

DOCUMENT POWER

THE NEW MANAGEMENT PARADIGM



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In an endless quest to streamline organizations and make them more responsive, managers have pursued a barrage of business philosophies and technological panaceas. While each approach holds merit, each has failed to focus on a fundamental element of the organizational equation — the document.

The document is undergoing a major evolution that will shake up our businesses and re-form them into different entities. Fail to recognize the document's new role, and you will fail to control your organization.

The flexibility and power of today's document is evident in the range of creation and delivery options. Everything from the morning newspaper to the hypertext-connected pieces on the World Wide Web are considered documents. But despite the mounds of paper, stacks of CD-ROMs and vaults of e-mail, most organizations are only using a fraction of the inherent power of their documents.

Documents hold incredible power. Technology has endowed the document with qualities and capabilities that go far

beyond repositories of fact. Properly deployed, they can help you achieve unprecedented levels of control, insight and competitive advantage.

Imagine documents that can spot trends across an enterprise. Documents that automatically respond to customers. Documents that can proactively monitor sensitive issues — or documents that can even seek you out, and tell you what you want to know. Forward-thinking businesses have already harnessed their abilities and are using them as a competitive advantage.

A SPECIAL WHITE PAPER REPORT FROM

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CONSULTING GROUP
The Information Advantage



Of course, unplanned, unmanaged documents can cripple communications, deplete corporate resources, and, perhaps most damaging of all, stunt corporate growth to the point where the enterprise fails to thrive.

Whether the power of the document is used to advance the enterprise or destroy it is up to you. The ability to accept and exploit this new paradigm marks a milestone in business management.

THE DOCUMENT EVOLUTION

Before you deploy the document, you must first understand it. This is not as easy as it sounds. Where once we could say with confidence that documents include bank statements and phone books, menus and magazines, now we must expand the definition to include items we can no longer hold in our hands.

Xplor International defines the document as a package of data structured for informational purposes. Note that this

makes no specific mention of paper-based entities and is broad enough to include digital components as well. Thanks to technology and innovation, the document has undergone a conceptual shift from a physical unit to a logical one.

Look no farther than the electronic frontier to test this theory. While physical documents — all those bits and bytes, pages and lines — were bound by the limitations of hardware, logical documents have an unlimited amount of bandwidth.

Documents have literally become unbound. Delphi Consulting Group takes the definition of document to a more conceptual level. Delphi sees the document as an object — a collection of pointers and rules that can simultaneously engage a number of different information components and actions (see chart, page 8).

PAPER MAIL AS A STRATEGIC TOOL

Companies that take advantage of new finishing and mail technologies respond to customers faster and more efficiently while speeding operations and eliminating overhead. A prime example of an organization using paper, printing and delivery as critical parts of the intelligent document strategy is Banc One.

The largest single-site trust operation in the country, Banc One Investment Management and Trust Services processes nearly 700,000 statements annually. Printing and proper mail handling are essential as Investment Management and Trust products are highly regulated and time-sensitive.

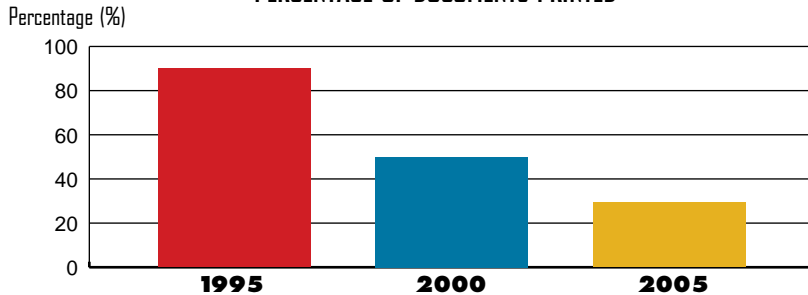
Today, Banc One Investment Management and Trust Services' operations are almost entirely automated. New equipment from IBM and Pitney Bowes has introduced a new set of capabilities designed to maximize production of highly sensitive trust documents. A Pitney Bowes Series 8 inserter system, for example, allows each statement to be processed differently based on information about the recipient. It allows the company to customize its correspondence — a feature rapidly becoming a "must-have" among client-serving companies.

In addition, Pitney Bowes' technology — called CodeLite™ — lets the inserter grab data on the fly that affects print stream manipulation and mailpiece processing. Inkjet technology built into the inserter system lets the company

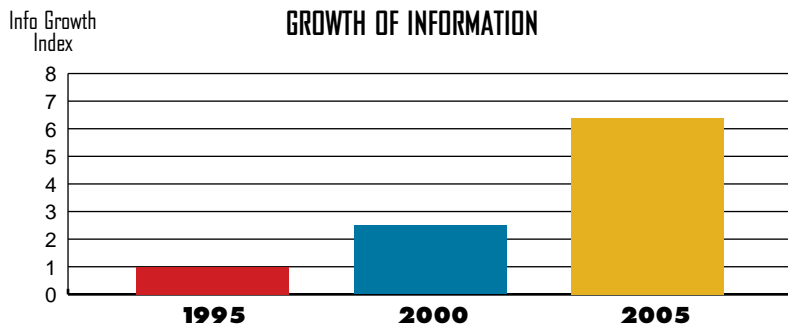
THE FUTURE OF THE PRINTED DOCUMENT

This new document carries with it myriad new physical properties, providing benefits and features far beyond mere paper-based documents alone. But it is important to understand that these digital, logical documents do not herald the demise of paper. New documents unbound by physical constraints will enjoy explosive digital growth — but don't throw away your printers. Printers will be as much a part of your document strategy for the next 10 years as laptops, LANs and the Internet, according to projections made by Xplor International. Even though the portion of documents printed will drop from 90% to 30% in the next ten years, the growth of information, which is doubling every three or four years, will drive the total number of printed documents to more than double the current level.

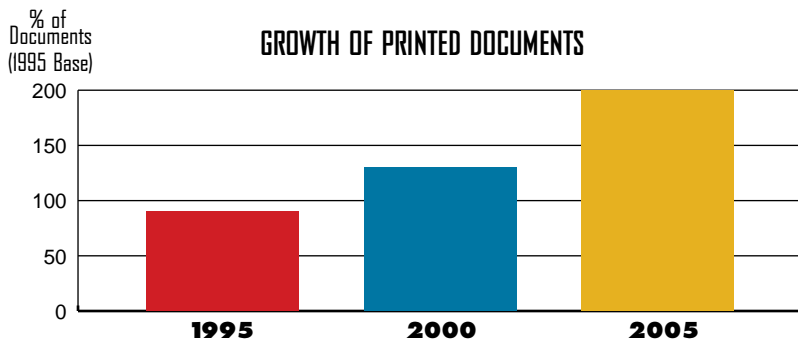
PERCENTAGE OF DOCUMENTS PRINTED



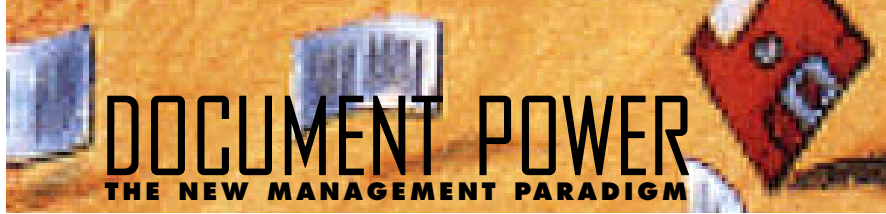
GROWTH OF INFORMATION



GROWTH OF PRINTED DOCUMENTS



Source: Xplor International



address 9x12-inch envelopes inline, a time-saving step that also enhances document integrity.

StreamWeaver®, a print stream processing software product from Pitney Bowes Software Systems (PBSS), supports functionality to the IBM duplex printer and the Pitney Bowes inserting equipment. StreamWeaver was used to convert the print stream from simplex to duplex printing independent of the application itself.

“StreamWeaver is the key to our operation,” says Minerva Minthorn, team leader of physical distribution. “It allows us to maximize the efficiency of the inserter by removing those statements that are over 40 pages long and require special handling.” StreamWeaver also identifies 35 different codes for unique processing, sorting and handling of special requests such as alternate delivery methods, internal mail stops and the handling of statements that require hand checking.

“This allows us to offer customized products in a mass production environment, which helps differentiate Banc One Investment Management and Trust Services in the investment market,” says Minthorn. By using PBSS software equipment, Banc One Investment Management and Trust Services was able to manipulate and enhance print-ready documents without changing the business application. This allowed the company to very quickly take advantage of the new print and mail finishing hardware investments.

POSTAL SERVICE ON THE ELECTRONIC FRONTIER

While the ultimate goal of Banc One Investment Management and Trust Services is to serve its customers, the immediate goal of its processing center is to get documents ready to be mailed.

Businesses that take the time, energy and money to prepare first-class mailings can be reasonably sure that they will reach customers in an acceptable amount of time. It's a comfortable, tried-and-true procedure for both parties. As our document strategies shift to embrace more digital strategies, however, delivery becomes more uncertain.

But even the United States Postal Service doesn't expect you to use paper mail forever, and for everything. Currently examining its role in electronic commerce, the USPS proposes a service that will bring the same level of assurance and integrity found in First-Class mail to select electronic mail.

Under a recently published Federal Register notice, U. S. Postal Service postmarked e-mail messages receive a time-and-date stamp, encryption and digital signature — generated using an exclusive postal service code. This postmarked file is then forwarded to the recipient. The whole process takes about five minutes coast to coast. To send and receive, participants use USPS-provided software.

According to USPS Senior Vice President and Chief Marketing Officer

Loren E. Smith, such treatment makes it possible to finally depend on the contents of an electronic message.

“Today in electronic mail, there's no methodology for businesses or individuals that allows them to count on the fact that the information they're receiving is what the sender intended them to get. In other words, is it authentic?” says Smith. “There's also no way of verifying the electronic transaction ever took place. Included with the electronic postmark is encryption, which means it is more difficult for someone to read your message. And the U.S. Postal Service's digital signature notifies the recipient if the message was tampered with, so the reader is alerted to this fact. The recipient finds this out by using software to authenticate the contents of the message.”

Many institutions, including the Department of Defense, have approached the USPS about such a delivery service. At the moment, when the DOD makes and receives bids electronically, it is sometimes difficult to accurately determine document integrity. Smith also sees applications within the medical community, where an electronic postmark could create a confidential information exchange between doctors, hospitals and insurance carriers. It also has value for real estate transactions, where the time of bid arrival could be authenticated.

Postal officials believe that USPS-sanctioned digital mail will carry some of the same legal protections as regular First-Class mail. Tampering with First-Class mail is a felony. “Certainly the USPS Electronic Postmark will give messages greater legitimacy, but any legal ramifications will not be specifically spelled out,” explains Smith. “This is new legal territory that has not been tested in court.”

The USPS Electronic Postmark will be available on software that is compatible with existing electronic mail packages. The postal service is also talking to the leading software providers about making it part of their packages.

Why get into electronic mail in the first place? “First, our customers have been asking us to do this. Second, we have a history of facilitating industrial commerce,” says Smith. “Electronic mail fits in with the core of our mission and the intent of the Constitution in setting up the postal service: to facilitate all business in the exchange of messages and commerce. We've been assuring the security and accountability for first-class mail, and we will continue to do so.”

USPS Cyberspace Initiatives

Global ePost

Global ePost, an electronic-to-hard-copy conversion service, lets businesses prepare mail electronically and have it delivered the next day in hard-copy form, anywhere in the world.

NetPost

NetPost allows businesses to electronically submit print files with distribution lists to the Post Service, assuring rapid delivery to customers anywhere.

Electronic Postmark

This is the first in a series of Postal Electronic Commerce Services aimed at bringing e-mail to the same acceptance level as hard-copy mail. Time and date stamping and archiving are undergoing testing. Plans call for other services as well, including registered, return receipt and verification of recipient or sender.

Interactive Services

The Web Interactive Network of Government Services (WINGS), a user-friendly electronic alternative to a trip to a government building, lets users apply for a small-business loan or conduct other government business 24 hours a day. Other kiosk-based interactive systems will offer gifts to travelers via on-line catalogs.



DOCUMENTS THAT ATTRACT CUSTOMERS

Getting documents to their destination is only part of the battle. Though the mailed entity is ultimately what most customers see, documents that change how companies do business integrate document management all the way down the line.

Elderhostel, a Boston-based nonprofit organization fielding more than 3,000 unsolicited inquiries a week for its free seasonal catalogs from seniors eager to travel, is seeking to maximize customer satisfaction by target-testing print-on-demand catalogs.

One of the most exciting developments in document printing, print-on-demand — or just-in-time publishing — enables companies like Elderhostel to create, update and publish catalogs and documents when, where and in the precise quantity needed. With solutions designed specifically for time-sensitive, graphics-intensive publishing applications, Océ Printing Systems (formerly Siemens Nixdorf Printing Systems) helps Elderhostel reach its highly targeted audience.

True to its name, Elderhostel offers hostel experience to adults 55 and older. They share lodging, meals and learning experiences through a network of 1,900

educational and cultural institutions in the U.S., Canada and 70 other countries. More than 300,000 hostellers have participated in Elderhostel's programs.

Wishing to move from a massive newspaper tabloid-size catalog, Vice President of Information Services Paul Duquette needed to find a print-on-demand solution that would optimize quality and productivity, deliver the best price/performance ratio and accommodate a wide range of applications. He knew exactly what he wanted: A cutsheet device that could produce catalogs in a three-column format, with variable fonts, in simplex or duplex mode, all with top quality and reliability.

Duquette found it in the Océ Printing Systems/Siemens Nixdorf Printing Systems 2050 Model 300 printer. Elderhostel now has two — one for typical production printing applications, the other for its customized print-on-demand catalogs.

Targeted tests are under way that give recipients the opportunity to call and order a catalog featuring programs in specific states. Plans are in the works to conduct tests so hostellers may order catalogs tailored to their specific interests.

Potential savings in paper, postage,

mailing and handling are huge should Elderhostel's smaller customized catalogs prove to be as successful as early signs indicate. With the 2050 printer, routine printing has gone up in quality and down in cost.

Since installing the 2050s, says Duquette, "our productivity has improved dramatically." Currently producing 80,000 to 90,000 documents each month, Elderhostel will generate even more in the future. Duquette foresees a time when Elderhostel will answer requests by automatically searching its database and customizing a catalog for each interested traveler.

DOCUMENTS THAT IMPROVE CUSTOMER SERVICE

While attracting new customers is an obvious marketing goal for every company, keeping existing customers happy is just as important and can prove to be even more important to long-term success. One highly visible way savvy businesses show they care about their customers is through the documents they send.

Customized, information-packed mailings save time and effort and promote better decision-making. Gone are many of the impersonal mass mailings of yesterday. New technologies have made it possible to target individuals using one-on-one marketing techniques.

For example, the world's largest pension fund, TIAA-CREF (Teachers Insurance and Annuity Association — College Recruitment Fund) sends various personalized contract forms and reports to its 1.8 million participants. The 78-year-old Manhattan-based organization manages some \$170 billion in invested assets for people employed in education and research.

TIAA-CREF has always earned top marks for customer service, financial strength and overall performance. And technology is deployed to enhance customer service in every possible way.

Contracts and related documents, formerly created by word processors, typewriters and impact printers and then assembled by hand, are now produced in a fully automated high-speed printing facility within TIAA-CREF headquarters. "We quickly provide new participants with customized contract packages and a personalized directory of TIAA and CREF funds and services," says Geraldine Del Priore, integrated publishing services officer. "Participants can

Total Document Solutions

Even before launching its first xerographic laser printer nearly 20 years ago, The Document Company, Xerox, had established a legacy of customer partnership. As the document — whether hard copy or electronic — gains momentum as the favored means for accessing and using business information, the technical expertise of Xerox, together with its ability to provide total document solutions, from input through management and output, is making Xerox an ever more critical partner for many forward-thinking organizations around the world.

"We have a history of working side by side with customers to thoroughly understand their industries, their businesses, their applications and their document needs, and to deliver document solutions that answer them, quickly and cost-effectively," observes Anshoo Gupta, senior vice president, Xerox Printing Systems Operations. "We understand the challenges our customers face today, because we continue to face those challenges with them, providing choices among total document solutions that match their criteria for success, reducing production costs, boosting productivity, increasing revenues and adding value to their documents, value they can pass on to their customers."

That's why companies like TIAA-CREF, the country's largest pension system and third-largest insurance carrier, asked Xerox to help create a new document production/distribution center in New York City. After studying various alternatives for producing the 78-year-old company's policies and statements, Xerox helped implement a solution that delivers personalized, one-on-one marketing documents to TIAA-CREF's 1.8 million policyholders.

With its technical expertise, its specific knowledge of industries such as banking, insurance, pharmaceuticals and service bureaus, as well as its deep understanding of documents and the way people interact with them, Xerox has helped many businesses unravel the mystery of managing the document. The company achieves this through innovative solutions that help customers merge their information technology strategies with their document output strategies, regardless of the computing environments they choose.

"We're not selling boxes," explains Gupta. "We're selling total document solutions that help turn documents themselves into business assets that dramatically improve the bottom line."



immediately see that customer service is a hallmark of TIAA-CREF?

Xerox, a TIAA-CREF supplier for 10 years, partnered with the pension organization to create the largest centralized Xerox production printing center in New York City. Fourteen Xerox laser printers — including two Xerox Highlight Color Laser Printers — receive database information from two IBM mainframes and speedily print at least five complex documents annually per customer — close to ten million a year.

Electronic printing has also reduced warehousing costs on pre-printed forms and has chopped turnaround time in half. Simultaneously, TIAA-CREF has managed to increase customer satisfaction by creating documents effectively tailored to each customer's unique needs and situation.

DOCUMENTS THAT CHANGE THE BUSINESS OF BUSINESSES

By presenting new ways to serve customers, documents are also presenting new ways for businesses to serve themselves. Expanded opportunities and fresh thinking are helping even the most traditional and procedure-bound entities flourish.

A well-planned technology strategy, backed by a state-of-the-art microwave network, is changing how one southern California school district functions and relates to the community. The Desert Sands School District, with an enrollment of 21,000 students, is giving people an education in what a school can do.

Five years ago, a technology survey revealed incompatible network operating systems and equipment throughout the district. Now, all 22 sites are united by an IBM standard and a district-owned-and-maintained microwave network. By combining some paradigm-shifting thinking of its own with advice from suppliers such as Eastman Kodak, the Desert Sands School District has created a unique system that serves students, teachers, administrators and the community.

At a time when many schools are scrambling to find a copying machine to make flyers, Desert Sands is churning out documents at a brisk 92 pages per minute on an Eastman Kodak 1392 LionHeart printer. In addition to making its own math manuals, reports for parents and other documents for the school district, the printing department is able to generate revenue by printing for other entities in the community. While district-related projects are transmitted over the

microwave link, community projects come through the door — for the time being. Dr. George Araya, Technology Coordinator, hopes to develop a digital link with the community as well.

It's a win-win situation. "In the past, we have asked businesses to sponsor us without getting anything in return," says Araya. "Now we can also provide services to them."

The district also generates some income with its imaging center, which last year captured, processed and printed 2,000 school photos with the help of more Eastman Kodak equipment — including three digital cameras (one DCS 200 and two DCS 420s) and an XLS 8600 export module thermal printer. Eliminating the middleman allowed the district to make money and offer the pictures at a lower cost.

The school's fresh way of looking at old problems is not limited to external entrepreneurial activities. District personnel are taming the academic paper tiger by scanning documents onto CDs. Araya is not sure how many documents have or will be scanned. "It's exciting, inexpensive and fun," he explains. "All the departments want to use it." He estimates that it will take about five years to place the district's current documents on CD, which will improve access, storage integrity and archiving.

For the students, all this technology enrichment is paying off in exposure to ideas and techniques many would not encounter until college — if then. Students assist in the printing center, composing and designing brochures. They generate multimedia presentations in the

imaging center. Desert Sands has moved them beyond the "three Rs" and is preparing them for the digital future.

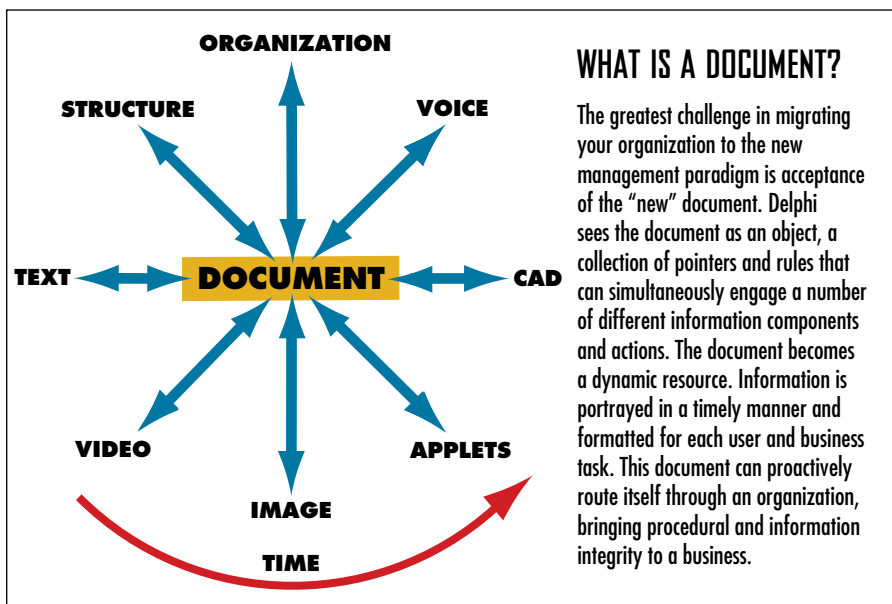
MANAGING THE DOCUMENT

As the document rises in importance and becomes more pervasive, managing it becomes a crucial, enterprise-wide activity. One key aspect is document access. To stay competitive, serve their customers and do their jobs, people must be able to access the correct document, and the correct version of that document, over the vast reaches of time and space.

Companies such as Abbey National, one of the United Kingdom's largest banks, are increasingly relying on technology to manage their company resources. With assets of more than one billion pounds, Abbey National also handles general and life insurance services. As the bank's portfolio expanded, so did its need to streamline communications between headquarters, branches and other sites.

Abbey National recently added 15,000 Interleaf WorldView viewers to provide electronic viewing for the wealth of corporate documents transmitted via satellite during the never-ending financial day. Abbey National is already rolling out WorldView at 675 branch offices and support centers in the United Kingdom. The company expects cost savings of more than 1.5 million pounds in the first year of use alone.

The Interleaf WorldView distribution system is helping Abbey National streamline operations by moving away



Source: Delphi Consulting Group



from paper-based business processes toward on-line information distribution. Using WorldView, Abbey National's staff members can quickly locate pertinent information from a vast document collection via a full-text search. Once retrieved, documents can be linked to other related critical information and/or be annotated, on-line in real time.

Documents, which can be as long as 2,500 pages, may be in a variety of formats, including spreadsheet, graphics, audio and text. Yet each is handled with the same ease with which most companies approach text on paper. The rich array of information types made available through the electronic document adds to the wealth of information that can be portrayed in these documents. Data held on a local server in each branch is updated overnight from the head office's central server using a satellite link.

This fast access to the latest and correct version of corporate information is a critical part of customer service. Peter Greenfield, business communications manager at Abbey National, explains: "If customers see a television commercial for a new product, the last thing they want is to walk into a branch and find staff have to refer to a leaflet or colleague for details."

With the help of Interleaf, Abbey National is taking the lead in the fast-moving world of banking and finance by leveraging communications systems that provide flexibility, speed of response and consistency that customers demand.

TOWARD A CORPORATE DOCUMENT MANAGEMENT STRATEGY

Despite the varied applications and technology approaches taken by BancOne, Elderhostel, TIAA-CREF, the Desert Sands School District and Abbey National, these organizations all had one thing in common — a vision. Each realized that competitive parity, reached through simple deployment of document-based technologies, was not enough. Competitive advantage was only achieved through the development of a corporate document strategy, aligned with, but not constrained by, technology alternatives. Whether you start with a new approach to printing on demand, or launch into cyberspace, there must be a vision in which old rules are broken. At the heart of that strategy is a newly defined document.

The emerging role for the document is as the interface to the information world, the interface by which people are

Flexing Your Document Power on the Internet

No discussion of the electronic document can ignore the impact of the Internet or World Wide Web. The Web is virtually on every organization's short list as a means of internal and external communication. And at the heart of the Web is the electronic document.

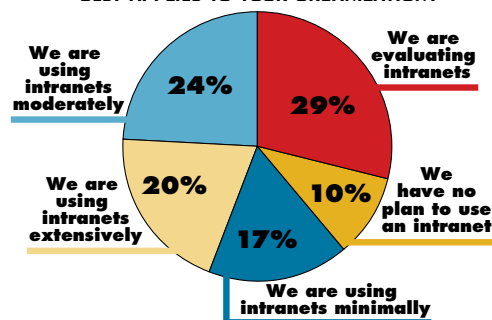
In a recent survey conducted by Delphi Consulting Group of 400 FORBES 500s organizations, 90% of respondents said they were using or actively evaluating an intranet. While putting up a Web site is relatively easy (and getting easier all the time), creating a Web site that is truly useful is not a trivial task. This is especially true of Web sites that are being created for business-critical applications, i.e., applications that go beyond electronic distribution of marketing collateral.

The Internet does much more than simply put documents online. It has effectively shifted the document metaphor from page/paper-oriented presentations to interactive objects. Unlike publishing for exclusive distribution in static media such as paper and CD-ROM, publishing on the Web delivers a document that is personal and timely. It is this ability that enables your clients to dial in and get their most current policy or account information online. It is the interactive and intelligent nature of the electronic document that can automatically link your clients to their current payment schedule and provide a suggestion of relevant new product offerings to consider and purchase. This type of document management provides critical data integrity and delivers uniquely personalized consumer information, assuring leading edge customer service and marketing.

Authors must now consider not just the message, but how it might link to related information on the Web. Furthermore, how does one keep track of all document changes and communications over time for historical/legal backup? The bottom line is how you maintain control over your information when the definition of the document is changing as quickly as the growth of the Web. It is only with this level of control that the true value of access to information over the Web can be reached.

Source: Delphi Consulting Group

WHICH STATEMENT BEST APPLIES TO YOUR ORGANIZATION?



interacting with information collections, and the way enterprises are reaching out to their clients in ways never before thought possible. Today's document collections are as rich in formats as they are in information.

The document is being transfigured from tangible pieces of paper to chunks of information assembled from multiple locations and data types into communication vehicles tailored to the business process and the user. Organizations that recognize this are changing the rules of the game. On-line profiling and real-time polling and routing of information based on specified user criteria are becoming commonplace via the Internet. Some companies are testing the concept of feedback — the ability of the document to recognize the reader's interests to suggest additional topics, or even to deliver an on-line commercial or brochure — all in real time.

Organizations are now being forced to ask, "Where do we stand on the

document management spectrum?" Examine your needs and goals, the type and nature of the information you collect and provide and the way your enterprise uses documents. Define document loosely — consider its evolving nature! Consider the creation delivery and control alternatives presented by the electronic document and begin building a foundation that will carry your enterprise forward into the 21st century. □

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