

Check Imaging: A Critical Transition Technology

Change and continuity are the watchwords of the U.S. payments system. In the late 1700s, households, businesses and governments engaged in economic transactions just as they do today, but with an entirely different set of value instruments. Barter transactions, personal IOUs, bills of credit, even Spanish *pieces of eight* were used as payment. There were no banks as we know them today. In most transactions, purchasers and sellers knew one another.

Fast-forward to 2002. Barter is isolated to a very small, loosely organized subculture of tax-avoiders. Pieces of eight are found in museums and in some treasure hunter's dream, strewn along the ocean floor from Cartagena to Key West. Today, households and businesses can choose from a wide range of payment instruments, ranging from currency and checks to instruments like debit, credit and smart cards, automated clearing-house transactions and wire transfers.

This transition has much to say about the future of checks and about the role of digital imaging in check services. Payment instrument choice is a function of at least four powerful, overlapping factors. These factors were powerful in the United States of the 1700s and remain so today.



Today's technology captures quality digital images of checks moving 30 miles per hour.

Factors in Payment Choice

- Acceptability and attractiveness of any instrument, or evidence of payment, to households and businesses (How widely available, reliable, trustworthy, convenient or anonymous is the means of payment?)
- Acceptability and attractiveness to financial intermediaries engaged in serving the transactions and savings needs of American households and businesses
- Available technology and its adoption by financial intermediaries and their customers in ways that influence preferences for payment instruments and evidence of payment
- The regulatory, legal and institutional environment, which acts as a general framework within which choices are made

Developments in all four of these areas are promoting movement from microfilm as evidence of check payments to digital image capture, storage and retrieval systems.

Consumers

The relative importance of checks in the portfolio of payments is declining. The alternatives, credit and debit cards for the most part, provide evidence of payment in a different, almost entirely automated manner, with a monthly bill detailing each transaction. At the same time, a significant portion of the U.S. population is making use of other channels which provide immediate evidence of payment, as do Internet transactions. Some 65 percent of households now have PCs; 45 percent have Internet access; about 33 percent have shopped on the Internet; and 20 percent have executed purchase transactions on the Internet. The nation's largest financial institutions report that between one-third and two-thirds of their

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consumer accounts are now truncated (with monthly reporting supported by image statements in some cases).

These findings indicate that consumers are becoming increasingly friendly to receiving an image-based substitute to their checks. On a cautionary note, there are parts of the banked population, particularly business accounts and the wealth-management segment, where image-supported statements have yet to make significant inroads. Financial institutions of all sizes are working hard to move these profitable account holders to an image-based environment.

Financial Institutions

Three forces are driving financial institutions to consider digital imaging of checks more seriously:

- Use of sophisticated customer segmentation, with customized products and fees, is enabling financial institutions to identify segments that are amenable to check truncation or online banking.
- Financial institutions are looking to strengthen relationships with profitable customers. Online banking with Internet access to checks and a robust image archive support this effort.
- Banks and thrifts are under increasing cost-control pressure as they compete for customers in a more deregulated environment and respond to intensified shareholder pressure. Digital imaging of checks helps control costs in areas such as proof of deposit, lockbox, help desk, customer service, electronic foldering and the rendering of monthly statements.

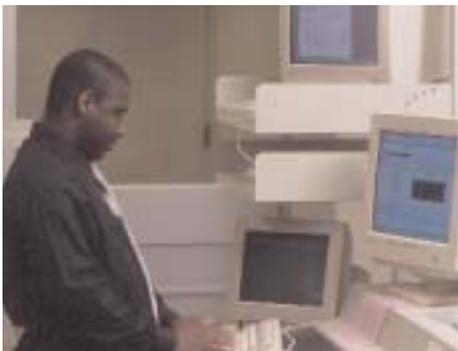


Image quality is monitored during processing to ensure clear, concise images are captured.



The Federal Reserve forecasts imaging and truncating 57 million items in 2002.

Technology

Technology is the great facilitator of check imaging in today's world. Digital imaging technology, originally developed to take high resolution photographs of Soviet missile silos from a plane or satellite, can capture a quality digital picture of a check running through a reader/sorter at 30 miles per hour. The cost of indexing, storing and retrieving that item from an image archive has declined dramatically in the past decade in tandem with lower costs for computer processors and disks.

Regulatory Environment

The Uniform Commercial Code (UCC) and its depositor agreements regulate the business of check and check imaging in the U.S. banking system. In most states, UCC mandates that facsimiles of the original checks must be stored and made available on demand for seven years after receipt at the bank. Although this regulatory requirement is not changing, check storage is changing from microfilm to image.

Image use is benefiting from a regulatory push on two fronts:

- The NACHA accounts receivable conversion rules, under which payments initiated as checks by the consumer can be converted to ACH debits in a lockbox operation, mandates that the lockbox capture images of all such items and store them for two years.

- The proposed Check Truncation Act would allow collecting banks to present image files or image-replacement documents in lieu of physical checks to paying banks.

Continuity and Change

Checks will be around for some time to come, although the number and proportion of checks relative to all payments will continue to decline. The acceptability of images as a substitute for paper will increase in the next 10 years, and the incentives for financial institutions to convert to image, for reasons of cost control, fee generation, market share and customer service, will grow. The cost of entry for image services will decline steadily for in-house and third-party solutions. And the regulatory environment will become increasingly friendly to image as a substitute for paper.

And 100 years from today? Digital imaging of checks will likely be a forgotten paragraph in U.S. economic history, and paper checks themselves will be a faded memory. Even so, digital imaging is a critical transition technology that will make today's payments system better, faster, cheaper and assist the United States in moving to an all-electronic payments system.

*Dan Littman
Check Product Manager
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A Sharper Focus on FedImageSM Services

You've been hearing about the Federal Reserve's Check Modernization initiative for some time now. To serve you better, we're standardizing our check-processing equipment and software across the country, implementing a common check adjustments platform, and rolling out safe and secure electronic access and delivery of check services over FedLine[®] for the Web.

Now coming into sharper focus is one of the most exciting and technically complex aspects of Check Modernization: FedImage Services. This product features a standard check-imaging platform with a national image archive and enhanced research and retrieval capabilities. The Minneapolis office, home of one of the Federal Reserve's two national archive sites, began archiving Ninth District images last spring, with output functionality expected to become available later this year.

Benefits at a Glance

FedImage Services offers the following benefits:

Enhanced Customer Service

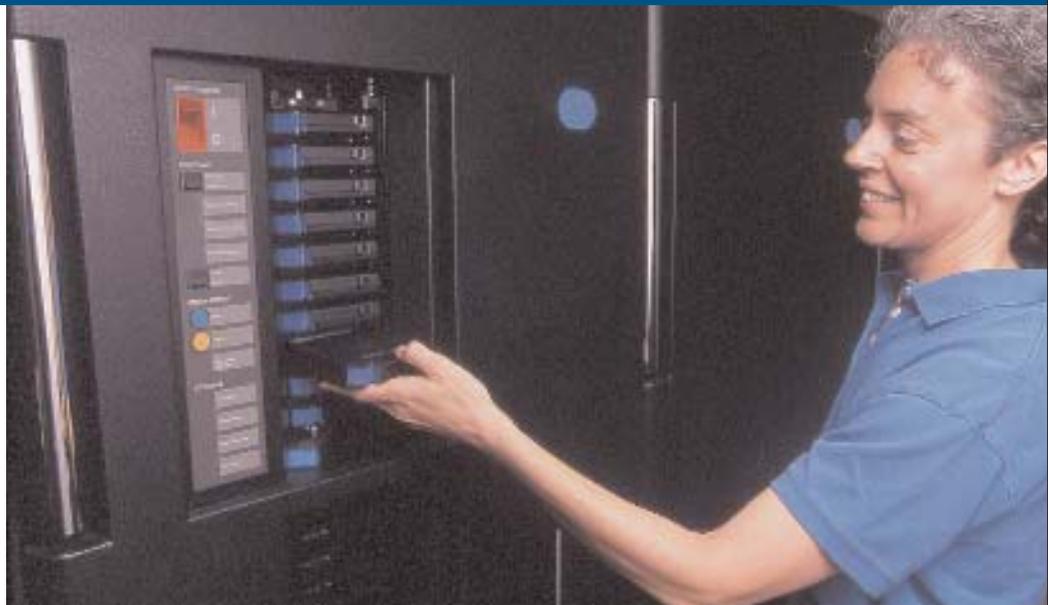
- Offer the convenience and clarity of image statements
- Expand services to corporate customers
- Reproduce customers' checks or statements while they wait

Increased Internal Efficiencies

- Reduce inquiry and research time by 75 percent to 90 percent
- Cut statement rendering time up to 90 percent
- Provide institution-wide access to items

Lower Costs

- Free employees from sorting and time-consuming retrievals
- Eliminate capturing and microfilming of incoming Federal Reserve cash letters
- Save on postage and storage costs



To guarantee availability of your images, Federal Reserve staff back up all images daily.

"FedImage Services is among our most demanding applications in terms of technical intricacy and security requirements," says Steve Whitney, senior vice president at the Federal Reserve Bank of Boston and leader of the imaging project. "This is largely due to our decision to implement a different kind of capture and delivery infrastructure than is available from any other third-party service provider nationwide."

FedImage Services makes check images available within hours of capture, allowing you to improve response time to customer inquiries and requests. You can directly access the national image archive through a secure Internet application interface or via FedLine for the Web. Check images are stored based on your retention requirements to ensure long-term integrity. You will be able to offer secure transmission of image files and Internet access of images to others within your own institution, as well as to your retail and corporate customers.

Options Abound

Basic Image Capture, the cornerstone of all Federal Reserve check imaging services and delivery options, can be provided on all inclearing items received from the Federal Reserve or from other presentment sources. In addition, Basic Image Capture can be provided for "on-us" over-the-counter items. FedImage Services provides a variety of delivery options so you can produce image statements for your cus-

tomers or retain images for future in-house retrievals. Basic Image Bulk Delivery allows you to periodically receive a file containing all the images stored over a specific time period. The images and corresponding MICR information can be delivered via file transmission or on electronic media. Delivery frequency can be daily, weekly or monthly.

Because FedImage Services eliminates the need for locating the physical items or producing a copy from microfilm, Non-recurring Image Retrievals provide the fastest and easiest way to make a return item decision or satisfy a customer's check request. You can quickly search,



Up to 50,000 items are imaged and recorded on one CD.

A Sharper Focus on FedImageSM Services

view, print, fax or e-mail individual check images using FedImage Services via FedLine for the Web. Customers can also submit a request for a specific check by fax or DOS-based FedLine, and the image copy is faxed back to them. Recurring Image Retrievals allow customers to automatically receive images of all checks that meet specific criteria, such as dollar amount or suspect account numbers.

Full functionality of FedImage Services is expected to become available nationwide by mid-2003. For more information on how this new product can benefit your institution and your customers, contact your account manager.

*Lori L. Hood
Image System District Transition Coordinator
Federal Reserve Bank of Minneapolis—
Helena Branch*



FedImage Services is accessed via FedLine for the Web at www.frbsservices.org.

Your Account Manager Can Help



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Bill Hubbard, Sales Support Representative
Marilyn Coleman, Account Manager
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The ABCs of Check Imaging

Check imaging provides faster access to check information, improves productivity by streamlining backroom operations, reduces storage space requirements, allows faster response to customer requests, and delivers better quality check copies. The benefits of check imaging are undeniable, but how does imaging work and how does it differ from microfilming?

Capture

Items can be filmed or imaged at the point of deposit, at the endpoint or both. The process of check imaging involves capturing a digitized representation of the front and back of an item as it passes through the sorters. A check image can be stored on any type of computer media including disk, CD-ROM, optical platter or tape. Because images are captured on the sorters, they are available within hours of processing.

Filming, on the other hand, may take place during processing or afterward as a separate step. Filming involves taking a photo, developing the film and storing the photo on microfiche or microfilm. Depending on the size of an operation or the type of items being filmed, it can take up to a week before the film is completely used and ready for developing.

Storage

Imaging offers great flexibility and convenience when it comes to storage. If images are



Nine boxes of checks or one CD. Which would you rather store?

stored in an image vendor's archive, the financial institution eliminates all need for physical storage. Even if image CDs are used for archive purposes rather than microfilm, the storage requirements are significantly reduced.

Retrieval

The processes for retrieving check copies from an image system versus microfiche or microfilm are dramatically different. To locate a copy of an item on microfiche or microfilm, an operator must search the items

sequentially. This can be time consuming. If the request is for a current-day item, the film must be developed before the copy of the item can be retrieved. As mentioned earlier, it can be a week before film is developed. When a copy is retrieved and printed from microfilm, the quality is typically poor.

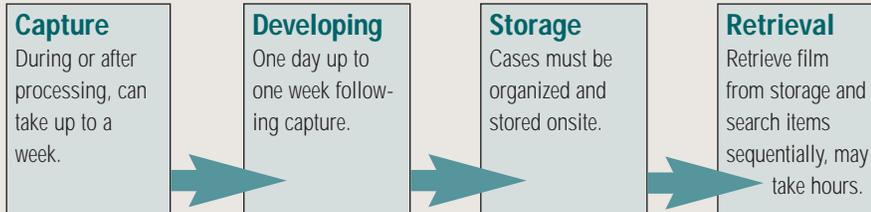
With check imaging, the image is available within as little as two hours from capture. Whether the item is stored in an online archive or on media such as CD-ROM, a search function allows items to be easily located by amount, account number or sequence number. The search may take up to a minute or so. Copy quality is very good since items are typically printed on a laser printer.

Capture, storage, retrieval... the benefits of check imaging are great. Check imaging allows for easier exception processing and large dollar item review. Images are available quickly, and customer requests are answered promptly. With enhanced customer service, imaging will help maintain or improve a competitive position.

*Nancy Nordlund
Associate Account Manager
Federal Reserve Bank of Minneapolis*

Check Imaging at a Glance

Microfilming:



Check Imaging:



Appointment of Standards Coordinator Reflects Federal Reserve Commitment

In late 2001, the Federal Reserve Payments System Development Committee created the position of "Payments System Standards Coordinator." This role is intended to serve as an internal and external point of communication and coordination for standards and industry activities that have the potential to offer improvements in the accessibility, integrity and efficiency of the payments system. Laura Walker joined the Federal Reserve in this role in January 2002, reporting to the eBusiness Strategy Office.

As Payments System Standards Coordinator, Walker works across the System and with industry stakeholders to facilitate the adoption of standards that will lead to a fully interoperable global payments environment. With a strong commitment to trade facilitation and information interoperability, Walker is active in X9, BITS, ISO TC68, SWIFT, OASIS, FSTC, W3C and many other financial services industry groups and standards initiatives.



Laura Walker
Financial Services Payments System
Standards Coordinator
Federal Reserve Bank of Boston

Of particular note is X9, the ANSI-accredited organization that develops standards for the domestic financial services industry. Through active involvement of Federal Reserve Retail Payments Office staff in the Check and Check-Related Transactions Subcommittee (X9B), the Federal Reserve hopes to propel the payments system toward greater adoption of electronic check exchange. This will be accomplished in part by phasing in support for ANSI X9.37, the electronic check exchange standard, by mid-year 2005. In addition, the Federal Reserve is facilitating an industry collaboration on the development of technical specifications and standards necessary to move to an interoperable electronic check processing environment, including the exchange of check images.

If you have questions or comments about payments system standards, please contact Walker at laura.walker@bos.frb.org.

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