WHITE PAPER

Scanning Brings Cost and Efficiency Benefits to a Wide Range of Common, Everyday Business Processes

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IDC OPINION

Over the past several years, IDC has seen many U.S. companies gain benefits through the use of scanning as a means to bring cost-efficiency and productivity to everyday business processes. Scanning helps facilitate the transition of largely inefficient paper-based business processes into more efficient electronic-based processes. Through the increased implementation of scanning, companies have:

☑ Gained quicker access to important company information

☑ Saved time and costs associated with business operations

☑ Increased employee productivity

☑ Increased security of sensitive company documents

☑ Lessened reliance on paper storage, lowering space needs and costs

☑ Increased flexibility in distributing documents

☑ Created compliance with government regulations

☑ Replaced old and expensive document distribution tools (e.g., fax)

The recognition by many companies of the need to organize, manage, and store paper-based content in a more efficient electronic form has jump-started the scanning market opportunity. IDC's scan-enabled market forecast anticipates that this market will show solid growth from just under 1 million units in 2004 to more than 2.65 million units in 2009, representing a 22% annual growth rate.

IN THIS WHITE PAPER

The purpose of this white paper is to:

1. Define scanning and its important role in bringing numerous benefits to business operations

2. Understand the contributors to the strong market growth by articulating the benefits that office workers and companies have gained from scanning

3. Identify key horizontal applications and document-intensive vertical markets where scanning has been implemented

4. Highlight what potential buyers need to look for when considering scanning technology for their companies

The True Value of Scanning Goes Beyond Making Electronic Copies of Paper Documents

By definition, scanning is the act of systematically moving a beam of light over a surface to capture an image. At a basic level, scanning is really no different from copying. The creation of a copy or scan starts the same way — a user pushes a button and an image is captured.

The difference between copying and scanning is in the transfer of the image. Copying transfers the image onto paper; scanning transfers the image to an electronic form. In essence, the scan is an electronic copy.

However, scanning creates much more than just mere electronic versions of paper documents. Converting paper documents into an electronic form unlocks the true value of the information in scanned documents. Prior to the advent of scanning, the hidden "jewels" of critical company information were often underutilized or overlooked because the information was difficult to find or use in paper form. Scanning allows this important information to be extracted from the previously paper-only format and utilized and shared more quickly and easily across the company.

Scanned documents can be easily attached to and sent with email messages. Scanning can also enhance the benefits received from enterprise software systems by being integrated with document/content management software from vendors such as EMC/Documentum and Hummingbird or collaborative software applications such as Interwoven WorkSite and Open Text Livelink. Advances in scanning capabilities are making it easier than ever to link and automate data entry to these types of software. As a result, companies have much to gain from using scanning as an on-ramp to general business productivity and efficiency.

Benefits Gained from Using Scanning

IDC's research has revealed numerous benefits that can be gained by implementing scanning as a document distribution and management tool. Some of the key advantages of scanning include:

☑ **Easier access to business documents.** Once scanned, documents can be quickly retrieved using any number of keywords or indexes. Paper documents may be lost, destroyed, or misfiled.

☑ **Reduced time/costs in business processes.** The ease with which documents can be retrieved electronically can save time and/or costs within many common business processes that are fundamental to the business. Quicker access to information can help workers respond more quickly to customer inquiries, leading to increased customer service and satisfaction.

☑ **Reduced need for paper storage.** Large collections of paper documents require significant physical space. By reducing this requirement, a company can use valuable office space for other business needs.

☑ **Increased employee productivity.** Employee productivity can be increased when time/costs associated with business processes are reduced and easier access to job-related information is available. Workers are then free to focus on strategically important tasks for the company.

☑ **Increased document security.** Scanning preserves vital company documents in an electronic form. This information can be stored anywhere and in multiple repositories. On the other hand, paper will deteriorate over time. Increased document security is an important benefit for reasons of business continuity and disaster recovery planning. Additionally, companies can put in place security measures to prevent documents from falling into the wrong hands.

☑ **Flexible, fast, and cheap sending options.** A scanned document can be easily sent to a number of destinations (e.g., database, desktop, email, fax, file, or folder), eliminating the time and cost of physical distribution.

☑ **Compliance with government regulations.** The use of scanning has helped companies comply with government-mandated initiatives (e.g., Sarbanes-Oxley [SOX] Act, USA PATRIOT Act) related to document retention and retrieval.

☑ **Reduced reliance on costly fax transmission.** Faxing typically requires a long distance telephone call to distribute documents; scanning does not.

Scanning Usage Is on the Rise

Clearly, there is growing interest in scanning technology in today's marketplace. IDC believes the expansion of scanning activity is coming from the increased understanding that scanning achieves cost and efficiency benefits for users as highlighted above. Not long ago, scanning was the least understood and least utilized document function (behind print, copy, and fax). As this technology has become more pervasive, prices have dropped and performance has increased, leading to availability of a wider range of price performance levels that are being used in both centralized and distributed environments.

Companies have gradually learned that scanning usage and corresponding benefits can be applied directly to their overall cost of operation — profiting both employees and customers. The benefits are also widely available in horizontal applications that are common to all industries and also within specific document-intensive vertical markets.

Scanning Penetrates Horizontal Applications That Are Common to All Industries

IDC research has revealed that scanning is being used in common business processes that cut across all industries. As a result, IDC believes that all industries/companies can experience the benefits of scanning if the technology is implemented correctly. Some of the most common business processes in which scanning is being used to increase efficiency include:

☒ Accounting/finance documentation (e.g., purchasing, billing, expenses, check processing)

☒ Human resource documentation (e.g., resumes, applications)

☒ General office document creation and usage by knowledge workers (e.g., Word, Excel)

☒ Marketing document creation (e.g., flyers, brochures, newsletters)

Additionally, recent legislation has created situations in which scanning can be of significant help to companies in specific activities to achieve compliance:

☒ The 2004 Check Clearing for the 21st Century Act, or Check 21, holds potential benefits for virtually any business that receives/processes check payments. Check 21 enables companies to scan checks and capture check transactions as immediate deposits and can reduce the costs of dealing with bad checks. While retailers may be the first to capture this opportunity, any business receiving check payments can benefit from Check 21.

☒ The Sarbanes-Oxley Act impacts any company that is publicly traded. Companies can comply with SOX through the use of electronic document and records management solutions. Scanning is a critical part of implementing these solutions, transforming huge volumes of paper documents into an electronic format for inclusion in repositories.

Scanning Addresses Efficiency Needs in Document-Intensive Verticals

IDC's research also identified numerous workflows within document-intensive vertical markets that now benefit from digitizing and automating document handling. Some of the strongest opportunities for scanning recognized by IDC's research activity in traditional document/paper-intensive environments include:

☑ Healthcare institutions (e.g., hospitals, health insurance)

☑ Legal firms

☑ Financial institutions (e.g., banks [retail and commercial], retail brokerage)

The following sections highlight some examples of common business processes in these industries and how scanning is helping to bring lower costs and higher productivity to these processes.

Hospital Workflows and the Role of Scanning

Heavy document workflows in hospitals are generally related to patient care (e.g., admissions, transfers, housekeeping, discharge). In each of these patient care processes, information is captured to update the patient's care needs and requirements. Any inefficiency can slow down patient care, and any inaccuracies could have serious consequences. For example, a hospital's admitting area is the source of a very high volume of incoming documents, and several document activities take place in the admissions process:

☑ Documents are filled out at the point of contact.

☑ Scheduling is set up.

☑ Information is distributed to the appropriate departments.
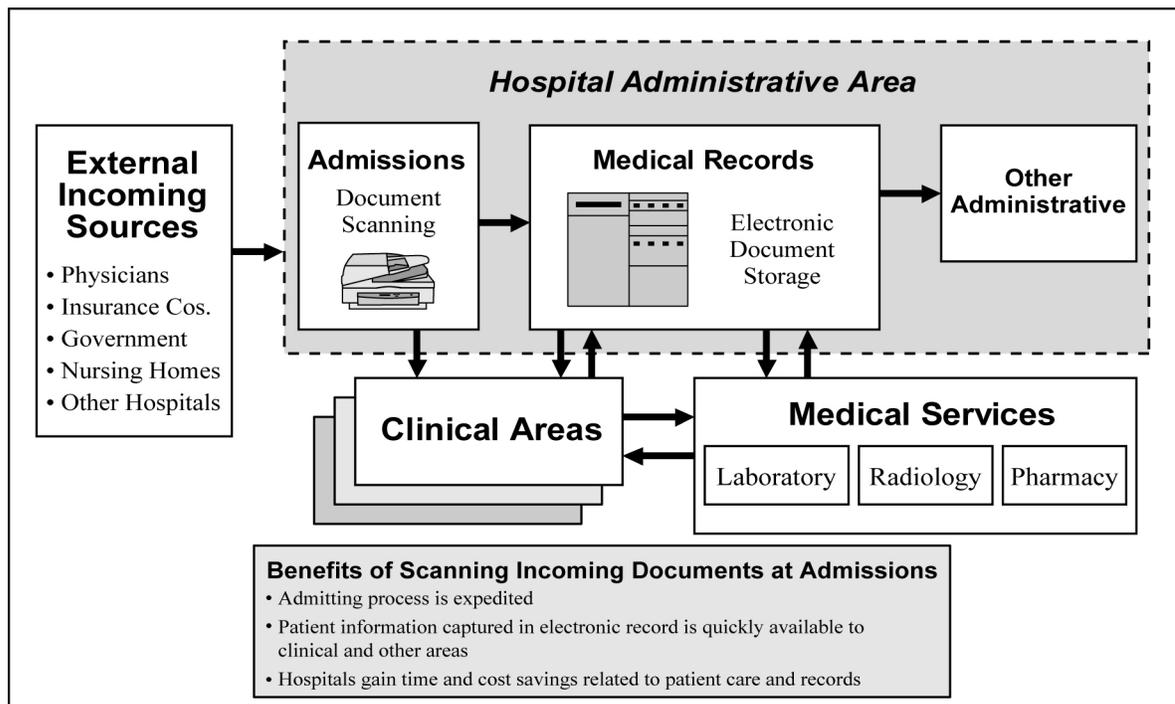
☑ A patient chart is created.

The essential components of this document flow are timeliness and accuracy. A heavily paper-based workflow makes distribution of patient information difficult. Typical problems include:

☑ Inaccurate/incomplete data capture

☑ Slowdown in accessibility to patient care (A paper document can be used only by one department at a time or multiple copies need to be processed and distributed.)

☑ Difficulty of integrating patient data from other healthcare facilities (e.g., primary care physician, other hospitals)

Figure 1 depicts the flow of documents into admissions and then into and within other areas of the hospital. Scanning documents during the admissions process has yielded time and cost savings related to patient care and patient records. First, it has helped to expedite the admissions process itself. Second, by capturing patient data early in the process, the hospital can create electronic patient records that almost immediately can be accessed on demand by multiple departments.

FIGURE 1

Hospital Document Flows

Source: IDC, 2006

The Health Insurance Portability and Accountability Act (HIPAA) has significantly affected the workflows of healthcare providers. For example, HIPAA requires that billing records and claims information be maintained for six years. HIPAA also states that patient records must be retained for two years after a patient's death. Large batch scanning processing facilitates the efficiency of this record-keeping requirement for hospitals — done either onsite or outsourced to an outside entity.

Health Insurance Workflows and the Role of Scanning

Another document-intensive workflow within the healthcare industry revolves around the processing of health insurance claims. The key requirements in this business process are:

☑ Shortening the time to process the claim

☑ Lowering the cost associated with each claim

☑ Using minimum storage cost and space for the claims

Companies still using paper throughout the processing of claims experience major pain points:

☑ Processing paper-based claims is more time-consuming and expensive than processing electronic-based claims.

☑ Storing paper is more expensive than storing an electronic form.

☑ More errors are typically associated with paper-based claims than electronic-based claims.

Today, while much claim documentation is submitted electronically, many health claims are still submitted in paper form. Scanning paper-based claims early in the document process will help insurance companies overcome many of the paper-related shortcomings of higher costs, time, and inaccuracies.

Legal Workflows and the Role of Scanning

In the legal market, the discovery process demonstrates a strong need for scanning. IDC found two key benefits of scanning documents into electronic format within the legal market:
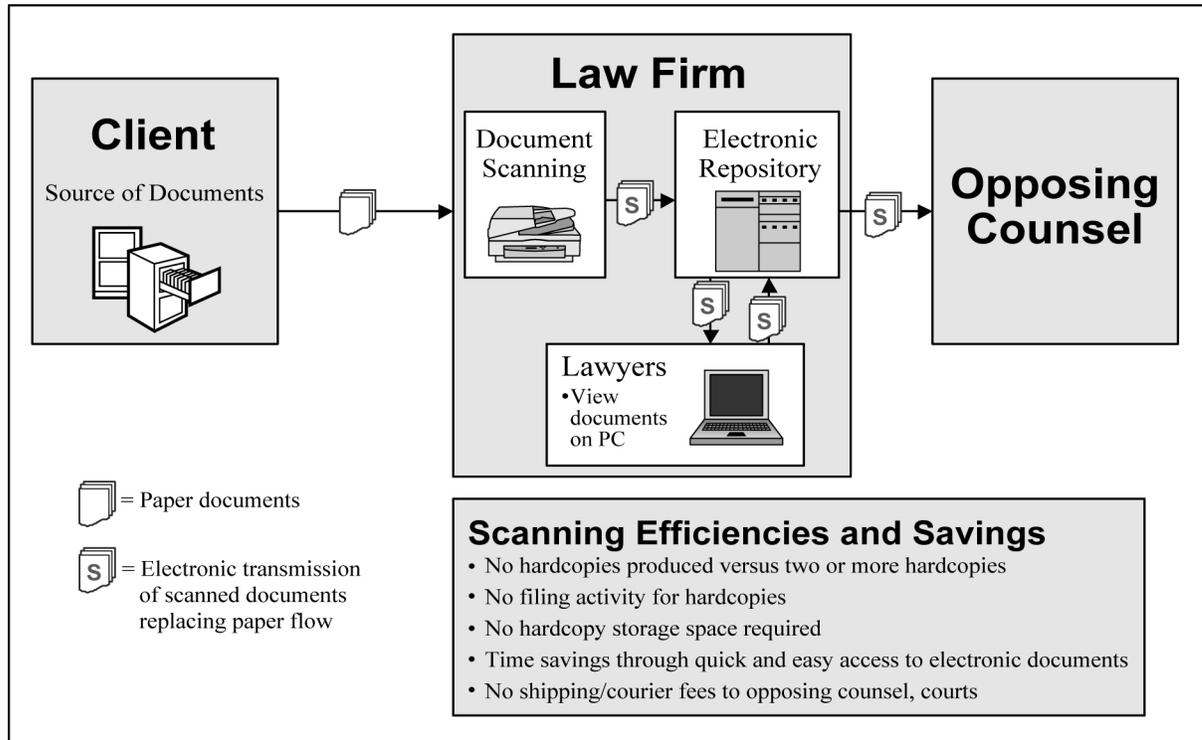
☑ Accessibility of documents

☑ Security of information

Once documents are scanned and indexed, the legal team can react more quickly and efficiently to discovery requests by finding relevant documents in the system. Additionally, an audit trail is established by indicating when documents were received and accessed by employees of the law firm.

Figure 2 depicts the use of scanning in the discovery process and lists time and cost savings gained through the use of scanning.

FIGURE 2

Legal Discovery Document Flows

Scanning Efficiencies and Savings
- No hardcopies produced versus two or more hardcopies
- No filing activity for hardcopies
- No hardcopy storage space required
- Time savings through quick and easy access to electronic documents
- No shipping/courier fees to opposing counsel, courts

Source: IDC, 2006

Corporate transaction workflows are another area of opportunity for scanning when attorneys prefer paper markups instead of electronic editing. Scanning edited documents can speed the delivery of documents and reduce distribution costs.

Financial (New Accounts/Loan) Workflows and the Role of Scanning

The processes to establish new accounts and loans are similar across all financial segments researched by IDC, including retail and commercial banking and retail brokerage. The processes include collecting information from prospective customers and disseminating it to appropriate bank or brokerage representatives and/or regulatory agencies for approval. Some of the pain points that financial institutions experience in meeting the needs of these processes are:

- Incorporating external customer documents (e.g., identification verification, financial statements)

- Using costly courier services or fax to move documents from branches to the middle and back offices

- Performing regulatory compliance checks, a relatively new requirement that adds to the cycle time (See the Using Scanning for USA PATRIOT Act Compliance section for more information.)

Optimally, each financial institution would like to streamline the retrieval and transmittal of documents. Most financial organizations report that scanning paper documentation into their systems offers efficiencies, including:
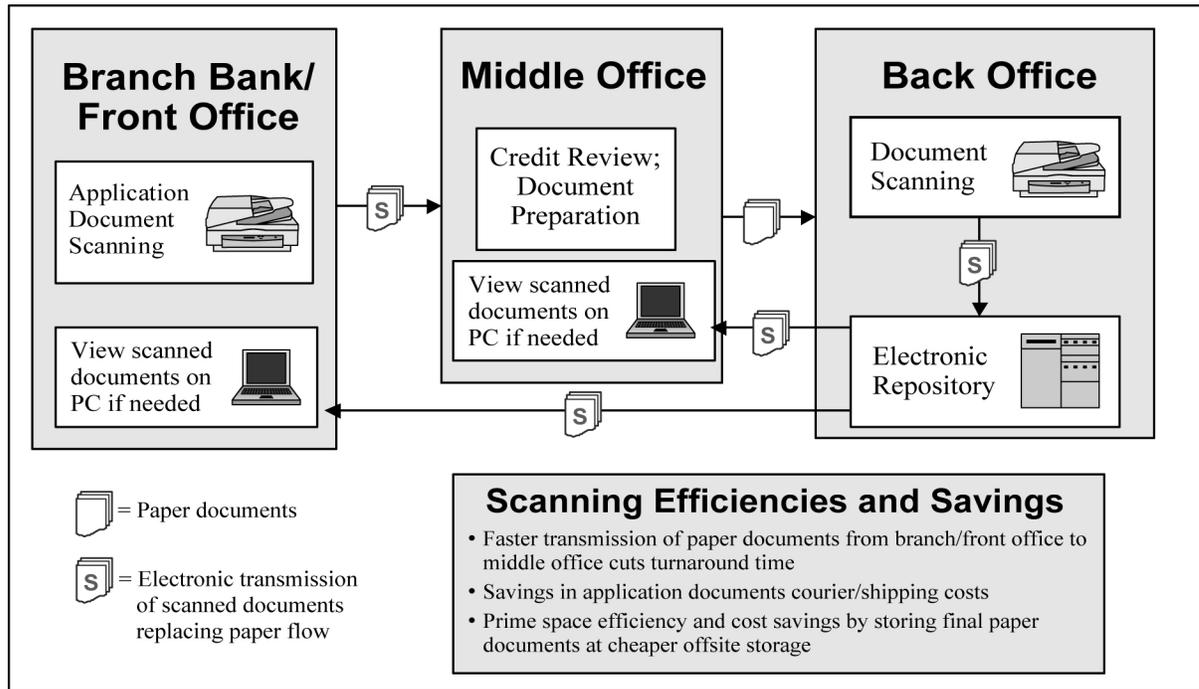
- Integrating the document flow between front and back offices and cutting associated fax and/or courier costs

- Streamlining retrieval of documents from and transmittal of documents to and from outside parties (e.g., regulatory, other bank departments, legal, operations)

- Speeding up the processing cycle

Financial institutions find that bringing documentation into electronic form as early as possible in the process (i.e., in the front office) is helpful to achieve maximum efficiency rather than carrying the paper application through any or all steps of the process). Additionally, scanning can be used to archive completed new account or loan documents via an in-house centralized back-office scanning operation or outsourcing to a third-party scanning service. The images of the scanned documents are then easily accessible if needed via electronic repository. If required by regulatory acts, the original paper documents can be stored offsite, which can help save prime office space and costs.

Figure 3 depicts the loan process document flows and efficiencies that can be gained through the use of scanning.

Bank Loan Processing Document Flows

Source: IDC, 2006

Using Scanning for USA PATRIOT Act Compliance

The USA PATRIOT Act requires financial services firms to verify the identity of an individual opening an account, maintain records of the documents used for identity verification, and be able to retrieve these records quickly if requested. Scanning an image of the identification documents — typically drivers' licenses or passports — into a repository provides an effective means of complying with the PATRIOT Act.

What to Look for in Scanning Solutions

Scanning solutions are available in the form of single-function scanners as well as multifunction peripherals (MFPs) that offer a combination of copy/fax/print/scan capabilities. Both configuration types are available in low-priced desktop or workgroup models and high-volume production models. IDC sees strong growth and interest for both configurations, and they will coexist through the foreseeable future. IDC's analysis of various industries shows that single-function scanners and MFPs are used within all vertical markets. Potential buyers need to consider the options available in each type of equipment and what will best suit their individual requirements.

Some of the strengths of using a single-function document scanner include:

- **Having a dedicated device for large batch document processing.** The device's sole function is to facilitate the paper-to-electronic transition by scanning documents. As the need for scanning grows, this type of implementation is growing rapidly.

- **Robust paper (media) handling requirements.** Single-function scanners are rigidly designed to support a wide range of media and sizes as a result of being used exclusively to convert media into electronic files.

- **Inherent security.** No information is stored locally at the device. Additionally, because the scanner is a dedicated device, it can be placed in an isolated or secure area where access could be limited to certain personnel.

- **The scanner's direct connection to a PC allows for almost immediate quality assurance of the scan.** The user can view the quality of the scan virtually instantaneously on the computer screen.

A good example of the use of dedicated scanners is in the legal market, where all paper-based documents need to be converted to electronic forms when used for discovery requests. Usually these environments require the processing of large document volumes; therefore, a dedicated device might be best to ensure efficient search and retrieval of important case data. Other environments that require scans of various media types and sizes might find a single-function scanner's wide range of media support attractive.

Some of the strengths of using an MFP with a scanning function include:

- **Integration with other document features.** An MFP is not dedicated to one function. It offers a combination of copy, fax, print, and scan capabilities. MFPs are becoming more popular as replacements for several single-function devices (printers, copiers, or fax) as companies look to consolidate the number of hardcopy devices in their fleet, saving space and cost per function.

- **Network connectivity.** An MFP can be connected either to a PC or to the computing environment via the network. This connectivity is particularly helpful in corporate office environments, most of which are network-enabled.

- **User-friendly control panel.** An MFP uses a familiar user interface (e.g., a copier LCD panel) that makes the device easy to use without needing to be connected to a PC.

An MFP scanning device might be useful in environments in which individual records are processed one at a time or only occasional scanning is needed. In the example of the hospital admissions process, the patient record can be scanned immediately after the information is recorded on paper rather than scanning batches of documents as highlighted in the legal example. The hospital's document environment needs convenience-oriented, low-volume scanning. Once the admission form and other admitting documents are scanned, the record can be retrieved by staff members/ departments that will interact with the patient. Additionally, the MFP configuration provides the hospital with incremental printing and/or copying capabilities, without requiring additional network connection or physical space.

Of course, the choice of scanning solution — single-function versus multifunction — is only one aspect that adopters need to consider. Other key factors to consider when evaluating scanning solutions are as follows:

☒ **Destination for scanned documents.** If the electronic document is used primarily for sharing or distribution purposes, it might be efficient for the scanner to incorporate functionality such as scan-to-email/folder or other destinations for storing documents. If scanned documents will be integrated with enterprise content/document software solutions, potential scanner buyers should keep in mind what data needs to be captured (e.g., barcodes, account information) and what the requirements are for getting this data into the system.

☒ **Appropriate duty cycles and speed to handle the necessary volume in a timely manner.** The scanning solution should have a duty cycle rating that coincides with the estimated volume planned for the device. Also, the scanning solution's rated speed should meet or surpass the company's requirements for recurring document processing needs.

☒ **Media requirements.** Scanning solutions are equipped with a variety of media-handling support capabilities. Many scanners offer a flatbed platen (glass) for scanning one page at a time. This type of configuration is appropriate when scanning requirements are low volume and the document is limited to one page or for capturing fragile or bound documents. Other devices incorporate an automatic document feeder to feed multiple pages at one time. This type of configuration is more efficient in scanning environments where the volumes are higher and the documents typically are more than two or three pages. Additionally, potential scanner users should determine what type of media support is required (e.g., letter size, 11in. x 17in., card stock, carbon forms, plastic cards) and make sure that their scanner choice can handle the types and sizes of documents common to their business.

☒ **Image processing functions.** Many document scanners are equipped with technology to optimize scan quality and eliminate scanning inefficiencies, as well as address specific application processing requirements. Image processing functions can address image inconsistencies such as alignment, brightness, contrast, and light handwriting to ensure high-quality scans. Scanner buyers should become familiar with the type of image processing functions available and determine which will satisfy their requirements based on the type of documents to be scanned and how the resulting document images will be used.

☒ **Specialty applications.** New types of scanning devices are emerging for specific imaging workflows, such as specialty check scanners used for Check 21 applications involving check payment or deposit processing.

Challenges to Address

Overall, IDC's research revealed many user benefits derived from the use of scanning. Still, potential scanner buyers need to be aware of obstacles that may present challenges to acquiring and implementing scanning technology, including the following:

☑ **Management's need to see ROI.** Prior to making technology investments, managers want to have quantitative documentation that promises a return. While many technology investments can directly show savings (e.g., reduced IT staff or equipment costs), the ROI on scanning investments is not always clear. Adding scanning helps reduce costs in some situations (e.g., cutting back staff that did manual data entry and filing), but scanning investments often lead to benefits whose value can be difficult to quantify (e.g., time savings and increased user productivity of employees *using* scanned documents). Many of the firms that discussed their scanning implementations with IDC are convinced of the resulting benefits, but without supporting empirical data, they are sometimes still challenged by management when advocating additional scanning technology purchases.

☑ **User resistance.** Users may be resistant to alter work processes with which they are comfortable. It can be most difficult to overcome resistance with professionals (e.g., lawyers, doctors) who learned their trade without the use of technology. However, as the workforce becomes increasingly technology-savvy, this hurdle is being lowered.

☑ **Impact on the existing infrastructure.** The use of scanning will need to be supported by an IT infrastructure that can adequately handle the changes to the work environment that will occur. Scanned documents will need to reside in a repository that has the capacity to handle the volume of information previously relegated to traditional paper storage systems. Scanning implementations will increase the demands on email, document management, storage, and computer network systems.

By being aware of these challenges, companies can be prepared to address related concerns and ultimately bring scanning into their business processes.

Conclusion

U.S. companies continue to make increasing investments in IT hardware and software to more effectively manage document workflows. These investments have led to an explosion of electronic repositories for important company documentation.

Interestingly, this development has not put an end to paper-based documents. On the contrary, the rising collection of PCs, database, and collaborative/document management software has actually led to continuing growth in paper document creation. The result is that the task of managing the increasing volume of both paper-based and electronic document workflows is more challenging than ever — especially if the appropriate tools and technologies are not in place.

Scanning plays a pivotal role in helping companies achieve cost and efficiency gains by facilitating the paper-to-electronic transformation in everyday business processes. With this assumption understood, potential customers should consider moving forward with scanning implementations that address their specific business process inefficiencies.

While certain vertical and horizontal applications have been identified as strong scanning implementation candidates, IDC believes these findings are applicable to all markets in which paper-based document flows still exist.

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