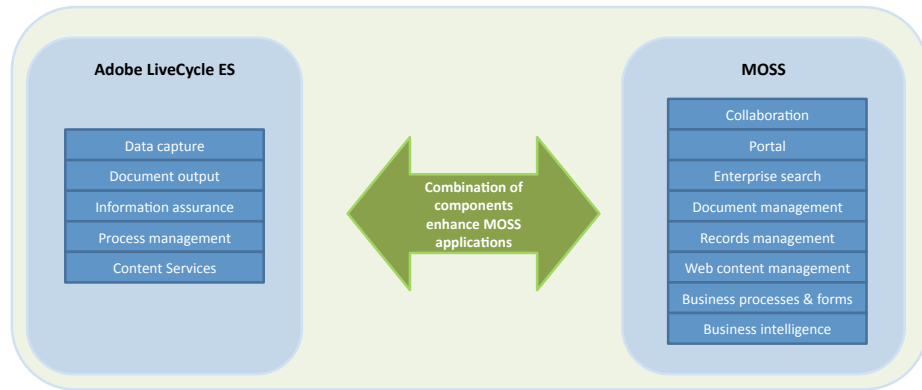


Figure 1. Enhanced MOSS-LiveCycle ES integration

By combining Adobe’s best-in-class forms and business process management solution with Microsoft’s content management, portal, and collaboration solution, organizations can easily automate expensive, paper-based solutions while securing sensitive documents and data to deliver a truly engaging experience.

This paper provides the following two scenarios to illustrate how integrating Adobe LiveCycle ES and MOSS can achieve additional productivity and efficiency for your organization.

- End-to-end business processes
- Document security and rights management

The end-to-end business process scenario describes how MOSS and LiveCycle ES can be integrated to improve an existing business process by leveraging a central repository and easily adding capabilities to manage workflow, human interaction, and document packaging and archiving. The document security and rights management scenario describes how a joint solution can improve the protection of sensitive information by enabling applications to leverage a central repository, helping to ensure confidence inside and outside the organization.

End-to-end business processes

A business process is a collection of related activities that together achieve a specific business goal. Common business process examples might include new account enrollment, loan application processing, claims processing, automated e-mail response, patient registration, and so on. Typically a business process involves data collection (paper-based, electronic form, or rich Internet application), review and approval, and a hand-off. The goal of any business process is to increase effectiveness, efficiency, and transparency while ultimately reducing costs associated with processing overhead. Business process automation allows organizations to dramatically reduce overhead associated with data collection and handoffs, increase reporting and visibility into the business, and focus on the decisions that businesses perform best.

Integrating LiveCycle ES and MOSS provides organizations with enhanced data capture and business process management capabilities.

With Adobe technology, organizations can take advantage of ubiquitous client software such as Adobe Reader® and Adobe Flash® Player, and standard web browsers. You can create applications with a consistent, intuitive, and familiar user interface. Adobe LiveCycle ES allows users to interact directly with electronic forms using a wizard-like user interface that is very similar to the paper-based forms they are familiar with (figure 2). You can also create forms with context-sensitive questions and dynamically populate data. For example, the processing of a mortgage application can be a very manual process ending with archiving of the application in storage or possibly within SharePoint. The integration of Adobe LiveCycle ES facilitates the automation of the data capture process electronically. And, Adobe LiveCycle ES solution components support advanced features such as automating the capture of form data using dynamic 2D barcodes, managing usage rights to protect sensitive information, and creation and assembly of PDF documents.

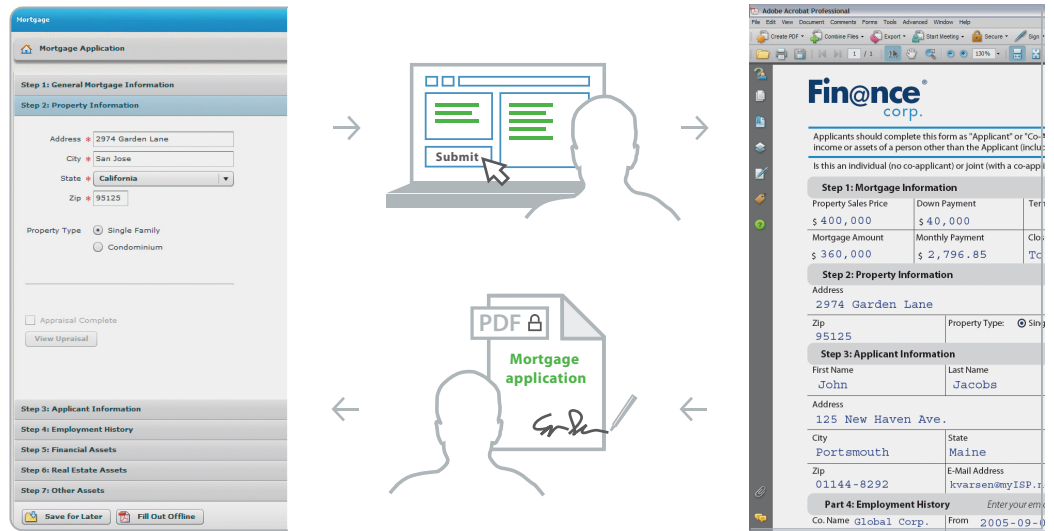


Figure 2. Users enter data into a PDF form using a wizard-like user interface

When a mortgage application is completed online using an electronic form or PDF document, the data can be used to automate processes or even create additional forms required by other departments. Adobe LiveCycle ES provides the process management capability to automate these business processes, including designing, managing, monitoring, and optimizing human-centric processes. It can also automate approvals, handoffs, and business-activity monitoring, providing the auditing, compliance, and transparency required by organizations. The new automated process allows organizations to streamline human-centric business processes and decrease processing time from days to minutes.

Figure 3 uses a mortgage application as an example of how LiveCycle ES can process documents added to SharePoint to initiate and automate the approval process, supporting manual review where required (for example, amounts over \$500,000). In this scenario, once an application is approved or rejected, either automatically or manually, the Adobe LiveCycle ES process can assemble the standard approval package—including a customized welcome letter, a copy of the original application, and any other supporting documentation into a single PDF file—and add it to the SharePoint document repository for delivery (Figure 4). Adobe LiveCycle ES capabilities include document assembly and generation, ensuring consistently formatted output for customer or partner communications. LiveCycle ES can add headers/footers, watermarks, and overlays, and perform other automated format functions.

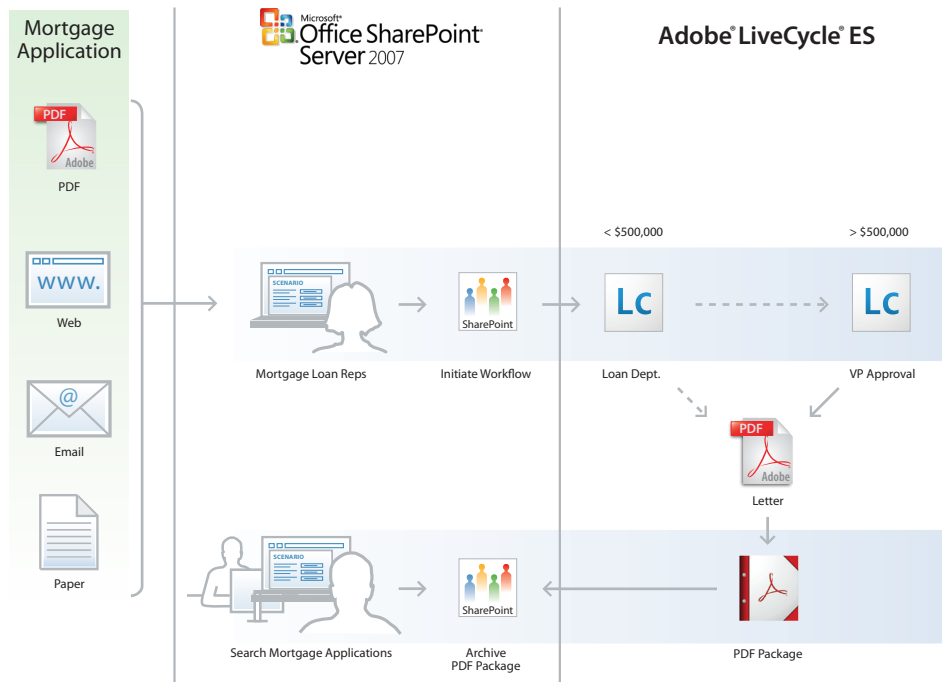


Figure 3. Mortgage application workflow

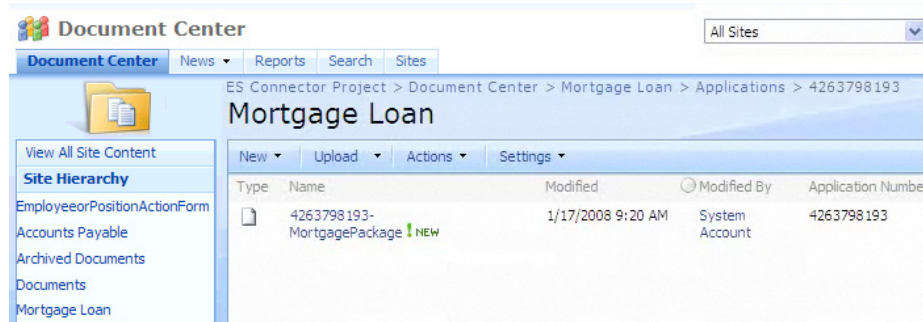


Figure 4. Final assembled PDF document added to the SharePoint document repository

As forms are completed, MOSS provides an enterprise document repository for the content. This allows information to be correctly catalogued, searched, and subsequently archived.

The MOSS interface provides advanced capabilities to augment both solutions:

- Form data can be catalogued directly in SharePoint to support complex searches. For example, businesses can quickly retrieve applications over a particular amount, specific to a certain geographic location, or within a data range using information pulled from an electronic form and catalogued using LiveCycle ES integration.
- Forms can be auto-classified as the appropriate document type and stored in the proper location in SharePoint. For example, mortgage applications and department documents that are auto-classified would be stored with their document type. Mortgage applications would be stored in the mortgage application directory, and department documents would be stored in the department directory.
- LiveCycle work items can be approved/rejected directly from within SharePoint, instead of simply viewing documents from the native document management repository.

Figure 5 summarizes the key benefits of integrating LiveCycle ES and MOSS for an end-to-end business.

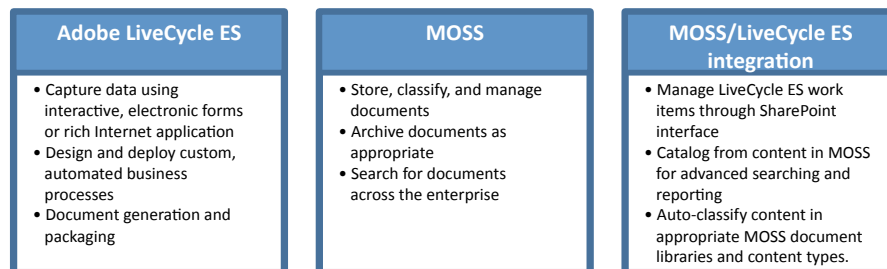


Figure 5. Integrating MOSS and LiveCycle ES for an end-to-end business process

The integration of Adobe technologies allows organizations to extend MOSS to:

- Dramatically improve the way users find, access, and engage with information and processes
- Provide access to a rich set of tools and integrated resources that enable developers to be efficient and productive
- Automate data capture, metadata mapping, document management, and assembly without users realizing that these processes are not completed directly by the SharePoint server

Document security and rights management

Protecting sensitive information is a top priority for most organizations today. Through SharePoint Server and Adobe LiveCycle ES, organizations can protect their confidential information from insider threats, such as e-mails inadvertently sent to the wrong person, or worse, malicious acts by an employee, and protect documents distributed outside the organization's firewall from external threats.

Most ECM solutions, including MOSS, provide authentication and authorization capabilities. Whether custom and proprietary, or integrated with existing Lightweight Directory Access Protocol (LDAP) directory services, this security is mandatory to protect sensitive documents from being downloaded or viewed by unauthorized individuals. However, is once these documents are downloaded by authorized

users, the ECM solution's security controls over that document typically end. Thus, a user can e-mail, print, or modify the documents without restraint.

Integrating LiveCycle ES into an existing MOSS implementation provides rights management, document certification, and digital signature capabilities. In addition to the password protection and encryption capabilities built into the PDF document specification, Adobe LiveCycle ES allows you to control access to critical business information even when it is erroneously distributed outside the organization. It allows you to create audit trails or dynamically change document policies even after they have been distributed outside the firewall. Not only can certified document delivery through Adobe Reader allow recipients to validate that the documents come from a trusted source, but organizations can also control who has access to these particular documents, even when they move beyond the firewall.

In addition to protection from data leakage risks, document version control can be an issue where older versions of documents can be in circulation or saved to local employee desktops. While LiveCycle ES provides security protection for documents downloaded from the SharePoint repository, this model can be extended to turn off access rights to older document versions and direct users to download the updated file from SharePoint. This functionality allows authors to revoke access to outdated files and automatically provide access to current versions as they are published.

Combining MOSS and LiveCycle ES allows consistent user access restrictions to be used for documents stored within SharePoint and downloaded documents. Integration with Active Directory enables LiveCycle ES to add the same user access rights to PDF files, MOSS documents, and CAD formats. LiveCycle ES is integrated with Adobe Acrobat® and Adobe Reader software to support 2D and 3D design data, parts lists, and information from applications including Parametric Technology Corporation (PTC) Pro/ENGINEER, XML Studio, and CATIA V5 software. Protected documents can contain text, audio, and video files or any information that can be saved in a supported document. Rights-protected PDF files can be viewed using Reader—a free, ubiquitous, cross-platform viewer. No additional software is needed to view protected documents.

Recipients can view and work with rights-protected documents both online and offline. For offline use, recipients can be assigned an offline lease that entitles them to access and view protected information for a prescribed period after which the document becomes inaccessible and their access rights must be renewed.

Figure 6 shows how integrating LiveCycle ES and MOSS can provide document security and rights management capabilities.

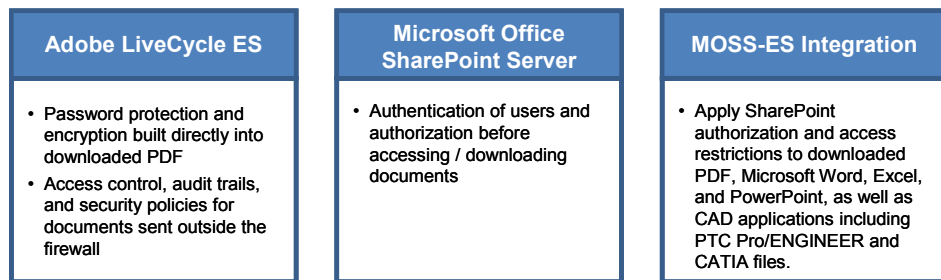


Figure 6. Integrating MOSS and LiveCycle ES provides document security and rights management

Extending MOSS with Adobe LiveCycle ES allows organizations to:

- Manage usage rights to protect sensitive documents in PDF and Microsoft Office documents, or CAD formats
- Automate the signing, certification, and validation of digital signatures in PDF documents
- Create audit trails or dynamically change document policies such as access control, expiration dates of credentials, revocation, and revision control, even after distribution outside the firewall

Integration development and implementation

These two scenarios help illustrate the significant value that can be achieved through the integration of MOSS and Adobe LiveCycle ES. Both Microsoft and Adobe provide traditional software development kits (SDKs) and APIs for developing custom applications. However, given the increasing popularity of service-oriented architecture (SOA) and web services, both MOSS and LiveCycle ES provide facilities for integration through web services.

With the release of MOSS 2007, Microsoft has increased the number of services made available through web services to connect with and exchange information between SharePoint and Enterprise systems. By design, LiveCycle ES provides a base platform allowing services to be called by one or more document applications. Developers can connect multiple process steps into a single web service that is also made available through the platform.

Support for web services by both Microsoft and Adobe provides organizations with a significant integration alternative (see figure 6). Due to the technology agnostic and loose coupling nature of web services, it also provides one of the most cost-effective alternatives to decrease development and future maintenance costs. Specifically, as long as a service continues to provide the appropriate functionality, how that functionality is implemented can change without requiring changes in the consumer applications. It is possible to introduce new versions of services without requiring simultaneous upgrades to the services' consumer applications.

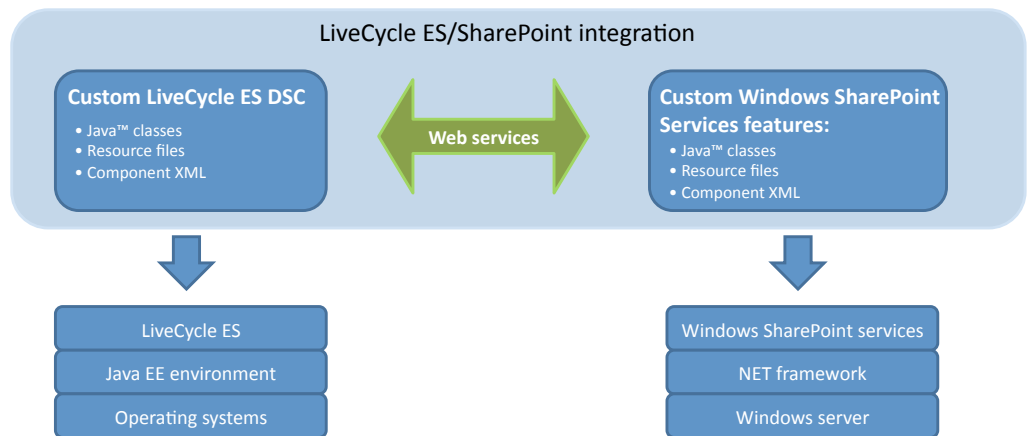


Figure 7. Web services Integration of Adobe LiveCycle ES and MOSS

Adobe LiveCycle ES also provides customization capabilities that allow integration with SharePoint that do not require custom development through web services. Where LiveCycle Process Management ES provides the facilities to design, manage, monitor, and optimize human-centric processes. It also includes Adobe LiveCycle Workspace ES, a rich Internet application that allows users to participate in human-centric business processes. Users can initiate new processes; sort, manage, and respond to assignments; escalate, delegate, and prioritize tasks; and search for existing processes. Instead of requiring users to switch between multiple application interfaces, Workspace ES can be integrated as a Web Part in SharePoint to provide a unified user interface while supporting Microsoft® Windows® single sign-on feature through Simple and Protected GSSAPI Negotiation Mechanism (SPNEGO) integration, as shown in figure 8.

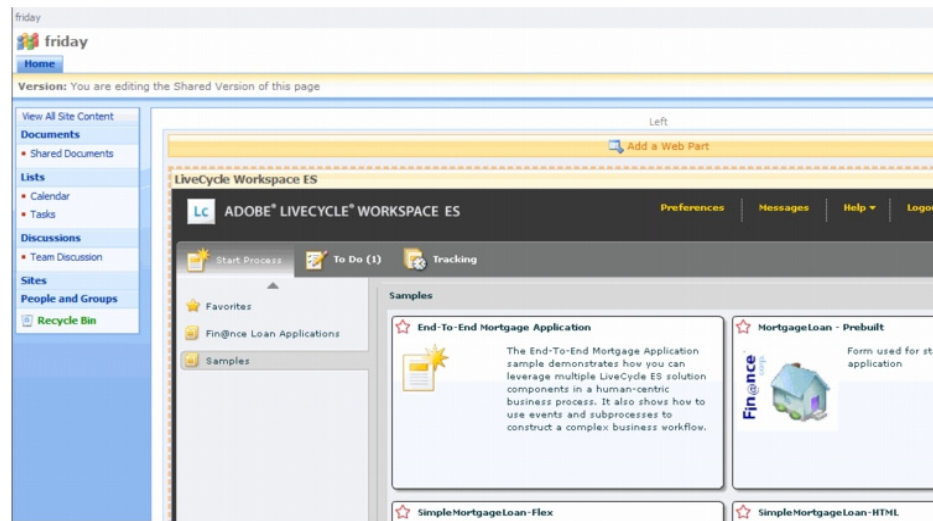


Figure 8. LiveCycle Workspace ES interface inside SharePoint

In addition to rebranding, changing images, and modifying colors and styles to meet the common look and feel of the organization, developers can use Adobe Flex® software to customize the core components of LiveCycle Workspace ES. The different capabilities of Workspace ES can be used to create multiple components based on specific task requirements. For example, an organization may have users, such as customers service representatives or loan applicants, who start processes but do not participate in business processes. Similarly, not all users will need to access the To Do tab. With Workspace ES, you can create separate components for these specific needs.

This customization, combined with SharePoint software’s capabilities for incorporating Web Parts, eliminates the need for multiple user applications to complete ongoing business tasks. For example, an employee using SharePoint can have access to the Workspace ES interface directly through the SharePoint portal. You can create an executive summary page to provide a customized workspace view for reporting and analytics in addition to other dashboards unrelated to LiveCycle ES. Users do not need to switch between separate applications or interfaces (SharePoint and Workspace ES) as documents progress through each stage of the business process.

In addition to the support provided by Microsoft and Adobe to integrate MOSS and LiveCycle ES, third-party solutions can also provide this type of integration out of the box. For example, Cardinal Solutions can provide Microsoft and Adobe customers with the fundamental building blocks for content management accessibility, automated document cataloging, process launching (based on events in SharePoint), and automatic digital rights management (DRM) synchronization. Cardinal LiveCycle SharePoint connectors provide developers with the necessary tools to create business process workflows that smoothly combine both Microsoft and Adobe solutions. These tools allow developers to quickly focus on creating business processes that span both software solutions instead of spending time creating integrated services.

Cardinal Solutions

Cardinal Solutions is a third-party solution provider that can help organizations capitalize on the tremendous value of integrating MOSS and Adobe LiveCycle ES. A leading system integrator for ECM, and product lifecycle management solutions, Cardinal can help accelerate organizations integration initiatives, providing technology expertise in enterprise Java solutions, enterprise Microsoft solutions, and data solutions. For more information, visit www.cardinalsolutions.com.

For more information

For more details about Adobe LiveCycle software and solutions, visit www.adobe.com/products/livecycle or contact your Adobe representative.

Summary

While this paper provides only two scenarios of integration between MOSS and Adobe LiveCycle ES, organizations can tailor integration to meet the specific needs of their businesses. An integrated end-to-end solution provides the opportunity for organizations to reduce costs associated with costly paper-based business processes, accelerate time to fulfillment, and more importantly improve customer satisfaction and employee productivity.

In many cases, organizations have started using Windows SharePoint Services, included with Windows Server® 2003 licensing, within multiple departments of the their organization; some have even implemented the richer featured MOSS. Similarly, many organizations have implemented Adobe LiveCycle ES as a full platform for business process management including business activity monitoring. While both of these vendor solutions provide value in themselves, organizations can capitalize on the additional value provided through their integration. Together, MOSS and LiveCycle ES provide organizations with an integrated end-to-end solution for document management, document assembly, document security, process automation, and ultimately cost reductions.



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