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# The Forrester Wave™: e-Forms Software, Q2 2006

by Barry Murphy

TECH CHOICES



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Adobe And IBM Lead In Our Lab-Based Product Evaluation

by **Barry Murphy**

with Connie Moore and Lucy Fossner

### EXECUTIVE SUMMARY

Forrester evaluated five e-forms software vendors across approximately 100 criteria and found that Adobe and IBM are the clear market leaders. Once viewed as a necessary bureaucratic evil, forms are increasingly utilized as a tool to systematically capture data, serve as an interface to a process step, and bridge the paper-digital divide. The drive to replace paper with digital forms led to the emergence of e-forms software that sits at the intersection of data, content, and process. In the last few years, vendor offerings have advanced greatly, with each vendor's approach being different. Adobe is a Leader, bringing together a user-friendly forms design environment with the ubiquitous Acrobat Reader rich client. IBM is a Leader providing unparalleled XML and digital signature support. Cardiff Software and Microsoft are Strong Performers, offering e-forms products appropriate for forms-driven horizontal business processes. And FileNet is a Strong Performer with an e-forms product aimed squarely at integrating forms into enterprise business processes.

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### NOTES & RESOURCES

Forrester conducted lab-based evaluations in March 2006 and interviewed five vendors plus three reference companies for each vendor. Vendors interviewed included: Adobe Systems, Cardiff Software, FileNet, IBM, and Microsoft.

#### **Related Research Documents**

["The Forrester Wave™: Content-Centric Applications, Q1 2006"](#)

March 29, 2006, Tech Choices

["Transactional, Business, And Persuasive Content: A Better Way To Look At Enterprise Content"](#)

December 21, 2005, Market Overview

["The Forrester Wave™: Enterprise Content Management Suites, Q3 2005"](#)

October 7, 2005, Tech Choices

## TARGET AUDIENCE

Business process executive, information management executive, IT operations executive

## PAPER ELIMINATION FIRST DROVE THE e-FORMS MARKET . . .

Ask most people what they think of forms and they will likely respond, “Ugh! I can’t stand them.” Chances are this reaction stems from the paper forms that make life complicated, such as tax forms and mortgage applications. Even in the business context, the average worker hates filling out vacation request forms or office supply requisitions because the process is either too complicated or takes too long.

Today, though, companies understand the benefits of digitizing paper-intensive, forms-driven processes. Reducing paper (and associated storage and management costs) is but one benefit — others include:

- **A better customer experience.** Just one look at the work involved in filling out tax forms clearly demonstrates how much better the user experience is when instead completing the form digitally. Instead of the person spending hours trying to find out why their math isn’t working — or worse, hearing from the IRS that their math was wrong — the electronic form prompts users if numbers in certain cells do not conform to given rules. The customer experiences less frustration and the IRS spends less time catching and fixing errors — a true win-win situation (except, of course, you still have to pay taxes).
- **A more standardized way to capture data.** An organization using forms can capture information that will eventually populate a back-end system. By making the form digital, the organization can incorporate rules in the form to ensure that data entered conforms to criteria ranging from formats (e.g., phone numbers, Social Security numbers) to schemas (e.g., one that matches the schema of the application to which the data will be routed). This saves the organization time both in error correction and in more straight-through processing of data to the applications where it will live.
- **A reduction in manual data entry.** For years, businesses and government agencies utilized large data entry staff to manually input information from forms into back-end applications. This practice was both costly and inefficient from a manpower perspective and fraught with the risk that chances for errors were high. By digitizing forms, organizations are able to eliminate costly data entry headcount (or deploy that headcount to more value-add tasks) and minimize errors by validating data at the point of entry.

### ... BUT THE REAL DRIVER NOW IS PROCESS MANAGEMENT AND EFFICIENCY

As processes become more automated, organizations should think of forms as more than a user interface to capture information from end users. When e-forms first emerged, the goal was to replicate a paper form on a computer screen. While this requirement is still typical of e-forms projects, it's also possible to utilize e-forms functionality in richer interactions with customers — creating a dynamic user experience that guides users through the process of filling in information.

Beyond the customer experience, e-forms bring efficiency and automation to business processes. e-forms are rarely used simply as a piece of content that is accessed a later date — virtually all forms contain information that is part of a process (or processes) and must be routed appropriately.<sup>1</sup>

To meet both form presentation and process automation requirements simultaneously, all e-forms products have become XML-based. Utilizing XML as the basic form language allows data to be shared more easily with back-end systems while presented in a flexible manner — either in browsers or thick clients. For e-forms vendors, XML support is now the only way to get skin in the game; but each vendor's approach to XML support differs, and buyers are confused about which approach is best. In the absence of a universally accepted standard, buyers must evaluate how each vendor's XML support works within a given IT environment

#### e-Forms Vendors Deliver Benefits In Different Ways

Organizations deploy e-forms to eliminate paper and gain process automation and efficiency. But the methodology for delivering that value varies among e-forms vendors. In general, the biggest areas of differentiation exist in:

- **XML support.** All the products in our evaluation are XML-based, which allows data to be shared from the forms application to other systems. But each product supports XML schemas (the defining structure of an XML document) differently. Adobe Systems, IBM, and Microsoft all have form template types that can be dynamically driven by multiple XML schemas. The schemas are synchronized at the client level — saving server processing and simplifying the process of getting data back to the application.

IBM utilizes Extensible Forms Description Language (XFDL) as the form templates language. XFDL is a forms design and document processing meta-language that not only dynamically drives forms presentation from multiple schemas but also guarantees that a form does not change from its inception to its receipt. Adobe's XML Forms Architecture (XFA) template acts as a container for data capture, presentation, and manipulation rules that apply to any and all form instances created from that template. Microsoft's approach is similar — InfoPath templates are XSN files. The XSN format is a cabinet (CAB) file format comprised of several discrete parts, including XML schemas, XSLT, Web services definitions, and other parts. Cardiff Software and FileNet both employ XML as the underlying language of forms but use server-side synchronization in order to support XML schemas.

- **Integration to enterprise content management (ECM) environments.** Because a form is a piece of content, it must be managed as such. Forms often represent a transactional record and may have stringent retention requirements. It's important that an e-forms product fit with an organization's existing ECM environment, where the versions of a form can be managed and records policies can be applied. Again, each vendor differs here: While all e-forms products could be integrated into just about any ECM environment, Adobe has packaged integration with most leading ECM platforms, followed by Cardiff. FileNet, IBM, and Microsoft have their own ECM offerings, and their e-forms products are optimized for their respective ECM platforms.<sup>2</sup>
- **Integration to business process management (BPM) environments.** The ability to build processes around a form or include a form in a larger enterprise business process is critical. All the evaluated e-forms products have corporate "cousins" that are workflow or BPM products. Organizations evaluating e-forms products must ensure a good fit with any existing or soon-to-be deployed BPM tools.

FileNet P8 eForms is inextricably linked to the FileNet P8 Process Engine, often making it the forms product of choice for existing P8 customers, but also negating the e-forms product as a potential solution for non customers.<sup>3</sup> Cardiff LiquidOffice Forms is a component of the company's LiquidOffice product that combines e-forms and BPM. IBM Workplace Forms can be complemented by the company's BPM integration suite. Adobe LiveCycle has a workflow component, as well as Quick Process Action Components (QPACs) that connect to business applications like ERP. And Microsoft InfoPath users can leverage the BPM capabilities of BizTalk and Windows Workflow Foundation.

- **Forms design environments.** Forms design can be a catch-22 — on one hand, nontechnical process owners should be able to quickly create and deploy forms; on the other hand, the design environment should also allow power users to create complex forms applications. Adobe, IBM, and Microsoft offer design environments that are business-user-friendly but also give advanced designers access to IDEs when required (Flex, Eclipse, and Visual Studio, respectively). Cardiff offers a business-user-friendly design environment; when advanced development is necessary, there is access to business rules engines partners or a code view where developers can hand-code more advanced forms. FileNet's design environment is not targeted at business users but rather at graphic designers who create forms for business analysts, who in turn access forms via the P8 Workplace client but cannot modify or create the forms.
- **Forms access methods.** Adobe is the hands-down Leader when it comes to distributing forms to end users. All the products evaluated can broadcast forms via browsers — that capability is no longer a differentiator. However, there are times when a browser simply cannot do what a rich client can, such as enable offline forms filling. The ubiquity (and free price point) of Acrobat Reader means that virtually all possible end users already have an Adobe rich client on

their machines. An organization can license Reader Extensions to turn on desired functionality within the Acrobat Reader client, such as write access. IBM and Microsoft both offer rich clients to enable functionality like offline forms filling, but neither has the reach of Acrobat.

### e-FORMS SOFTWARE EVALUATION OVERVIEW: IT'S NOT JUST ABOUT FORMS ACCESS

To assess the state of the e-forms software market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top e-forms software vendors using our Wave methodology. After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of approximately 100 evaluation criteria, which we grouped into three high-level buckets: strategy, market overview, and current offering (see Figure 1).

### Evaluated Vendors Handle Forms Projects Ranging From Simple To Complex

Forrester included five vendors in this assessment: Adobe Systems, Cardiff Software, FileNet, IBM, and Microsoft. Each of these vendors has:

- **An e-forms product appropriate for enterprisewide deployments.** While there are a number of niche e-forms solutions available that are aimed at either assisting a specific process like accounts payable or creating forms for a specific application like an ERP system (such as Formscape's solutions for ERP systems), we limited our evaluation to products built for any kind of process or application.
- **At least 250 enterprise customers using e-forms products.** Our evaluation focused on vendors with proven e-forms success across a large number of enterprise customers.
- **Advanced e-forms functionality without requiring an OEM partner.** Many ECM vendors have native e-forms capabilities but license a partner's e-forms product for advanced forms requirements. To focus on the market leaders, we limited our evaluation to products capable of handling both simple and complex e-forms requirements.

**Figure 1** Evaluation Criteria

CURRENT OFFERING	
Forms design interface	Does the product have an interface that allows nonprogrammers to create form templates, including definition of metadata for form presentation, content, structure, and behavior?
Forms deployment (distribution and access)	Can forms be made accessible to users in required formats and managed within a company's IT environment?
Forms processing (submission/ingestion)	What options exist for submitting/accepting both electronic and paper forms?
Architecture and platform	Is there support for the common platforms and standards-based architectures that large enterprises need?
STRATEGY	
Product strategy	What is the company's strategy for e-forms?
Corporate strategy	What is the company's overall strategy and how do e-forms fit into that?
Financial resources to support strategy	Is the vendor profitable, and what is the vendor's cash flow? Does the company have sufficient revenues, profits, and cash flow to support its strategies?
Cost	What is the cost of this product?
MARKET PRESENCE	
Installed base	How large is the vendor's installed base of customers for this product and for all products?
Revenue	What is the vendor's revenue over the past four quarters?
Revenue growth	What is the vendor's year-over-year revenue growth over the past four quarters?
Systems integrators	How extensive is the company's network of systems integrator partners?
Services	How strong are the vendor's implementation and training services?
Employees	How many engineers does the vendor have dedicated to this product? How big is the vendor's sales presence?
Technology partners	How strongly do technology partners support this product?

Source: Forrester Research, Inc.

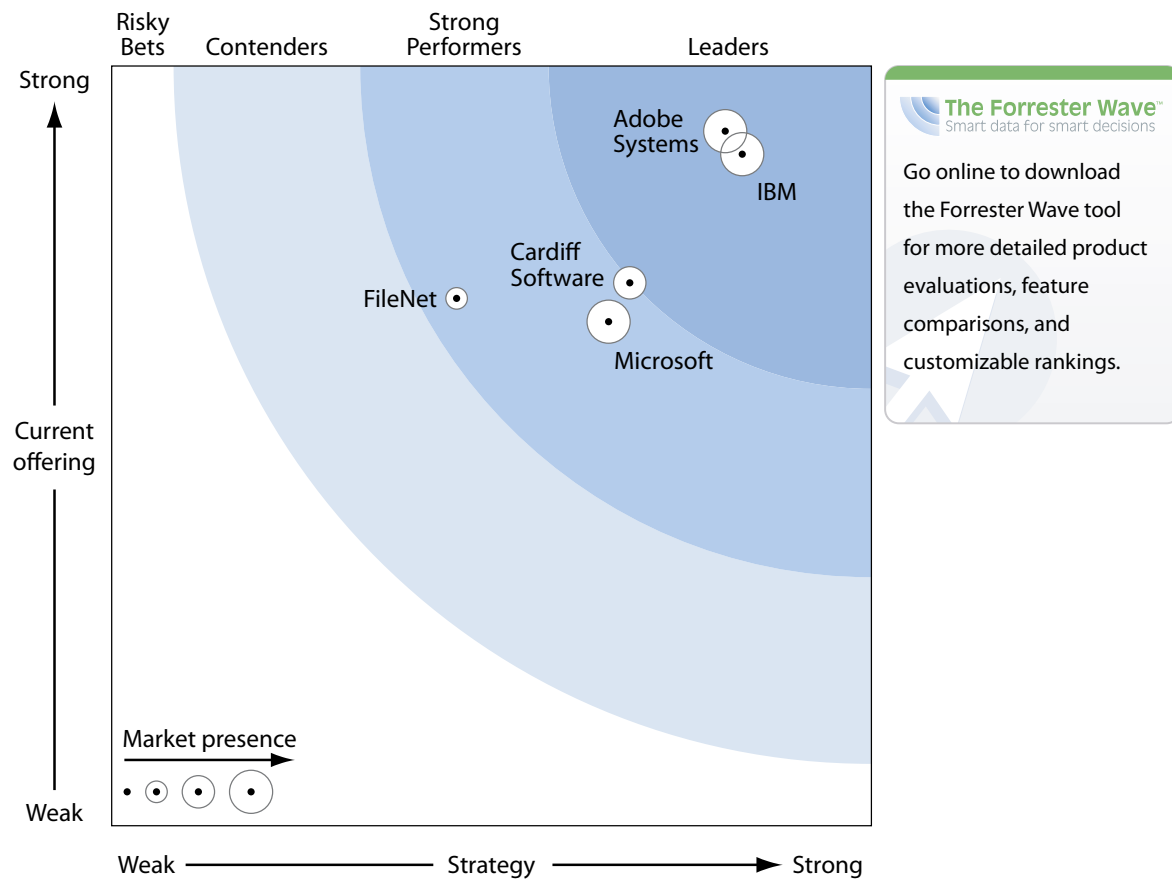
## VENDORS DIFFERENTIATE ON HOW THEY INTEGRATE FORMS INTO BROADER PRODUCTS

The five lab-based evaluations uncovered a market in which (see Figure 2):

- **Adobe and IBM clearly lead the pack.** Both vendors offer strong forms design environments usable by both nontechnical process designers and advanced forms designers, XML support, forms processing (ingestion of paper forms, online submission, and validation), and scalable architectures. Adobe has a slight edge in its current offering with comprehensive forms templates available out of the box, the best dynamic 2D bar code support, and advanced capabilities such as support for 3D images. IBM's strategy, though, is ahead by a hair. Both companies view forms as part of a wider interaction platform, but IBM is spearheading leadership of open standards such as XForms and has a much larger product portfolio for integrating forms applications.<sup>4</sup>
- **Cardiff Software is a dark horse that could easily play the spoiler.** LiquidOffice Forms is a strong product with a business-user-friendly design environment integrated into a broader BPM offering. The product's XML support lags behind what Adobe, IBM, and Microsoft offer but is good enough to meet most organizations' requirements. The combination of capture (via Cardiff's TeleForm product), forms, and BPM makes LiquidOffice Forms a good fit when organizations need to use forms across broad, horizontal processes.
- **Microsoft's InfoPath is much-improved and enterprise-ready but lacks capture capabilities.** InfoPath 2007 is a significant upgrade from the 2003 version, now offering a design environment suitable for not only nontechnical process designers (also known as business analysts), but also advanced designers utilizing Visual Studio. What organizations will like most about this new version of InfoPath is that forms can be deployed via HTML in browsers and does not require the InfoPath Viewer unless offline forms filling is a requirement. Another benefit is the ability to easily turn other office documents in Word, Excel, or Access into InfoPath forms. InfoPath still does not have native capture built in, nor any partnerships in place for this — when paper forms submissions are a requirement, buyers will have to look beyond InfoPath.
- **FileNet has a strong product for customers, but must play catch-up for broader appeal.** FileNet P8 eForms offers functionality that will appeal to customers already using the P8 suite. FileNet's leading ECM and BPM offerings are well integrated with forms, allowing customers to apply the company's excellent records management capabilities to forms and to easily place forms into business processes. FileNet also applies event management to e-forms, kicking off business processes when changes are made to the forms. But, if not already using P8, most potential customers will find P8 eForms unsuitable for their needs. FileNet is working to make P8 eForms a stronger standalone product, but it still needs to bring certain functionality up to snuff, such as the ability of nontechnical business analysts to create and/or modify forms.

This evaluation of the e-forms software market is intended to be a starting point only. Readers are encouraged to view detailed product evaluations and adapt the criteria weightings to fit their individual needs through the Forrester Wave Excel-based vendor comparison tool.

**Figure 2** Forrester Wave™: e-Forms Software, Q2 '06



Source: Forrester Research, Inc.

**Figure 2** Forrester Wave™: e-Forms Software, Q2 '06 (Cont.)

	Forrester's Weighting	Adobe Systems	Cardiff Software	FileNet	IBM	Microsoft
<b>CURRENT OFFERING</b>						
Forms design interface	25%	4.80	3.25	3.00	4.40	4.00
Forms deployment (distribution and access)	30%	4.61	3.30	3.32	3.88	3.54
Forms processing (submission/ingestion)	20%	5.00	4.90	4.90	5.00	2.20
Architecture and platform	25%	3.94	3.20	2.98	4.61	3.29
<b>STRATEGY</b>						
Product strategy	70%	4.00	3.00	2.15	4.70	3.85
Corporate strategy	25%	4.15	4.85	2.45	2.45	1.30
Financial resources to support strategy	5%	4.00	2.00	3.00	5.00	5.00
Cost	0%	3.00	5.00	2.00	4.00	5.00
<b>MARKET PRESENCE</b>						
Installed base	30%	4.50	4.40	3.40	3.90	4.60
Revenue	30%	4.00	2.00	3.00	5.00	5.00
Revenue growth	10%	3.00	3.00	2.00	0.00	2.00
Systems integrators	10%	5.00	3.00	2.00	5.00	5.00
Services	10%	4.25	2.75	4.25	4.50	5.00
Employees	5%	4.00	2.00	2.40	4.20	5.00
Technology partners	5%	2.50	4.00	2.50	4.00	2.50

All scores are based on a scale of 0 (weak) to 5 (strong).

Source: Forrester Research, Inc.

## TWO VENDORS EMERGE AS LEADERS IN A MATURE MARKET: ADOBE AND IBM

### Leaders

- Adobe Systems.** By combining a strong forms design environment, forms management and process capabilities, and good XML support with the ubiquitous Acrobat Reader rich client, Adobe LiveCycle is a Leader in the e-forms software market. LiveCycle's design environment is business-user-friendly and includes the most comprehensive set of form templates. LiveCycle's advanced capabilities are industry leading — 2D bar code support and 3D graphics capabilities are built into the product. Adding up all the capabilities, Adobe LiveCycle is a good fit for most any type of e-forms deployment, especially when the forms are widely deployed to end users.<sup>5</sup>
- IBM.** IBM Workplace Forms is a Leader in the e-forms software market with especially strong XML support and digital signature capabilities. The product offers a business-user-friendly design environment, deployment options of both HTML and a rich client to enable

functionality like offline forms filling, and a very scalable architecture. While the product does give users the ability to add workflow to forms, more built-in process management would be nice. IBM leads the XForms movement and is working to create an open standard for separating form content and presentation. The product's support for digital signatures is market leading and makes it a good fit when such requirements loom large.<sup>6</sup>

### Strong Performers

- **Cardiff Software.** Cardiff's LiquidOffice Forms is a strong performer in the e-forms software market with a business-user-friendly design environment, strong forms processing capabilities, complementary BPM functionality for building forms-driven processes, and fair XML support. LiquidOffice forms are distributed almost exclusively via HTML in a browser, meaning the product does not support some advanced capabilities like offline forms filling. An attractive entry-level price and competitive functionality, though, make LiquidOffice Forms a strong alternative to more expensive offerings when organizations require a forms solution for horizontal processes.<sup>7</sup>
- **Microsoft.** The ability to easily turn Office documents in formats such as Word or Excel into InfoPath Forms and render them via HTML in a browser makes Microsoft's InfoPath a strong performer in the e-forms software market. InfoPath offers a design environment appropriate for both nontechnical process owners and advanced forms designers, good XML support, and fair security protocols. However, the product does not include any paper forms capture capabilities and is architected for Microsoft-centric IT environments. When the full-blown Office 2007 product suite hits this October, users will find the vastly improved InfoPath a good fit when forms requirements center on quickly deploying forms for horizontal processes.<sup>8</sup>
- **FileNet.** FileNet P8 eForms is a strong performer in the e-forms software marketplace. The product is most suitable for existing P8 customers that want to integrate and leverage forms with FileNet's strong BPM capabilities. P8 eForms' design environment is for graphic designers only — business users cannot create or modify forms; rather, they access the forms in the P8 Workplace client for use within business processes. The product's form management and processing capabilities are strong, and FileNet provides a scalable architecture. Despite elements of strong functionality, FileNet must work to make the product a better standalone offering before it can be highly competitive with other e-forms offerings.<sup>9</sup>

## SUPPLEMENTAL MATERIAL

### Online Resource

The online version of Figure 2 is an Excel-based vendor comparison tool that provides detailed product evaluations and customizable rankings.

### Data Sources Used In This Forrester Wave

Forrester used a combination of data sources to assess the strengths and weaknesses of each solution:

- **Hands-on lab evaluations.** Vendors spent one day with a team of analysts who performed a hands-on evaluation of the product using a scenario-based testing methodology. We evaluated each product with an eye to how the product enabled each of the 100 criteria.
- **Strategy and product road map briefings.** We asked vendors to provide briefings on their business strategy — which could include, among other things, plans for new product development, acquisitions, capitalization, market expansion, sales channels, and partnerships. We also asked each vendor to provide an in-depth product road map for the next 12 to 18 months.
- **Customer reference calls.** To validate product and vendor qualifications, Forrester also conducted reference calls with three of each vendor's current customers.

### The Forrester Wave Methodology

We conduct primary research to develop a list of vendors that meet our criteria to be evaluated in this market. From that initial pool of vendors, we then narrow our final list. We choose these vendors based on: 1) product fit; 2) customer success; and 3) Forrester client demand. We eliminate vendors that have limited customer references and products that don't fit the scope of our evaluation.

After examining past research, user need assessments, and vendor and expert interviews, we develop the initial evaluation criteria. To evaluate the vendors and their products against our set of criteria, we gather details of product qualifications through a combination of lab evaluations, questionnaires, demos, and/or discussions with client references. We send evaluations to the vendors for their review, and we adjust the evaluations to provide the most accurate view of vendor offerings and strategies.

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave document — and then score the vendors based on a clearly defined scale. These default weightings are intended only as a starting point, and readers are encouraged to adapt the weightings to fit their individual needs through the Excel-based tool. The final scores generate the graphical depiction of the market based on current offering, strategy, and

market presence. Forrester intends to update vendor evaluations regularly as product capabilities and vendor strategies evolve.

## ENDNOTES

- <sup>1</sup> While it is rare that forms only exist as a static transactional record, the form itself is a piece of transactional content and must be managed as such. See the December 21, 2005, Market Overview “[Transactional, Business, And Persuasive Content: A Better Way To Look At Enterprise Content.](#)”
- <sup>2</sup> Many ECM vendors offer some e-forms capabilities natively within their products suites. See the October 7, 2005, Tech Choices “[The Forrester Wave™: Enterprise Content Management Suites, Q3 2005.](#)”
- <sup>3</sup> FileNet’s BPMS product was rated a Strong Performer in our evaluation of human-centric business process management suites. See the February 24, 2006, Tech Choices “[FileNet’s BPMS Is Unbeatable At The Intersection Of Content And Processes.](#)”
- <sup>4</sup> Interaction platforms combine rich clients, multichannel business processes, composite applications, collaboration, and other capabilities to ensure consistent user experiences across multiple channels. See the January 31, 2006, Trends “[The Interaction Platform: Widespread In 2006.](#)”
- <sup>5</sup> View the vendor summary for more detailed analysis on how Adobe Systems fared in this evaluation. See the June 16, 2006, Tech Choices “[Adobe LiveCycle: An e-Forms Leader Combining Strong Forms Design With Ubiquitous Access.](#)”
- <sup>6</sup> View the vendor summary for more detailed analysis on how IBM fared in this evaluation. See the June 16, 2006, Tech Choices “[IBM WorkPlace Forms: An e-Forms Leader Targeting Secure Forms.](#)”
- <sup>7</sup> View the vendor summary for more detailed analysis on how Cardiff Software fared in this evaluation. See the June 16, 2006, Tech Choices “[Cardiff Software: A Strong Performer In e-Forms Uniting Capture, Forms, And Process.](#)”
- <sup>8</sup> View the vendor summary for more detailed analysis on how Microsoft fared in this evaluation. See the June 16, 2006, Tech Choices “[Microsoft InfoPath: A Strong Performer In e-Forms Leveraging MS Office.](#)”
- <sup>9</sup> View the vendor summary for more detailed analysis on how FileNet fared in this evaluation. See the June 16, 2006, Tech Choices “[FileNet P8 eForms: A Strong Performer In e-Forms With A Focus On BPM.](#)”

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