

Large Vendors Breathe New Life into the Electronic Forms Market

Executive Summary

Businesses have been using forms to capture data and information for decades. Computing paradigms and the Internet have redefined the use of electronic forms (e-forms). More recently, e-forms have generated a renewed interest among business users as their efficiencies are demonstrated and as major software vendors move to develop new tools for form design.

Electronic forms are a flexible, dynamic and often cheaper way to capture information, and may be represented in a variety of online and offline formats including PDF, MS Office documents and HTML. When linked to information management and database systems, e-forms become an effective productivity enhancer by speeding customer service and order requests.

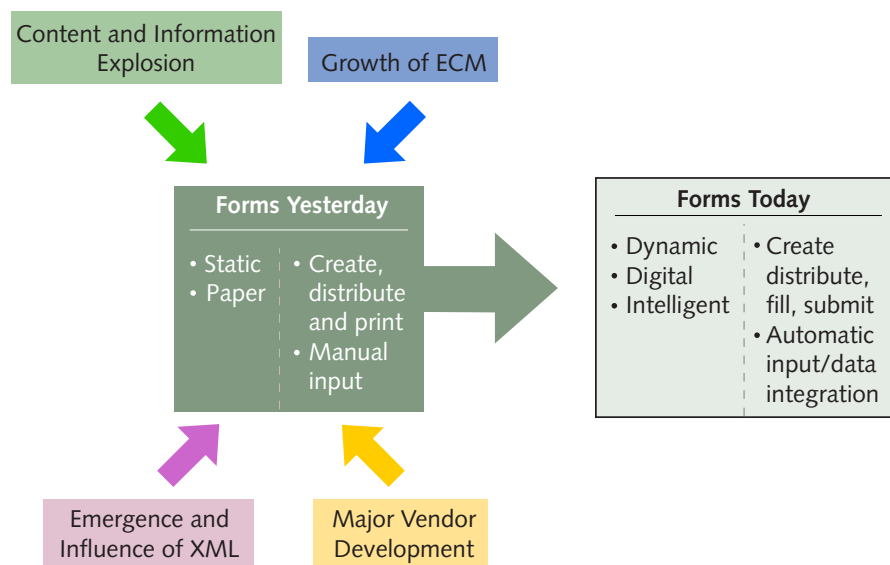
Large businesses may use tens of thousands of e-forms for any number of internal and external business processes ranging from creating letterhead to product order entry to expense reporting. The forms landscape is changing (see Exhibit 1) because of the ever-increasing torrent of information flowing through businesses, the growth of content and information management systems, new vendor development, and the influence of XML, among other factors.

In this report, the Yankee Group examines the latest developments in the electronic forms market, provides a snapshot of the tools that are or will soon be available, discusses the impact of outside forces on forms, and explains the integration of forms and content management.

Exhibit 1

The Development of Electronic Forms Is the Result of Several Market Trends

Source: The Yankee Group, 2003



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I. Introduction

Forms have existed since people first put pen to paper. However, today's forms are becoming far more sophisticated, and simpler to design and use than ever. Traditional paper forms are giving way to more sophisticated digital counterparts. With the advent of the Internet, more businesses are transferring forms to electronic formats for order entry and other types of data input. Today, e-forms are used by virtually all businesses for order entry, expense reports, letterhead and e-commerce.

Electronic forms are an effective way to create, capture, distribute, submit and process information. Significant forces in the information management market are changing the way businesses think of forms. With the pending arrival of new products from Adobe and Microsoft, the landscape appears poised to change permanently.

II. E-Forms Market Overview

There has been a recent spurt of activity in the e-forms market. In April 2003, FileNet acquired Shana Corp. with a goal of adding workflow to electronic forms or process-enabling them. Microsoft has built an electronic form designer, InfoPath, into its Office 2003 suite. Adobe has announced a next-generation advanced form design product, based in part on technology acquired from Accelio, which will add user-defined XML support.

Forms Everywhere

Forms are so commonplace that they often go unnoticed by business users and consumers, whether they are signing up for online banking, ordering books on Amazon.com, filling expense reports, updating benefits information or doing something as mundane as requesting letterhead. This abundance of uses for forms has driven major software vendors to turn their development expertise to the electronic forms market, paying particular attention to two underserved areas:

- **Form design:** Form design has been, for the most part, arbitrary and specialized. Although tools such as FileNet Forms Designer have been on the market and have grown quite popular, form design and usability have not kept up with other creative software from Microsoft, Macromedia and Adobe.
- **Form integration:** The use of information management software is growing in all businesses. Many users are looking for ways to integrate forms into existing infrastructure and business processes. This may include integrating forms with ECM, CRM and ERP applications.

Drivers of Change

E-forms technology has reemerged recently because of four significant factors:

- **The information glut:** The growth of corporate content and data is quickly becoming a massive problem for all businesses and is well documented. Any business can be quickly overwhelmed by the amount of information it produces on a daily basis. Forms add structure to information as it is collected.
- **The growth of content management and process-enabled workflows:** The growth of applications designed specifically to manage content parallels the increased amount of information that today's businesses must handle. Content management systems generally involve information presentation and provide a natural environment for electronic forms.
- **Intensifying development by major market movers:** Large software vendors such as Adobe and Microsoft have been busily developing new electronic forms products.
- **XML adoption:** XML is making it simpler to integrate forms with existing data sources. Adobe uses XML as the foundation for its intelligent document platform; Microsoft uses XML in its new Office suite (Office Professional Edition 2003 for InfoPath).

The E-Forms Advantage

Businesses recognize the many advantages that electronic forms contribute to operations and are anxious to use them. Among the demand drivers and benefits of using e-forms are:

- **Consistency:** Consistent form structure, particularly when an e-form carries the same look and feel as its paper counterpart, leads to fewer human errors.
- **Speed:** Electronic forms enable businesses to reduce information processing time by integrating forms with back-end databases and repositories.
- **Availability:** E-forms are always available on the Web and can be downloaded and printed whenever needed.
- **Use existing communications systems:** E-forms use existing document management systems and IP communications infrastructure.
- **Cost savings:** Distributing forms electronically, as the IRS may distribute its tax filing forms, saves on printing and mailing costs.
- **Data analysis requirements:** The consistency of automatic e-form data extraction allows for data that is cleaner than the imperfect data that is produced by OCR and human keying.

Forms and Enterprise Content Management

With image management products, such as those offered by Kofax and Captiva, 35 percent of U.S. businesses with more than 250 employees scan and extract information from paper documents, many of which are forms.

Regardless of format (paper-based or electronic), forms contain content. To be used and reused effectively, content must be managed. This conclusion has led to the merging of electronic forms and content management, as form vendors increasingly view content management solutions as conduits to enterprise proliferation.

Announcements relating to the merging of e-forms and content management include FileNet's acquisition of Shana, and burgeoning relationships between Open Text and Cardiff, and between Adobe and both IBM DB2 Content Manager and Documentum.

All of this activity has led vendors to focus on the process-enablement of electronic forms. Vendors have added a workflow to the electronic forms life cycle to enable collaboration on forms, development in a team environment, and centralized and intelligent management. The alternative is unauthorized user access to outdated forms in an uncontrolled environment.

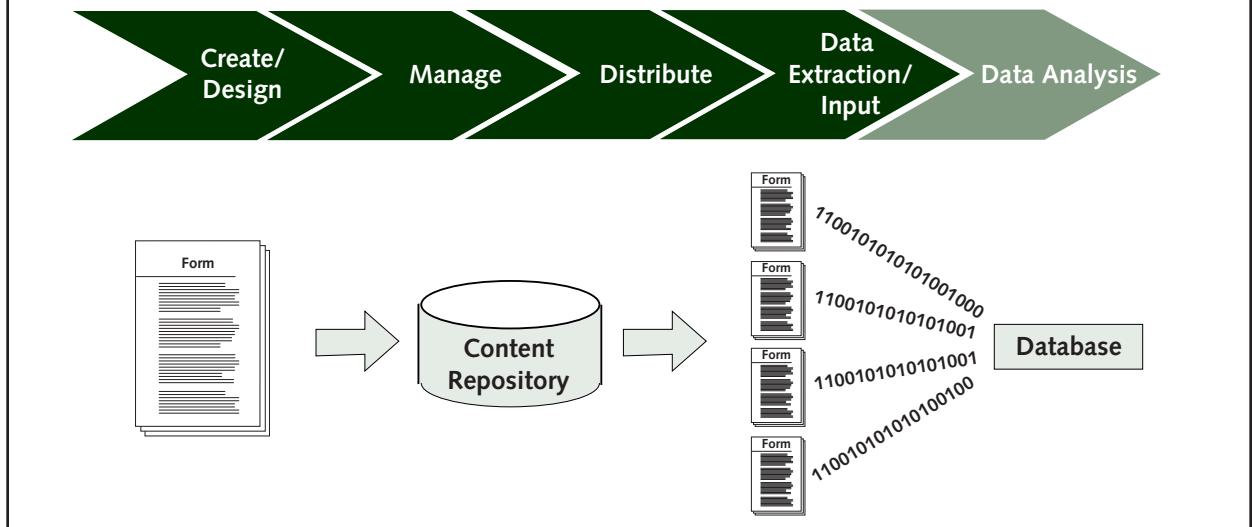
Content management systems also offer a centralized storage system for forms so that once completed, the appropriate users can easily access them. Exhibit 2 shows a simple form life cycle, where a form is created and managed within a content management environment. The content management server distributes the form. At the termination of the form life cycle, data and information captured by the form are managed either by the content management system or by another database application.

Market Segmentation

The two primary formats for e-forms are HTML and PDF. Proprietary clients are used with decreasing frequency.

Exhibit 2**E-Forms and Content Management Systems Have Natural Synergies**

Source: *The Yankee Group, 2003*



HTML-based e-forms, popular in commercial markets, may be used to collect customer information or to provide a Web-based version of a traditional paper form.

PDF is popular in federal markets because of its security features and ability to retain the exact look and feel of paper-based forms, while enabling intelligence such as computation and validation. No company knows PDF better than Adobe, but most vendors support PDF as a format as well. Vendors also widely support HTML.

What follows are the form strategies of four leading vendors: FileNet, Cardiff Software, Adobe and Microsoft (see Exhibit 3).

FileNet Forms Manager

Through its acquisition of Shana, FileNet took an early lead in developing process-enabling electronic forms. FileNet fulfilled the vision that other vendors, including Adobe, have for e-forms by tightly integrating forms and enterprise content management. Although Adobe and Cardiff have strong relationships with ECM vendors, they cannot offer a fully integrated document and forms management solution.

FileNet Forms Manager consists of four components: Forms Designer, Forms Manager Server, eForms Central and eForms Client. Designer combines functions of desktop publishing with spreadsheets, does not require technical expertise and can output either HTML or desktop (downloadable) forms. Forms Manager Server is a repository for all e-forms deployed to the e-forms library, which is accessible through a Web interface.

Cardiff LiquidOffice

Cardiff launched an early version of its e-form product in 1999, and followed with its LiquidOffice (formerly known as LiquidForms) in 2001. The vendor offers a suite of three solutions:

Exhibit 3

Leading Electronic Forms Vendors

Source: *The Yankee Group, 2003*

Vendor	Solution	Strengths	Challenges
Adobe Systems	XML/PDF form design software	XML foundation; almost ubiquitous client (PDF); security; presentation fidelity; more than 20 years of experience (via JetForm and Accelio)	Back-office integration; perception that PDF is a presentation tool
Cardiff Software	LiquidOffice	Large customer base; solutions for paper and electronic forms; standards-based	Competing with large, public vendors; third-party integration
FileNet (Shana)	Forms Designer	More than 17 years of experience; extensive workflow capabilities; large customer base	Maintaining relationships with competing ECM vendors; third-party integration
Microsoft	InfoPath	Ease of use; MS Office integration	First-generation product (beta); not a corporate priority; third-party integration

- **TELEform:** An information capture solution for paper-based data extraction
- **LiquidCapture:** A Web-based document capture solution
- **LiquidOffice:** The e-forms product

LiquidOffice, a J2EE-based application comparable to the full-featured FileNet product, offers end-to-end workflow-based functionality including tools for forms design and forms serving and distribution, and a rich Web-based forms client.

Cardiff takes a presentation-client-agnostic approach to data integration. LiquidOffice offers users the ability to publish on paper as well as in PDF, HTML and InfoPath Version 3. LiquidOffice scales to meet the needs of extremely large implementations. Through form usage reporting functionality, it allows users to consolidate thousands of forms centrally and identify redundant or seldom-used forms for removal. LiquidOffice integrates with most ECM solutions (Open Text OEMs it).

Microsoft InfoPath

Microsoft issued its InfoPath electronic forms design product in the Enterprise version of its Office 2003 suite. Recognizing that many businesses already use Microsoft products including Word, Excel, Access and Outlook to collect information and data, Microsoft seeks to leverage its influence over the desktop with a simple-to-use e-forms design tool of its own.

Built on an XML foundation, InfoPath supports any XML schema and interoperates with Web services, allowing the application to integrate well with databases. Because of its presence in the Microsoft Office suite, InfoPath will gain traction. However, Microsoft will face the challenge of positioning InfoPath as an enterprise solution instead of a single-user desktop productivity tool. Similar to other Office tools, InfoPath offers a simple WYSIWYG design interface, sample forms and Microsoft support.

Adobe XML/PDF Forms

Adobe's acquisition of Accelio in 2002 placed the company squarely in the e-forms market, although Acrobat has had form design capabilities since version 3.0. The company has since bundled form design functions into recent versions of Acrobat.

Adobe's approach to e-forms is based on the unique competitive advantages of the ubiquitous Adobe Reader, the popularity of Acrobat among businesses and its focus on the integration of XML with PDF. Adobe's XML/PDF form designer has a common XML template that allows the user to define XML and schema support. Once the form has been designed, it can be deployed as a PDF or in HTML.

Using PDF as a document integration layer—as a means of extending business transactions and data capture outside of the firewall, even in a disconnected environment—is compelling. The company is aggressively developing partnerships with applications vendors to accomplish this goal. One such partnership is with SAP, which integrates PDF with mySAP.com to allow users to create and share information, and acts as an interactive format for extending transactions to non-SAP users. Using PDF-based forms, SAP does not have to extend its interface to all users—it can simply extract PDF-based information.

Adobe's approach to creating intelligent documents is intended to alter the perception that PDF is a static document format. Intelligent documents use XML to integrate business systems with people and processes, and feature PDF as the document creation and presentation application. Exhibit 4 shows the Adobe form creation functionality in its forthcoming XML/PDF forms design product.

Winners and Losers

The major movers are already in place. Both Microsoft and Adobe are well positioned to leverage their unique strengths to quickly gain market share in the e-forms market, although both face unique challenges.

Microsoft's influence over the desktop and Office content creation tools will make it easy for business users to create forms of their own without substantial additional cost—assuming the customer is running Microsoft infrastructure and content management.

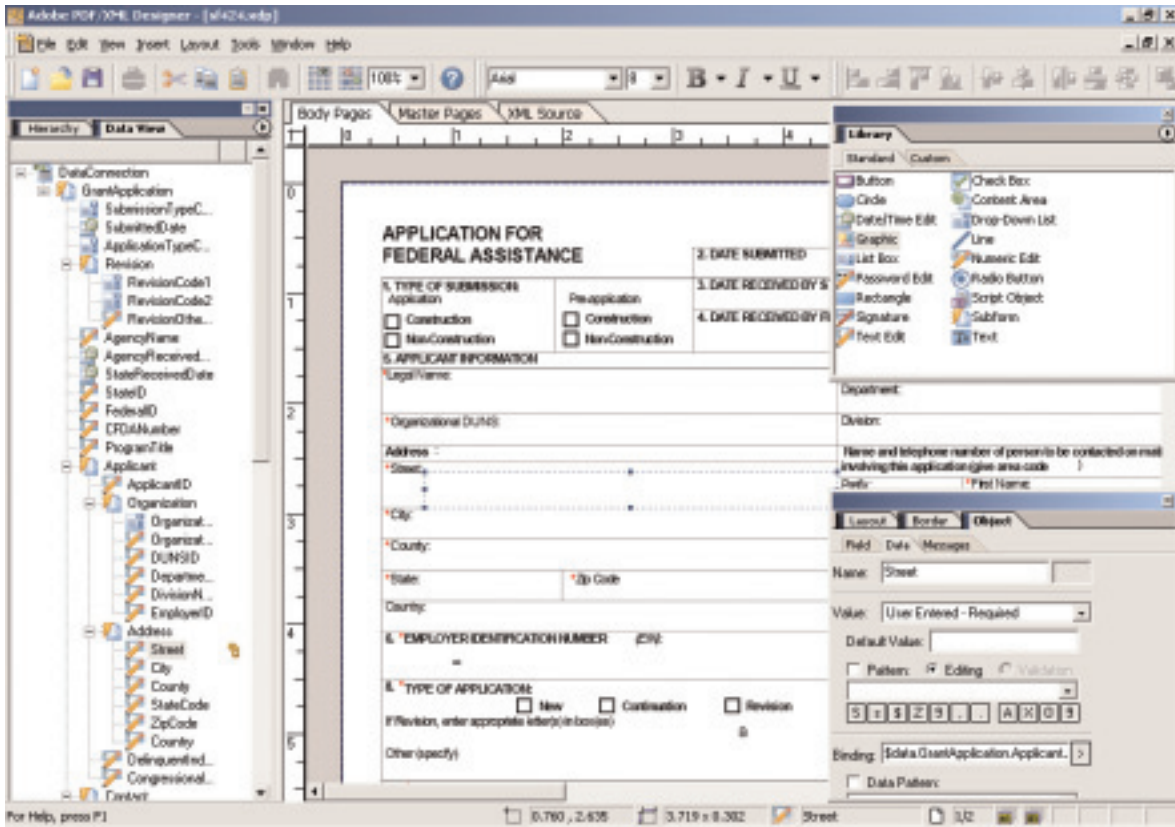
Similarly, the penetration of Adobe Reader and the popularity of PDF as a document viewing and transportation mechanism will allow Adobe to grab significant market share in the e-forms market.

However, the introduction of new, simple-to-use tools by Adobe and Microsoft will have a ripple effect on the market. These tools will raise the popularity of e-forms as more users are provided access to electronic form design products through common desktop applications.

Exhibit 4

Adobe PDF/XML Forms Designer

Source: Adobe Systems and The Yankee Group, 2003



Entrenched vendors such as FileNet and Cardiff will continue to grow (Cardiff has shown 30 percent CAGR) as e-form popularity increases and they build upon mature product sets and leverage existing ties to infrastructure. End users should not count out the e-forms functionality that is common to many business applications, including ERP, CRM and other host systems for structured data.

Cardiff's position as a private, profitable and successful vendor makes the company a possible acquisition target for larger information management vendors. Despite their size and strengths, it will take time for Microsoft and Adobe to catch up with e-forms vendors with more mature solutions.

Key to the continued success of all existing vendors will be the development of strong ties to large applications vendors in structured data and unstructured content markets. XML has become central to uniting forms and the data and business applications such as ERP and CRM. However, basing a product on XML and open standards is only one step toward building a successful e-forms strategy. The successful vendors in this market will be those that can apply e-forms to enhance existing business processes. The market remains on the cusp because businesses still use e-forms in rudimentary ways.

III. Conclusions

The maturation of XML and other open standards will have a heavy influence on the continued growth of the e-forms market. Using XML and protocols such as SOAP will allow enterprises to realize the benefits of electronic forms and move ahead of their competitors. Users will realize that using e-forms to capture data is beneficial, but that there is a next step. Managing and storing the data captured by a form, and then using that data to run a business, is the real value of electronic forms.

The stimulation of the e-forms market will also help enterprises struggling to minimize the information glut. Aggressive vendor partnering activity—particularly in the content management, image management and storage markets—will create opportunities for end users to consolidate systems and streamline their use of forms, part of which involves the reduction and elimination of redundant forms.

Ultimately, electronic forms must be simple to use and logically designed, and have a look and feel that the user will understand. Converting paper forms to PDF is an effective way for businesses to encourage non-technical users to make the leap from paper to e-forms, particularly because PDF has become more than a simple data container. The levels of sophistication that vendors are developing within their forms products will allow enterprises to extract content from that container and put it to good use.

Vendor Recommendations

- **Adobe must continue to emphasize intelligent, XML-based documents.** Tightly embedding XML as a data integration mechanism within the rich presentation environment of PDF puts users on a gentle learning curve as they migrate to electronic forms.
- **Cardiff must develop its brand.** With the introduction of e-forms products by Adobe and Microsoft, Cardiff will have to compete more rigorously with widely recognized brands. It has been proven repeatedly that a strong brand can carry a vendor to the top of a market, regardless of the quality of the product.
- **FileNet must carefully transition its Shana customers, and vice versa.** Many loyal Shana customers will need to be sold on the benefits of an integrated form and content management approach. Others will already understand the concept, but use competing content management systems. Conversely, FileNet has bought a large customer base into which it can sell its content management offerings.
- **Microsoft must use InfoPath to strengthen its hold over the desktop.** By packaging InfoPath with Office, Microsoft has the opportunity to strengthen the functionality of Office as competitors continue to mount attacks.

Enterprise Recommendations

- **Large enterprises must take inventory and attempt to consolidate their forms.** Many large organizations use tens of thousands of forms that have been developed by different people using different tools over a long period. New, cost-effective, easily integrated forms products will change the way businesses use forms, forcing users to consolidate and eliminate redundant forms that no longer serve a purpose.
- **Use e-forms to improve the quality of your data.** Effective data capture can improve the ROI realized by transactional applications. E-forms are a good way to improve the consistency of data and should be used to this end.
- **Control forms development.** With the introduction of simple-to-use electronic form design products from vendors such as Microsoft, there will be a risk of rogue form designers or employees using desktop tools to design forms that do not conform to company policy or standards. There is significant risk associated with user manipulation of e-form layout because ISO compliance often demands a consistent look and feel.

IV. Further Reading

Collaboration & Content Management Reports

Portals and Web Content Management Converge: What's Next for Enterprise Web Applications?, August 2003

Enterprise Content Personalization Boosts Employee Productivity and Customer Service, February 2003

Enterprise Content Management: Expected Evolution or Vendor Positioning?, June 2002

Collaboration & Content Management Research Notes

The State of the Content Management Market, May 2003

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