



Adobe® LiveCycle® solutions for intuitive user experiences

Table of contents

- 1 Executive Summary
- 1 Introduction
- 1 Challenges facing organizations today
- 2 How your customers can benefit from more intuitive user experiences
- 3 How your organization can benefit from more intuitive user experiences
- 3 Why Adobe LiveCycle ES2?
- 5 Extend the value of your technology infrastructure
- 6 Adobe LiveCycle in action
- 6 Conclusion

Executive summary

Businesses and government agencies have invested heavily in enterprise applications like enterprise resource planning (ERP), customer relationship management (CRM), and enterprise content management (ECM), but continue to struggle with finding ways to allow individuals to access and interact with the data stored within them. The basic web-based interfaces provided for many self-service applications are unintuitive and have limited capabilities, causing users to abandon them out of frustration. And people who need to interact with information from multiple applications to perform their jobs, such as financial advisors, procurement managers, and case workers, usually have to access and drill down on data from each application separately, reducing their productivity and impacting their ability to make informed decisions.

Self-service applications that include wizard-style guides or rich internet applications (RIAs) make it much easier for people to accomplish their tasks, whether it's opening a new account, ordering parts from a supplier, or registering for a government service. Built-in intelligence and rich media options provide users with whatever level of assistance they may require, increasing their likelihood of success. RIAs can also be used to build employee productivity applications that deliver customizable, composite views of multiple applications, displayed within the context of the task they are accomplishing—all in a single, easy-to-use interface.

With Adobe LiveCycle Enterprise Suite (ES2) software, organizations can easily build and deploy intuitive user experiences, using flexible, scalable guides and RIAs to help increase customer satisfaction, improve the quality of decision making, and achieve a lower total cost of ownership.

Introduction

The importance of providing customers with a positive user experience is not a new one. "Service with a smile," "100% satisfaction guaranteed," and "The customer is always right" are all classic examples of ways companies have incorporated this concept into their business practices when dealing with customers in person, by mail, or on the phone. However, as business activities have increasingly moved online, many companies have struggled with how to provide their customers with a similar positive experience.

The quality of the user experience isn't just important for customers. Employees—from senior executives to call center representatives—need to be able to get the information they want, when and how they want it or they can end up making poor decisions and delivering substandard customer service.

While many companies have invested heavily in their back-end systems to increase efficiencies, technical limitations have prevented them from creating user interfaces that are dynamic, personalized, and easy to use. Adobe LiveCycle ES2 helps organizations build RIAs that make it easier for people to access and interact with information from existing business applications for a more efficient and satisfactory experience from beginning to end.

Challenges facing organizations today

Businesses and government agencies have invested heavily in enterprise applications like ERP, CRM, and ECM. These applications contain a wealth of information about customers, partners, employees, and constituents. Many organizations have created web-based front ends to give people who don't directly use these applications the ability to work with the information stored in them. However, these interfaces have not been widely adopted because many are simply not that easy to use.

Making government more intuitive

Government agencies have particularly struggled when it comes to using technology to deliver services to constituents. The primary reason is that the technology they've invested in was designed to streamline back-end processes, not to help the person who is trying to apply for benefits or file tax returns. But as citizens have become more accustomed to the conveniences of e-commerce, online banking, instant messaging, mobile communications, and other technologies that give them the information they need, when they need it, the idea of filling out dozens of forms by hand (even when the forms are available online to download) or providing the same information repeatedly has become unacceptable.

For example, one of the areas where organizations have struggled is with self-service applications such as account enrollment and servicing, eMortgages, product selection, and supply chain ordering. Many organizations currently provide online forms, in PDF or HTML, which are fine for simple processes. But, when the process is more complex, users become frustrated and often abandon it mid-stream. For instance, a person may be applying for a new investment account and, partway through, realizes he needs to provide financial information that he doesn't have time to gather right at the moment. If the system doesn't have the ability to retain the information already entered, he'll have to re-enter it the next time he logs in—a time-consuming and frustrating experience.

The situation is further complicated by the fact that different people have different levels of comfort and knowledge with different types of processes. A prime example would be filing taxes online—unless you're a certified accountant, an electronic replica of a paper tax form isn't going to provide much value. Many people need to be walked through the process step by step. On the other hand, someone who fills in the same type of information all the time—for example, an insurance broker completing an application on a customer's behalf—probably doesn't want to waste time going through multiple screens when it is easier to scroll through a familiar document-based form.

Employee productivity applications are another area where the user experience is often less than ideal. These are applications like a financial advisor's desktop, a sales workplace, or a case management application. In these situations, people need to bring together information from multiple applications—both internal and external to the organization—to fully understand a given situation so they can provide appropriate advice and make more effective decisions. Currently, users often need to move back and forth between different applications to interact with and update each separately, reducing productivity and introducing costly delays and errors into the process.

Another challenge is giving business users the ability to customize their views for their own habits, working styles, and preferences—for example, people in different roles at the same company may need to interact with different applications at different times. If they can't add, remove, or rearrange these applications themselves, they're forced to call on IT resources for assistance, which then takes those people away from activities that could add more value to the organization.

One type of employee productivity application where the front end is especially important is real-time dashboards, like those used for supply chain management, patient tracking in hospitals, monitoring call center volumes, and financial desktops. These applications need to aggregate high volumes of data from multiple sources to increase visibility into business performance and unusual conditions. Systems need to respond automatically to situations based on predefined criteria or to send alerts to managers, enabling organizations to act more quickly on critical issues—for example, dealing with a report of a workplace accident.

To respond to all these challenges, companies and agencies can develop intuitive user experiences using wizard-style guided navigation or fully interactive RIAs that easily integrate with the organization's existing processes and technology infrastructure.

How your customers can benefit from more intuitive user experiences

When it comes to self-service applications, guides and RIAs help people accomplish the task they're trying to do by providing step-by-step assistance—increasing their likelihood of a successful transaction.

Here are some additional ways the experience can be made more intuitive:

- Prepopulate fields with existing data, saving users from having to repeat the same information multiple times and reducing the risk of errors.
- Ask only questions that are relevant to an individual's situation and automatically skip sections that don't apply.
- Include rich media (for example, how-to videos, contextual help) that offer people a variety of ways to understand the process.
- Incorporate live voice or text chat with experts who can answer questions and solve problems on the spot.
- Present real-time data to facilitate time-sensitive processes and help people make better informed decisions.

Health care help

A leading provider of technology services to the health care industry, Acesis, Inc. used LiveCycle to develop Point-of-Care, an innovative system for physicians to capture and access clinical patient information using either an Adobe AIR™ based desktop interface or a web-based RIA.

As doctors examine patients, the application dynamically responds to the data being entered. For example, if the doctor notes the presence of a heart murmur, the Point-of-Care system automatically displays fields related to that condition. "The dynamic nature of Acesis forms promotes quality, enhances efficiency of data capture, and expands the functionality of office staff," says Stephanie Bloom, MD, chief medical officer at Acesis.

Automating the payment process

Optimal Payments, a global provider of proprietary payment processing services, developed an RIA-based recurring billing tool using LiveCycle. This tool includes a form-based interface for merchants to enter customer billing data, automatically generates an e-mail to customers when a transaction has occurred, and provides a visually rich dashboard for analysts to drill down on billing records.

Read the full story.

- Operate in online and offline modes for greater convenience and to support occasionally connected environments (for example, insurance adjusters in the field).
- Maintain a persistent state, so that any changes made by the users—such as customizing the layout, creating new views, or drilling down into information—are retained for future sessions.

When it comes to employee productivity applications, RIAs can aggregate multiple applications—from internal and external systems—into a single, customizable view so users have better insight into a situation. The various applications can include context so they automatically respond to changes in common parameters. For example, a financial advisor reviewing a client's portfolio in one application can click a specific stock symbol and another application that displays performance data will automatically drill down to that same stock.

RIAs can also incorporate highly interactive, graphical displays of information into powerful dashboard applications that offer business users real-time, deeper, and more meaningful data analysis.

How your organization can benefit from more intuitive user experiences

Organizations that provide guide- and RIA-based interfaces for their self-service applications are giving employees, customers, and partners greater flexibility to interact with them in a variety of ways, which, in turn, increases their level of satisfaction. By integrating these interfaces with other channels of interaction—online, offline, in person, or in print— organizations can also deliver a single solution that meets the different preferences and requirements of individuals.

Data captured via a guide or RIA can also integrate with data from other service channels, including paper, call centers, the web, in person, and mobile devices. For example, one customer may apply for a new investment account online using an RIA, another fills in a PDF form and prints it out with a barcode to mail in, while yet another works directly with a bank representative to set up the account. In all cases, the data follows the same process once it is submitted, eliminating redundancies that can result in costly delays and errors.

RIAs and guides can also be integrated with documents where desired, such as giving more experienced individuals who don't need to be walked through a process—for example, a call center representative—direct access to a PDF form, or for when a document is generated as a final step in a process, like contract terms and conditions.

By deploying more intuitive interfaces, organizations can also improve efficiencies and decrease costs associated with manual, paper-based processes. By eliminating redundant, routine tasks such as rekeying data into multiple back-end systems, employees can devote their time to activities that have a greater impact on the business. And by making processes easier for users, companies and agencies can reduce call center costs, since customers won't need to call as often.

For employee productivity applications, RIAs help knowledge workers be more productive and make better quality decisions because information can be aggregated from multiple sources and displayed within the context of the task they are accomplishing—all from a single, easy-to-use interface. Users don't have to be constantly opening up separate applications and drilling down on information in each one to try to figure out the relationships between them—any action taken on one application, such as updating data, will automatically and instantly update the other applications, reducing the need for users to repeat the same actions over and over.

The best RIA-based productivity applications also empower business users to customize their interfaces to suit their specific needs and preferences, freeing up IT resources for more value-added activities.

Why Adobe LiveCycle ES2?

Adobe LiveCycle ES2 helps companies deliver easy-to-use, personalized, and interactive applications that connect to automated processes, improving customer self-service and employee productivity, which increases adoption and satisfaction.

Self-service applications

LiveCycle solutions offer users highly engaging experiences that simplify the process of submitting data online. They integrate with the full spectrum of LiveCycle ES2 solutions, giving organizations a one-stop shop of data capture options, from full RIAs to guided navigation to basic PDF forms—all built from a single extensible platform.

Not just a pretty (inter)face

Atlanta-based MFG.com, the world's largest online marketplace for the manufacturing industry, uses an Adobe-based RIA to help buyers and sellers around the world connect with each other and complete complex transactions. In addition to the intuitive experience provided, LiveCycle enables the solution to:

- Push massive amounts of data out to the user, including changes as they happen in real time
- Convert 3D CAD data to 2D PDF format for easier sharing and collaboration
- Protect valuable intellectual property using policy-based rights management

"Together, Adobe LiveCycle Enterprise Suite and Adobe Flex® are uniquely positioned to deliver a scalable, compelling, easy-to-use environment that eliminates the technical barriers to doing business globally."

- David Crowder, senior vice president of technology, MFG.com

Read the full story.

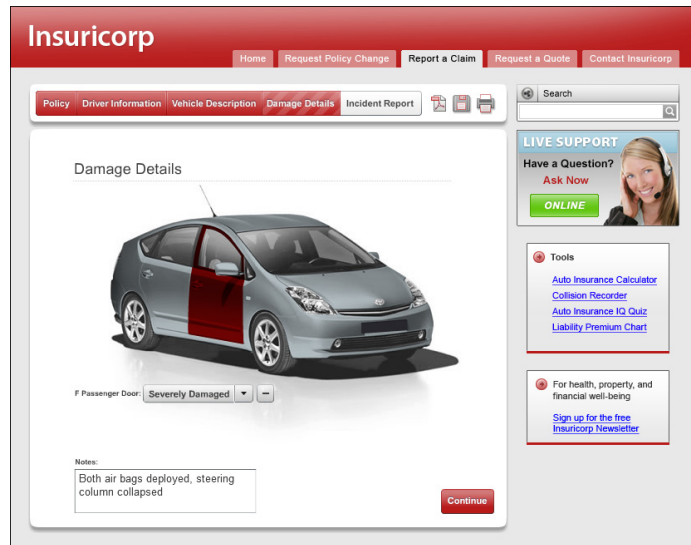
The client advantage

Adobe Flash Player and Adobe AIR are free software that work on most major platforms and operating systems, enabling anyone inside and outside the organization to participate in LiveCycle based solutions. Flash Player is already familiar to millions of users—it's currently deployed on more than 99% of Internet-enabled desktops—reducing training, support, and maintenance requirements. And AIR allows organizations to deliver branded RIAs on the desktop, giving them more capabilities than are available in a browser, as well as offering the flexibility to work online or offline.

With Adobe LiveCycle ES2, developers can build compelling, rich application interfaces quickly with minimal coding using a graphical design environment. Applications can include built-in intelligence, such as data prepopulation and dynamic fields, as well as rich media options like video and animations, to provide users with whatever level of assistance they need. And because of the speed and ease of development, companies can increase their agility so they're better able to respond to changing market conditions.

The solutions also support real-time collaboration in a variety of ways:

- Applications can include voice and chat options so users can connect with an organization's call center to get assistance on the spot.
- Multiple people can browse and interact with applications simultaneously, such as allowing different users to fill in different fields in a guide.
- Data can be automatically pushed out in real time to enable alerts and notifications.



This RIA provides customers with a guided navigation experience to help them file an insurance claim on their own, as well as the ability to chat with a company representative at any time if they have additional questions.

LiveCycle based RIAs and guides can be deployed with free Adobe Flash® Player and Adobe AIR clients, increasing the reach and adoption of the solutions. For example, in April 2009, the Polish Ministry of Finance deployed a LiveCycle solution that provides citizens with an AIR interface for downloading, completing, and submitting their tax forms. Within two days of going live, the number of electronic forms submitted surpassed the total number for all of 2008.

Applications built with LiveCycle are more robust and less intrusive because of its high quality control capability. And because LiveCycle integrates with existing enterprise and web application infrastructures, it's also easier to incorporate it into existing solutions.

Employee productivity applications

With LiveCycle ES2, organizations can deliver intuitive, user-centric applications to business users, allowing them to be more productive in their daily work. Developers can extend existing enterprise applications by exposing their business logic and user interfaces into application "tiles." These are context-aware user interface application components that can then be assembled to create unified customizable views that best suit the user's work habits and specific needs.

Business users access the tiles through rich, customizable views that allow them to interact with each application in a single interface. Because they don't need to sign into multiple applications and drill down to each one separately, their productivity is increased.

An example of the value of context awareness

A procurement manager can use a LiveCycle procurement application that contains tiles for current inventory levels, product specifications, vendor information, and standard documents such as contracts and forms. The inventory tile displays a dashboard alerting the manager that a part is running low. When the manager clicks the part, all the other tiles in the view are immediately refreshed to show additional data about the part, such as detailed specifications from the product lifecycle management (PLM) system, current or pending product changes, and lists of appropriate or preferred suppliers. By having all this information in one view, the manager can easily select the right suppliers and kick off the request for quotation process to source it.

Make better decisions

With this LiveCycle ES2 application, an insurance underwriter can see the full risk profile for a potential customer to decide whether to approve the request for coverage.

Less training is required for new employees as well, because the LiveCycle application can provide a very intuitive experience, eliminating the need for employees to learn all the features and navigation systems of each of the underlying source system—the new user interface gives them only what they need from the back-end systems. Also, because the applications maintain a persistent state, any changes made by users—such as customizing the layout, creating new views, or drilling down into information—are retained, so they don't need to repeat the same steps every time they return to the application.

From an IT point of view, LiveCycle uses a composition approach to enable developers to build applications faster. Instead of building a large monolithic application, developers can easily create application components (tiles) that expose business logic from existing Flex and HTML applications, extending the return on existing investments. Developers can work more effectively as a team by creating and testing different tiles in parallel, and later assembling them into an application. Tiles can also be stored in a catalog for sharing with others or for reuse in future projects. This approach also simplifies ongoing maintenance because developers can update and roll out one tile at a time instead of having to redeploy and retest the whole application.

The solutions include out-of-the-box skins, shells, and layout managers to help developers quickly create a variety of intuitive interfaces. They can also use their own skins, shells, and customized layout managers to brand the applications with their own look and feel.

Because LiveCycle ES2 includes an intuitive design environment for building custom interfaces, business analysts are empowered to collaborate more effectively with developers, helping to ensure that the applications fully meet the requirements of the business. It also makes it easier for analysts to make their own modifications to existing applications, reducing the demand on IT resources.

For dashboard applications, LiveCycle ES2 can incorporate rich media, such as video and animations, and handle large datasets with greater efficiency, providing an optimized user experience.

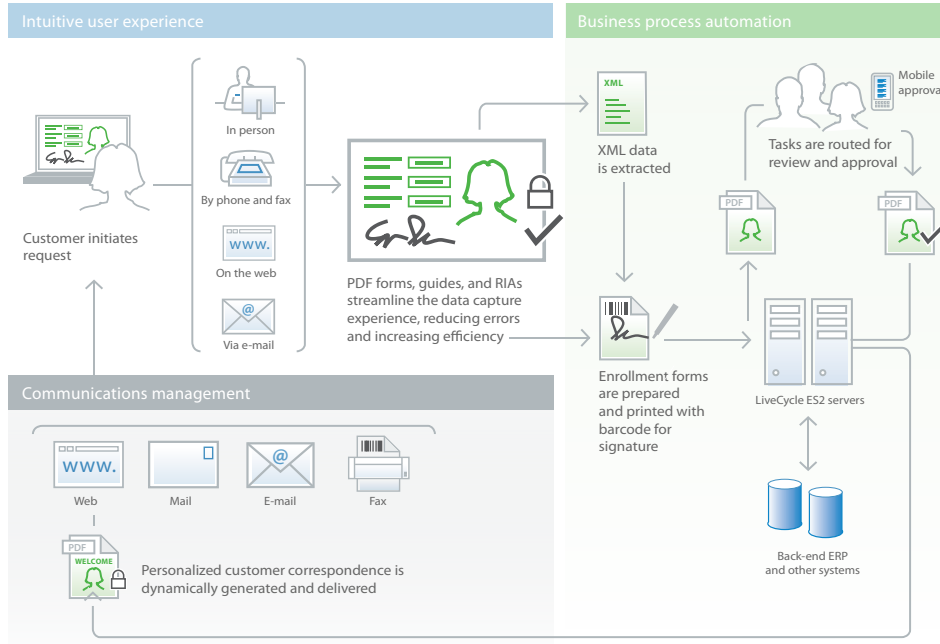
Extend the value of your technology infrastructure

Many companies' existing applications were built with a system-centric view of data (for example, business intelligence applications). LiveCycle solutions expose critical functionality of back-end systems through easy-to-use interfaces that are readily available for end users, which in turn increases adoption rates of these applications both internally and externally. They can also improve employee productivity by rejuvenating enterprise applications and portals.

LiveCycle ES2 also enables organizations to easily connect these RIAs to back-end processes so that they can manage complete end-to-end processes. This also allows organizations to address their biggest pain points first—achieving a rapid return on their investment—and to build on the platform at their own pace.

LiveCycle ES2 solution: Customer acquisition use case

Account enrollment example



Adobe LiveCycle ES2 helps organizations improve customer experiences and employee productivity by capturing, visualizing, and exchanging critical business information through integrated rich application interfaces, secure documents, and automated business processes.

Adobe LiveCycle in action

Every day, the London Borough of Southwark handles up to two million citizen requests for services ranging from issuing parking permits to providing housing and employment assistance. A standard application for registering a resident for housing benefits can be 45 pages long and require entry of more than 1,000 data items.

The innovative organization recognizes that improving citizen services requires more than putting basic forms online. "It's not just about posting online forms and promoting citizen self-service," explains Dominic Cain, head of client services in Southwark. "It's also about looking at ways to work smarter and more efficiently to meet residents' varied needs. In some cases, it makes perfect sense to put materials online. But for more complex services, it's better to adopt more intuitive, integrated tools."

In partnership with Vangent, Limited, a U.K. provider of services and technology, the borough used Adobe LiveCycle to develop their One Touch application, which automates the process for registering citizens for services. The solution provides an intuitive RIA based on Adobe Flash technology that connects smoothly with the borough's SAP, Oracle, and other legacy systems.

Since implementing One Touch, the borough has:

- Increased three-fold the number of services that many citizens access
- Reduced the number of calls citizens make for services from five to one
- Saved \$1.7 million by automating service processing
- Accelerated processing of some complex benefits requests, such as housing benefits, from 36 days to 1 day
- Accelerated employee training for complex benefits processing from 2 years to as little as 2 days

"The combination of Adobe LiveCycle ES and the Adobe Flash Platform is ideal for linking information and processes," explains Adrian Blair, head of professional services and ICT (Information and Communication Technology) at Vangent. "With Adobe Flex, we can build a rich client interface that runs in the ubiquitous Adobe Flash Player to make it easy for service representatives to capture information from residents and identify the types of services needed. Adobe LiveCycle ES can then quickly move new data, and data already in systems, into the appropriate forms for fulfillment."

Read the full story.

Conclusion

With Adobe LiveCycle ES2, companies can quickly and easily create highly intuitive user experiences to provide superior customer service, simplify processes, and improve the quality of decision making. LiveCycle achieves these results by delivering a solution that offers lower TCO, scalability, ubiquitous clients, and a standards-based framework for delivery.

To learn more about how your organization can benefit from LiveCycle solutions for intuitive user experiences, visit www.adobe.com/products/livecycle/solutions/realtimedatastreaming/index.html.

For more information

For more details about Adobe LiveCycle ES2, visit www.adobe.com/products/livecycle/



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